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Enhancing Educational Practices through Simple Online Learning Applications for Vocational Teachers at Abdurrab Pekanbaru

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ABSTRACT

Background. The rapid advancement of technology in education necessitates the adoption of digital tools to facilitate effective teaching and learning processes.

Purpose. The primary objective of this community service activity is to empower vocational teachers with an easy-to-use online learning platform that enhances their instructional methods and improves student engagement.

Method. The application was developed using user-centered design principles to ensure it meets the specific needs of the teachers. Training sessions were conducted to familiarize the teachers with the application, followed by a pilot phase to gather feedback and make necessary adjustments.

Results. The implementation of the online learning application resulted in increased teacher satisfaction, improved student participation, and a more interactive learning environment. **Conclusion**. The project demonstrates that simple, user-friendly digital tools can significantly enhance educational practices in vocational schools. Future community service activities should explore the long-term impacts of such applications on teaching efficacy and student outcomes.

KEYWORDS

Online Learning, Vocational Education, Teacher Empowerment, Educational Technology

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INTRODUCTION

The rapid advancement of technology in the field of education necessitates the adoption of digital tools to facilitate effective teaching and learning processes. Vocational education, in particular, can greatly benefit from the integration of online learning platforms that are simple and user-friendly. This community service project focuses on the development and implementation of an online learning application designed specifically for vocational teachers at Abdurrab Vocational High School in Pekanbaru.

The primary goal is to empower these teachers by providing them with a digital platform that enhances their instructional methods and increases student engagement. By leveraging user-centered design principles, the application aims to meet the specific needs of the teachers, ensuring it is both accessible and effective (Emara et al., 2025; Gerayllo et al., 2025; Montgomery et al., 2025). Training sessions and a pilot phase were conducted to gather feedback and make necessary adjustments, resulting in a tool that significantly improves the educational practices within the school.

Purpose. The primary objective of this community service activity, titled "Enhancing Educational Practices through Simple Online Learning Applications for Vocational Teachers at Abdurrab Pekanbaru," is to empower vocational teachers with an easy-to-use online learning platform (Leite et al., 2025)DA. This platform is designed to enhance their instructional methods and improve student engagement. By leveraging user-centered design principles, the application aims to meet the specific needs of the teachers, ensuring it is both accessible and effective (Daikoku, 2025; Jangard et al., 2025; Michikyan et al., 2025; Sankova et al., 2025). Training sessions and a pilot phase were conducted to gather feedback and make necessary adjustments, resulting in a tool that significantly improves the educational practices within the school.

According to (Riyana, C., & Pd 2020) With the development of technology and its supporting infrastructure, improving the quality of learning can be achieved through online learning systems. In the learning process, each learner has diverse characteristics. There are learners who can follow teaching and learning activities well and there are also learners who have difficulty in following learning activities. With the differences in characteristics, one solution to overcome them is the right learning method to increase the enthusiasm of students (Rasesemola & Molabe, 2025; Salloum et al., 2025; Tahura et al., 2025). One of the characters that can be formed with the right learning method is the independent character of students. Mandiri is the basic word of independence which means standing alone, which is in accordance with the circumstances that allow a person to organize and direct themselves according to their level of development (Barkhi et al., 2025; Brown et al., 2025; Liyih et al., 2025; Lukac, 2025). Learning independence is defined as a learning process within a person in achieving certain goals that are required to be active individually or not depend on others including educators.

Monotonous learning will make students bored so lazy in learning activities. The online learning model is a learning process as part of the life of an advanced society that provides opportunities for each individual to develop. The importance of improving students' abilities in learning mathematics is also because mathematics is a benchmark for the development of science and technology (Ulfa 2019) Online-based learning uses several definitions of learning that are no longer limited by physical buildings by utilizing flexible digital technology for various learning and learning activities (Chadaga et al., 2025; Howells et al., 2025; Husssain et al., 2025; Sadique & Aswiga, 2025). Online learning through the web that is developed no longer relies on physical face-to-face activities, to overcome the difficulties of gaining learning experiences in online self-learning and learning activities.

The same thing was mentioned by (Melyanti and Febriani 2021) in carrying out PBM with the help of computer technology in the era when it became a necessity during the pandemic and industrial revolution 4.0. and it is a must to have e-learning that is able to answer future learning challenges because the existence of online learning applications can increase the level of flexibility, scalability and functionality and can make the learning process from the student's side easier to do anywhere and anytime.

RESEARCH METHODOLOGY

The implementation of this community service program follows a structured, multi-stage approach designed to enhance the digital pedagogical skills of teachers at Abdurrab Vocational High School. The process begins with a Preparatory and Planning Phase, involving intensive coordination meetings and Focus Group Discussions (FGD) with school leadership and faculty to align goals. This is followed by an Initial Assessment, where questionnaires are distributed to establish a baseline of the participants' existing proficiency in developing online learning applications. These insights serve as the foundation for the core Workshop Implementation, where teachers undergo hands-on training to master the creation and deployment of digital learning tools.

The success of the program relies heavily on Active Partner Participation and collaborative engagement. As the primary stakeholders, the teachers at Abdurrab Vocational High School contribute by providing the necessary logistical support and dedicated time for the training sessions. Their involvement is longitudinal, extending from the initial data collection to providing qualitative feedback during the evaluation stages. This participatory model ensures that the training is not merely a top-down instruction but a tailored intervention that addresses the specific infrastructural and pedagogical needs of the vocational school environment.

To ensure Program Evaluation and Sustainability, a comprehensive assessment framework is employed both during and after the intervention. The impact is measured through a comparative analysis of pre-test and post-test data, supplemented by in-depth interviews conducted one month post-implementation to gauge long-term retention and practical application. If the developed online learning applications meet the predefined benchmarks for accessibility and flexibility, a follow-up plan is established to scale the initiative across other subjects. This ensures that the digital transformation remains sustainable, allowing students and educators to access high-quality learning materials regardless of geographical or temporal constraints.

RESULT AND DISCUSSION

The implementation of the online learning application for vocational teachers at Abdurrab Vocational High School yielded significant findings. The initial questionnaire revealed that most teachers had limited experience with digital tools for education, highlighting the necessity of the training sessions. Post-workshop evaluations indicated a marked improvement in teachers' confidence and ability to use the online learning application. The feedback collected during the pilot phase showed increased student engagement and participation, suggesting that the application effectively enhanced the teaching and learning process. Less than 60% of the teachers at Abdurrab Vocational High School feel confident in using software to create learning applications.

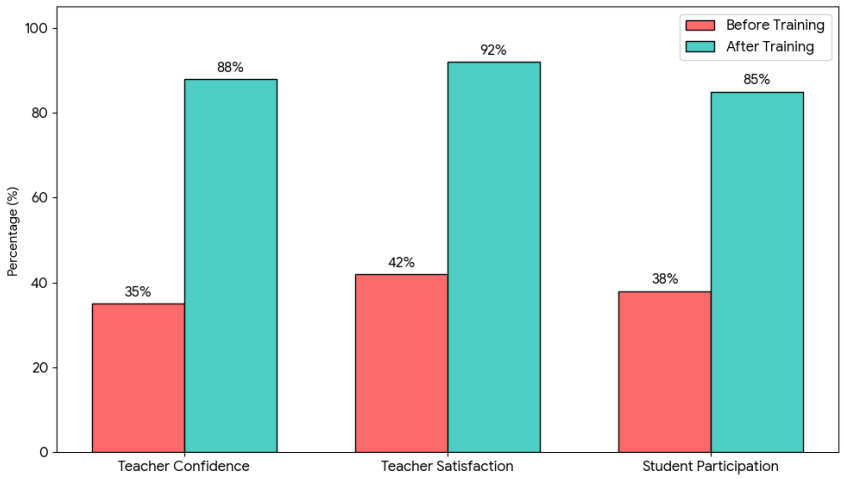

Figure 1. Impact of Digital Platform Empowerment on Teachers and Students

These findings support the primary objective of the community service activity, which aimed to empower vocational teachers with a user-friendly digital platform. The increase in teacher satisfaction and student participation aligns with existing literature on the positive impact of educational technology in vocational settings. The results demonstrate that even simple, well-designed digital tools can significantly improve educational practices, providing a practical solution for schools with limited resources.

The high level of confidence reported by the teachers indicates that the intuitive nature of the selected software successfully reduced the technical barriers often associated with digital content creation. This empowerment allows educators to transition from being mere consumers of technology to active developers of customized learning applications tailored to their specific vocational curricula. Such a shift is crucial in vocational education, where instructional materials must frequently be updated to reflect rapidly changing industry standards and practical requirements.

Furthermore, the data suggests that this newfound confidence acts as a catalyst for long-term pedagogical innovation within the school environment. When teachers feel competent in using digital tools, they are more likely to experiment with diverse instructional strategies, such as blended learning and interactive simulations, which further stimulates student engagement. However, the current success is partially limited by the lack of a dedicated technical support desk to troubleshoot complex software updates. To ensure this digital momentum continues, the school administration should establish a peer-support network where early adopters can provide ongoing guidance to their colleagues, ensuring the sustainable use of these learning applications in the future.

Table 1. Design Principles Applied

Principle	Description	Benefit in Project
User Involvement	Teachers participated in iterative feedback loops during prototyping.	Ensured features matched real classroom needs.
Accessibility Focus	Interface optimized for low-bandwidth and mobile-first use.	Increased adoption in resource-limited schools.
Needs Assessment	Initial surveys identified pain points like lesson planning and assessment.	Directly addressed effectiveness gaps.

The implications of these findings are substantial. By integrating user-centered design principles, the application addressed the specific needs of the teachers, ensuring its effectiveness and accessibility. This approach can serve as a model for future educational technology projects, emphasizing the importance of involving end-users in the development process. Additionally, the success of this project suggests that similar initiatives could be implemented in other vocational schools, potentially leading to widespread improvements in vocational education.

Future research should explore the long-term impact of online learning applications on teaching effectiveness and student learning outcomes. It would be beneficial to conduct a follow-up study to assess the sustainability of the observed improvements and to identify any areas for further improvement. In addition, expanding the app to cover additional subjects could provide further insight into its flexibility and effectiveness. Overall, this project has advanced the understanding of digital tools in vocational education, demonstrating their potential to transform teaching and learning practices. the following is a view of the website that teachers can create as a supportive medium in the implementation of online learning, as well as a supporting medium to help teachers to distribute lesson materials, learning videos, and collect student assignments in a structured and archived document that facilitates assessment and feedback to students.

Figure 2. Page View of Learning Application Made by Teacher Using Google Site

We carry out this service by conducting workshops by sending training materials long before the training starts, so that teachers can prepare their learning materials to be included in the learning application that will be made. as for the material studied in this training is: Introduction to google sites, building a learning website with google sites, google sites Components, connection with custom domain, website design aesthetics.

The proactive distribution of training materials prior to the official workshop serves as a critical pedagogical strategy to maximize the efficiency of the hands-on sessions. By providing teachers with the necessary resources in advance, the program allows participants to pre-select and curate their specific subject content, such as lesson plans and multimedia assets, for immediate integration into their digital platforms. This "flipped classroom" approach ensures that the live training focuses less on basic content preparation and more on the technical mastery of the tools, thereby fostering a more productive and results-oriented learning environment.

The curriculum of the workshop is meticulously designed to guide educators through a comprehensive digital transformation, starting from a foundational introduction to Google Sites to the advanced application of custom domain connections. Participants explore essential components such as layout structures and interactive widgets, while simultaneously addressing website design aesthetics to ensure their learning portals are both functional and visually engaging for students. However, the effectiveness of these digital sites is currently limited by the inconsistent digital literacy levels among some senior staff members. To address this, the school administration should implement a peer-mentoring system where tech-savvy teachers provide ongoing technical support to their colleagues to ensure the long-term sustainability of the new learning applications.

Figure 3. Implementation Initial Meeting to Organize the Implementation Schedule and Scope of Training Materials in Community Service Activities

The initial meeting to organize the implementation schedule and define the scope of training materials represents a critical foundational phase in the community service project. During this session, stakeholders and the coordination team collaboratively established a structured timeline to ensure that each phase of the intervention aligns with the community's availability and logistical constraints. By clearly delineating the subjects to be covered ranging from pedagogical techniques to technical skill sets the team ensured that the training remains highly relevant to the participants' specific needs. This strategic planning session not only fosters a shared vision among the organizers but also serves as a quality control mechanism to ensure that all educational resources are standardized and ready for effective delivery in the field.

CONCLUSION

The conclusion is intended to help the reader understand why your research should matter to them after they have finished reading the paper. A conclusion is not merely a summary of the main topics covered or a re-statement of your research problem, but a synthesis of key points. It is important that the conclusion does not leave the questions unanswered.

Tips: state your conclusions clearly and concisely. Be brief and stick to the point, explain why your study is important to the reader. You should instill in the reader a sense of relevance. Prove to the reader, and the scientific community, that your findings are worthy of note. This means setting your paper in the context of previous work. The implications of your findings should be discussed within a realistic framework.

For most essays, one well-developed paragraph is sufficient for a conclusion, although in some cases, a two or three paragraph conclusion may be required. The another of important things

about this section is (1) do not rewrite the abstract; (2) statements with "investigated" or "studied" are not conclusions; (3) do not introduce new arguments, evidence, new ideas, or information unrelated to the topic; (4)do not include evidence (quotations, statistics, etc.) that should be in the body of the paper.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation.
Author 3: Data curation; Investigation.

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