e-ISSN: 2745-9535
No. 105/E/KPT/2022
Jurnal Pengabdian Masyarakat
Member of: AJEBI
Editorial Office: Jl. Soekarno-Hatta, Rembuksari No. 1A, Malang, East Java, Indonesia, 65113
Contact: Phone: +62 (341) 478494 e-mail: jpm@asia.ac.id
The journal is published by Institut Teknologi dan Bisnis Asia Malang
Website: https://jurnal.stie.asia.ac.id/index.php/jpm
Indexed in: Google Crossref neliti GARUDA Journal Dimensions

Improving Digital Literacy of Vocational School Students through the Utilization of Google Workspace

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Volume
7
Issue
1
Edition
May
Page
7-14
Year
2026

Article History

Submission: 08-09-2025
Review: 26-12-2025
Accepted: 14-03-2026

Keyword

Digital Literacy;
Google Workspace;
Vocational School;

How to cite

Irfani, K. S., Lestari, S. W., Safitri, W., Wahdina, M., & Dianta, V. V. (2026). Improving Digital Literacy of Vocational School Students through the Utilization of Google Workspace. Jurnal Pengabdian Masyarakat, 7(1), 7-14. https://doi.org/10.32815/jpm.v7i1.2810

Abstract

Purpose: This community engagement program is designed to enhance the digital literacy of students at State Vocational High School 50 Jakarta through structured training and guided mentorship centered on the effective utilization of Google Workspace.

Method: Implementation followed a multi-stage framework comprising stakeholder orientation sessions, intensive skill-building workshops, practical integration of digital tools into classroom instruction, and periodic evaluative assessments.

Practical Applications: The initiative strengthens students' readiness for participation in the digital workforce and aligns with the targets of Sustainable Development Goal 4 (Quality Education).

Conclusion: Observational data reveal a marked improvement in students' proficiency with Google Docs and Google Classroom, accompanied by positive shifts in educators' pedagogical practices, as evidenced by the growing integration of digital technologies into instructional methodologies.

8) Improving Digital Literacy of Vocational School Students through the Utilization of Google Workspace, Khansha Sindra Irfani, Sri Widi Lestari, Wulan Safitri, Mely Wahdina, Vadisya Vandra Dianta

Introduction

The transition from conventional pedagogical systems to digital learning models has been empirically demonstrated to enhance student enthusiasm and engagement in the educational process. Digital platforms such as Google Classroom, YouTube, Canva, Wordwall, and Quizizz have proven effective in creating more attractive and interactive learning environments, thereby facilitating student comprehension of instructional materials (Z. D. Rifai et al., n.d.). Nevertheless, the optimization of digital learning faces significant impediments, including unstable internet connectivity, device limitations, and low levels of digital literacy (Tauhid & Rafidah, 2025).

Corroborating evidence within Informatics education indicates that digital literacy exerts a significant positive influence on student learning outcomes (Dwi Erman et al., 2025). This underscores the imperative of strengthening digital literacy as a foundational element of technology-based instruction. Furthermore, the impact of digital literacy training extends beyond students; in vocational high schools (SMK), training on digital technology usage directly enhances both teachers' mastery of instructional content and their own digital competencies. For instance, following training sessions focused on coding, design, and algorithms, SMK teachers demonstrated significant performance improvements based on pre- and post-test analyses. Consequently, interventions utilizing platforms such as Google Workspace hold substantial potential for reinforcing digital literacy among both students and educators in vocational settings.

This context is particularly relevant to SMK Negeri 50 Jakarta, which possesses Google Workspace infrastructure yet suffers from suboptimal implementation in classroom instruction. While digital technological advancements have acted as a primary catalyst for pedagogical transformation—accelerated by the pandemic-induced adoption of online platforms—their effectiveness remains constrained by infrastructure, access, and user competency (Nurramdhani, Normansyah, & Sukarliana, 2023). Research establishes a significant correlation between the quality of student digital literacy and academic achievement. For example, at SMKN 1 Sintang, student digital literacy averaged 75 on a specific measurement scale, yielding a significant positive impact on Informatics subject performance. These findings not only illustrate a positive relationship but also reflect pedagogical practices wherein teachers utilize computer laboratories and technology to foster critical thinking (M. Rifai et al., 2024). Additionally, digital literacy levels at SMK Muhammadiyah 3 Yogyakarta were categorized as "Good," with a mean Likert score of 3.23; however, within the 3.00–3.49 range, this is considered not yet optimal (Wardani et al., 2024). This confirms that despite adequate proficiency, there remains considerable scope for enhancing digital competencies among vocational students.

Given this backdrop, state vocational schools such as SMK Negeri 50 Jakarta—equipped with Google Workspace access but lacking maximal utilization—require strategic intervention to elevate the digital literacy of both students and teachers. Google Workspace offers significant potential to support collaboration, efficiency, and productivity within educational environments. Acknowledging barriers such as uneven internet access and limited technology utilization by stakeholders, this training program aims to optimize Google Workspace usage as a mechanism for strengthening applied and impactful digital literacy. Consequently, this community engagement initiative is designed to deliver practical training on Google Workspace utilization to students and teachers at SMK Negeri 50 Jakarta. The program is expected to enhance digital skills, expand the integration of technology in teaching and learning processes, and support participants' readiness for entry into the digital workforce.

Figure 1. Google Workspace Training

Source: Author's Work, 2026.

Method

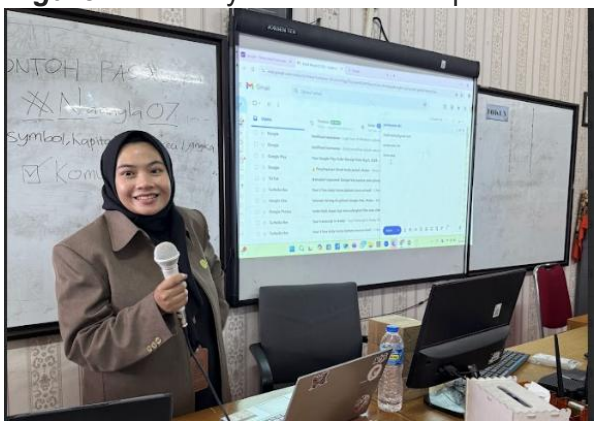
This community engagement initiative was architected around a hands-on pedagogical framework comprising several strategic phases, grounded in methodologies proven effective for Google Workspace integration across various educational institutions. The process commenced with a comprehensive diagnostic observation at SMK Negeri 50 Jakarta, designed to evaluate existing digital infrastructure, current utilization patterns of Google Workspace, and specific literacy barriers encountered by both educators and students. This preliminary assessment phase aligns with the initial observation model successfully implemented at SMA Dharma Bakti Lubuk Pakam, wherein contextual analysis served as the empirical foundation for developing tailored training modules that address field-specific needs (Simangunsong et al., 2025). Subsequent to data collection and needs analysis, thematic training modules were systematically developed to encompass core Google Workspace functionalities—including Gmail, Drive, Docs, Forms, Classroom, Meet, and Slides—alongside their collaborative applications. These modules were intentionally structured to be both thematically coherent and practically accessible, replicating instructional designs that have previously demonstrated significant improvements in teacher digital competency through scaffolded, context-relevant content delivery (Simangunsong et al., 2025).

The implementation phase employed a bifurcated instructional strategy designed to balance theoretical understanding with applied skill development. Initially, informative seminars provided narrative explanations regarding the functional capabilities, pedagogical benefits, and strategic integration of Google Workspace tools within contemporary learning environments. This was followed by interactive workshop sessions, wherein participants engaged in hands-on experimentation with platform features—such as creating virtual classrooms in Google Classroom, designing assessment instruments via Forms, and managing collaborative document workflows in Drive—under the intensive guidance of trained facilitators. This hybrid pedagogical approach mirrors effective practices documented at SMK Cendekia Madiun, where the deliberate integration of lecturing, inquiry-based dialogue, and experiential practice fostered an interactive and application-oriented learning atmosphere (Chrisantyo et al., 2024). Throughout these sessions, emphasis was placed not only on technical proficiency but also on pedagogical adaptation, encouraging educators to envision and prototype technology-enhanced instructional scenarios relevant to their respective subject areas.

Continuous mentorship and formative feedback mechanisms were embedded throughout the training lifecycle to support participant learning trajectories. Competency development was formally assessed through pre- and post-test instruments complemented by practical assignments—such as developing sample digital content or configuring classroom management workflows—which collectively evidenced measurable enhancements in digital

literacy comparable to outcomes reported in similar interventions (Simangunsong et al., 2025). Informal evaluation methods, including real-time activity observation and structured reflective discussions, further enriched the assessment process by capturing nuanced shifts in participant confidence and instructional intentionality. Concluding the program, post-training reflective sessions facilitated critical dialogue regarding participant experiences, persistent technical challenges, and emerging professional development needs. Insights derived from these reflections informed actionable recommendations for sustained capacity building, including periodic follow-up mentoring, development of advanced modular content, and the establishment of peer-to-peer coaching networks among educators to institutionalize digital literacy gains beyond the immediate scope of the intervention.

Figure 2. Literacy and Practice Improvement



Source: Author's Work, 2026.

Result

The community engagement initiative at SMK Negeri 50 Jakarta was implemented through a structured dual-phase framework comprising theoretical seminars and hands-on practical workshops centered on the Google Workspace ecosystem. The curriculum specifically targeted core applications including Gmail, Google Drive, Docs, Forms, Classroom, and Meet, aiming to bridge the gap between abstract digital concepts and technical proficiency. This pedagogical approach was designed to ensure that participants not only understood the functional capabilities of each tool but also recognized their strategic value within an educational context. By segmenting the intervention into distinct instructional and application phases, the program sought to maximize knowledge retention and facilitate the immediate transfer of skills from the training environment to actual learning scenarios.

During the seminar phase, students demonstrated heightened cognitive engagement, characterized by active note-taking and inquiry-based participation regarding the utility of digital technologies in academic settings. This enthusiasm transitioned into the practical workshop session, where the majority of participants successfully generated digital artifacts, such as simple documents and assessment forms, and navigated the enrollment process for Google Classroom under the guidance of facilitators. The scaffolding provided during these hands-on sessions was critical, allowing learners to overcome initial technical hesitancies and achieve tangible outputs. This progression from passive reception of information to active creation of digital content underscores the effectiveness of experiential learning models in fostering digital competency among vocational students.

Assessment of learning outcomes was conducted through a multi-modal evaluation strategy involving direct questioning, observational checks, and informal interviews. Through interactive Q&A sessions, most students were able to articulate the functions and applications of the features they had practiced, indicating a robust level of conceptual understanding. These findings corroborate empirical evidence from similar interventions, such as the training program at UPT SMP Negeri 19 Gresik, which established that a combination of lecturing,

practical execution, and inquiry significantly enhances participants' digital skills (Shobri et al., 2023). Furthermore, the efficacy of using observation and informal interviews as assessment metrics aligns with reports from digital literacy programs in Desa Seraya Marannu, where such methods successfully captured improvements in participant competency following practice-based training (Maulana El-Haq & Muizu, 2025).

In conclusion, the training program succeeded in delivering both conceptual knowledge and practical skills, encouraging students to integrate digital tools into their daily learning routines despite existing infrastructural challenges. While technical constraints, particularly limited internet accessibility, remain a barrier to optimal implementation, the intervention effectively initiated a shift in digital behavior and confidence among the student body. The ability of participants to navigate Google Workspace independently suggests that targeted pedagogical interventions can yield significant literacy gains even in resource-constrained environments. Consequently, this initiative not only addressed immediate skill gaps but also laid the groundwork for sustained digital adoption, highlighting the necessity of continued support to overcome logistical hurdles and fully realize the potential of technology-enhanced education.

Discussion

The empirical outcomes of the training initiative indicate that the hybrid model combining seminars with practical Google Workspace exercises significantly enhanced students' comprehension of digital technologies in educational contexts. These findings substantiate the hypothesis that practice-based pedagogical approaches yield superior efficacy compared to exclusively theoretical instruction, as they facilitate the immediate application of abstract knowledge into tangible skills. By engaging directly with the tools, students transitioned from passive recipients of information to active users, thereby reinforcing cognitive retention through experiential learning. This alignment of theory and practice ensures that digital literacy is not merely understood conceptually but is embodied through operational proficiency, a critical distinction in vocational education where skill application is paramount.

Furthermore, the integration of digital media such as Google Classroom and Canva was observed to substantially elevate student motivation and interactivity within the learning environment. This affective improvement suggests that technology serves as a catalyst for engagement, fostering a more dynamic classroom atmosphere even when confronted with infrastructural constraints. As noted by Shobri et al. (2023), while technical hurdles such as unstable internet connectivity and device limitations persist, the pedagogical benefits of digital tools often outweigh these challenges, provided that adaptive strategies are employed. The resilience demonstrated by students in navigating these technical barriers underscores the potential of digital platforms to transform learning experiences, turning potential obstacles into opportunities for problem-solving and technological adaptation.

In terms of assessment, the utilization of direct questioning and interactive dialogue proved to be a robust mechanism for evaluating participant understanding. The majority of students were able to articulate the fundamental functions of Google Workspace, indicating that straightforward evaluation methods can effectively gauge baseline competency following practical training. This observation aligns with findings from digital literacy programs in Desa Seraya Marannu, where evaluation frameworks based on observation and informal interviews successfully detected skill enhancements post-intervention (Maulana El-Haq & Muizu, 2025b). Such formative assessment strategies offer immediate feedback loops, allowing facilitators to address misconceptions in real-time and ensuring that learning objectives are met without the need for complex testing infrastructure.

Consequently, the Google Workspace training at SMK Negeri 50 Jakarta represents a strategic imperative for strengthening digital literacy within the vocational education sector. Beyond cultivating technical skills, the initiative establishes a foundation for sustainable

technology integration into daily pedagogical practices. However, the long-term viability of such programs is contingent upon continuous teacher mentoring and robust infrastructural support. To ensure that digital literacy becomes a core competency for vocational graduates, it is essential to fortify collaborations between secondary schools, higher education institutions, and other educational stakeholders. By fostering a multi-sectoral partnership, the educational ecosystem can provide the necessary resources and guidance to transform isolated training events into enduring institutional capabilities.

Conclusion

The community engagement initiative, comprising a seminar and practical training on Google Workspace utilization at SMK Negeri 50 Jakarta, successfully augmented students' comprehension of digital technology integration within educational settings. This intervention served as a critical mechanism for bridging the gap between theoretical knowledge and practical application, specifically targeting the enhancement of digital literacy among vocational students. By focusing on a structured learning environment, the program effectively facilitated a deeper understanding of how digital tools can be leveraged to optimize academic processes. The overall outcome indicates a positive shift in student readiness to engage with technology-mediated learning environments, establishing a foundational competency necessary for modern educational participation.

Through a dual-phase pedagogical approach combining theoretical instruction with hands-on workshops, participants acquired proficiency in the fundamental functions of key applications, including Google Docs, Forms, Classroom, and Drive. This experiential learning model allowed students to move beyond passive consumption of information to active manipulation of digital tools, thereby reinforcing skill retention. Consequently, learners began to recognize the intrinsic value of these platforms in fostering collaboration and enhancing learning efficiency. The practical exposure ensured that students not only understood the technical operations but also appreciated the strategic advantages of cloud-based tools in managing academic tasks and facilitating peer-to-peer interaction.

Assessment conducted via interactive question-and-answer sessions revealed that the majority of participants could accurately articulate the functions of the features they had practiced, signaling effective knowledge transfer. This finding underscores the viability of utilizing straightforward evaluation metrics to gauge competency levels following practical training interventions. From a strategic perspective, the program demonstrates that practice-based training coupled with simple assessment mechanisms constitutes an effective framework for strengthening digital literacy among vocational high school students. The success of this evaluative approach suggests that complex testing instruments are not always necessary to validate skill acquisition when direct application is observed and verified through dialogue.

Although challenges persist regarding infrastructural limitations and inconsistent internet access, the initiative has established a robust foundation for the sustainable utilization of Google Workspace within the school environment. Future success and continuity, however, are contingent upon sustained support from educators and educational institutions to maintain momentum. It is imperative that digital literacy evolves from being perceived as an auxiliary skill to becoming an integral component of the teaching and learning process in vocational schools. Strengthening the collaboration between technical training and institutional policy will ensure that digital competencies are deeply embedded in the curriculum, thereby preparing graduates for the demands of a digitally driven workforce.

Acknowledgements

The authors extend their sincere gratitude to SMK Negeri 50 Jakarta, particularly the school principal, educators, and students, whose active participation and commitment were instrumental to the successful implementation of this training initiative. Their openness to

engagement and willingness to embrace digital innovation significantly contributed to the program's outcomes and provided valuable insights for future community engagement endeavors.

Appreciation is also respectfully conveyed to Universitas Negeri Jakarta for their institutional support and logistical facilitation, which enabled the effective execution of this community service program. The university's commitment to fostering partnerships between higher education and vocational institutions has proven essential in bridging academic expertise with practical field applications, thereby enhancing the relevance and impact of the intervention.

The authors further acknowledge the dedicated contributions of the implementation team, as well as all individuals who provided direct or indirect assistance in the development of training materials, the facilitation of hands-on sessions, and the comprehensive evaluation of program activities. Their collaborative efforts and professional expertise were pivotal in ensuring the methodological rigor and practical applicability of the initiative.

Figure 3. Universitas Negeri Jakarta and SMK Negeri 50 Jakarta: Institutional Collaboration in Community Engagement

Source: Author's Work, 2026.

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