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Community Service in Improving Science Learning through the Development and Implementation of Canva Interactive Digital Teaching Materials at MI Terpadu Berkah Palangka Raya

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Abstract
The limited use of interactive teaching materials and learning technologies in the science subject at MI Terpadu Berkah Palangka Raya has led to low student motivation and suboptimal learning outcomes, primarily due to the reliance on conventional methods and printed worksheets. This community service activity aims to address these challenges by developing and assisting in the use of interactive digital teaching materials based on Canva. The implementation method starts with needs mapping, mentoring on creating digital books, and finally implementing and evaluating the use of the media in grade IV classrooms. The results showed a significant improvement in student motivation and understanding of science materials, as indicated by an average field test score of 85.29% (very feasible category). Additionally, teachers provided positive feedback with an evaluation score of 72.05%. The activity positively impacted the digital learning process at MI Terpadu Berkah Palangka Raya and enhanced teachers' capacity to develop independent technology-based teaching media.

Keywords: *community service, digital books, IPAS, Canva, MI Palangka Raya*

INTRODUCTION

The development of information and communication technology (ICT) has brought about a major transformation in the world of education, including at the elementary education level. The use of technology is an important part of 21st-century learning that requires students not only to be recipients of information but also to be active participants in a collaborative, creative, and contextual learning process (Yulia, 2020). One of the rapidly developing media is digital-based teaching materials, which are considered capable of providing a more interactive, interesting, and flexible learning experience. Unfortunately, this innovation has not even been applied in all educational units, especially in elementary schools or Islamic elementary schools (MI) located in remote areas.

MI Terpadu Berkah Palangka Raya School is one of the elementary education institutions facing this challenge. Based on the results of initial observations, the learning process the learning of Natural and Social Sciences (IPAS) in this madrasah is still dominated by conventional approaches and the use of Student Worksheets (LKS) as the main media. Teachers rely on textbooks and oral explanations in delivering material, without the support of interactive visual or digital media that can stimulate students' interest and understanding optimally. This condition causes low active student participation, weak learning motivation, and learning outcomes that do not meet the Minimum Completion Criteria (KKM) (Sari, 2019).

The IPAS material on the theme "Changes in the Form of Objects" is one of the materials that has abstract characteristics and requires visualization assistance to be properly understood by students. Unfortunately, the limitations of teaching media make it difficult for students to understand the concepts of physical changes in substances, such as melting, freezing, or evaporating. Meanwhile, the results of the pretest given to students showed that the majority of grade IV students were not able to answer questions related to the material correctly, indicating

a large gap in understanding. Teachers also do not have special skills in developing digital teaching materials that are in accordance with the curriculum and learning characteristics of elementary school-aged children (Syabrina & Sulistyowati, 2020).

On the other hand, there is great potential that can be developed. Most students and teachers at MI Terpadu Berkah already have access to Android-based devices and are quite familiar with applications such as Canva and Wordwall. However, this potential has not been managed systematically to support the learning process. Therefore, it is necessary to strengthen the capacity of the school community in developing and utilizing digital teaching materials independently and sustainably. One of the approaches used in this activity is the ABCD (Asset-Based Community Development) approach, which emphasizes the identification of local assets and strengthening community potential as a solution to the educational problems faced (Pratama, 2022).

This community service activity was carried out with the aim of providing real solutions to the problem of low effectiveness of science learning through the development of interactive digital book-based teaching materials. The activity focused on mentoring grade IV teachers in designing, developing, and implementing Canva-based teaching materials equipped with evaluations using Wordwall. The implementation method was carried out through several stages: needs analysis, technical mentoring, media production assistance, field trials with students, and evaluation of the impact of using teaching materials on student learning outcomes.

This activity has a high urgency because it is able to bridge the gap between the technological potential owned by the school community and the limited capacity of human resources in creating learning innovations. In addition, this activity also has a direct impact on improving the quality of learning and empowering teachers to become agents of change in digital learning at the elementary level. Support from the school and the enthusiasm of the participants are important social capital in ensuring the sustainability of this program independently (Rahman & Setiawan, 2023).

METHOD

The implementation of this community service activity employed a **mentoring approach** focusing on direct assistance and collaboration between university lecturers and school teachers. The aim was to improve the quality of science learning at MI Terpadu Berkah Palangka Raya by introducing and guiding the use of interactive digital teaching materials using the Canva platform.

The activity was conducted in **March 2025**, involving **four lecturers** from the Faculty of Tarbiyah and Teacher Mentoring (FTIK), IAIN Palangka Raya: **M. Syabrina, M.Pd**, **Istiyati Mahmudah, M.Pd**, **Rahmad, M.Pd**, and **Zaitun Qamariah, M.Pd**, who served as mentors and expert validators. The digital teaching materials were developed by students under the guidance of these mentors.

Table: Implementation Schedule of Community Service Activities (March 2025)

Date	Activity	Description	Participants
March, 4, 2025	Coordination Meeting	Internal coordination between lecturers and student team	Lecturers and student assistants
March, 6, 2025	Initial School Visit & Problem Identification	Observation and short interviews with teachers and principal to identify challenges	Community service team, school principal, teachers
March, 8, 2025	Socialization Session	Presentation of program objectives and outline to all grade IV teachers	Lecturers, teachers
March, 11, 2025	Mentoring Session 1: Canva Introduction & Digital Design Basics	Mentoring on basic Canva usage and digital layout design	Lecturers (mentors), teachers, students (developers)

March, 13, 2025	Mentoring Session 2: Content Creation and Integration with Multimedia	Advanced tutorial on inserting videos, animations, QR codes, etc.	Lecturers, student team, teachers
March, 15, 2025	Product Draft Validation	Review and feedback from expert validators on the digital books created	M. Syabrina, Istiyati Mahmudah, Rahmad, Zaitun Qamariah
March, 18, 2025	Implementation in Class (Trial Use of Digital Books in Grade IV)	Real-time classroom application of digital books and online quizzes	Teachers, students, lecturers (observers)
March, 20, 2025	Evaluation & Reflection	Post-test, student and teacher feedback session, and impact assessment	Teachers, students, lecturers
March, 8 2025	Finalization & Handover of Digital Teaching Materials	Handover of final product and recommendations for future use	Lecturers, teachers

The implementation stages included:

1. **Preliminary Socialization**
   The first step was to socialize the objectives and scope of the activity to the school principal and teaching staff. This included an introduction to the concept of digital learning, especially the use of Canva for creating interactive teaching materials. The socialization aimed to build understanding, support, and enthusiasm for the integration of digital media in science teaching.
2. **Mentoring**
   After socialization, the service team conducted mentoring sessions with the science teachers of Grade IV. This mentoring was practical in nature, focusing on how to design digital books using Canva and how to create interactive quizzes using Wordwall. Teachers were provided with templates, tutorials, and guided through the step-by-step process of developing content relevant to the topic "Changes in the Form of Objects." The mentoring emphasized multimedia integration, including images, links, QR codes, and video components to increase learning motivation and comprehension.
3. **Assistance in Media Production**
   Following the mentoring, the teachers continued developing their digital books with close assistance from the lecturers. This phase ensured that the media being produced met both pedagogical and technical standards. Regular feedback was given by the mentors to help teachers revise and finalize their digital teaching materials.
4. **Field Testing and Implementation**
   The completed digital materials were then tested in actual classroom teaching. Students accessed the interactive books using their Android phones, and learning was evaluated using online quizzes. The lecturers observed classroom dynamics and student responses to assess the usability and impact of the media.
5. **Evaluation and Follow-Up Planning**
   The final stage involved evaluating the effectiveness of the activity. This was done through pre-test and post-test comparisons, as well as teacher and student feedback. The evaluation also included a discussion session with the school to explore the sustainability of digital learning practices and plans for developing similar media for other subjects.

This mentoring-based and school-centered approach proved effective in increasing teacher competence in digital material development and significantly improved student motivation and learning outcomes. It also fostered stronger collaboration between the university and the school in addressing real educational challenges through practical innovation.

RESULTS AND DISCUSSION

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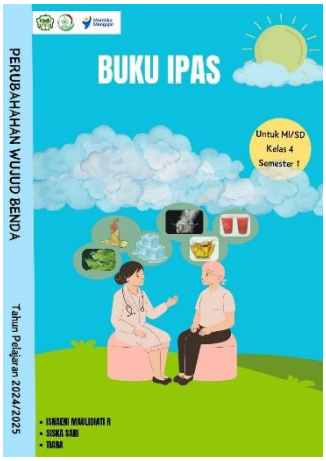
Picture. 1 & 2 Implementation

Picture. 3 Photo With Teacher

Picture. 4 Product Delivery

Picture 5. Product



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The implementation of this activity has proven effective in building active teacher involvement as agents of change. Through participatory mentoring, teachers are not only beneficiaries but also co-creators of teaching materials, which strengthens the sense of ownership of the results of the activity. This activity not only improves technical skills, but also builds a culture of innovation in the school environment.

However, the effectiveness of the activity will be more optimal if followed by long-term monitoring and further development. For example, further mentoring in making teaching media for other subjects, as well as integration into KKG (Teacher Working Group) activities, periodically. In terms of implementation, the learning by doing approach in mentoring has proven to be very helpful. The use of user-friendly media such as Canva and Wordwall allows teachers to access technology even with limited experience. The implications of this activity show that digital transformation at the elementary madrasah level is very possible if supported by mentoring that is appropriate to the needs, as well as a collaborative approach between lecturers, students, and the school community. The community service activities carried out at MI Terpadu Berkah Palangka Raya aim to increase the effectiveness of science learning through the development and implementation of digital teaching materials based on Canva and Wordwall. This activity is carried out by actively involving teachers and students through a participatory approach based on local potential (ABCD). The results of the activity show a significant impact, both quantitatively and qualitatively, on increasing teacher capacity, student involvement, and overall learning outcomes.

1. Improving Teacher Skills in Digital Media Development

   Before the activity began, fourth-grade teachers at MI Terpadu Berkah Palangka Raya had never used a design platform like Canva to create teaching materials, and most of them were still using conventional learning methods that relied on textbooks and LKS. Through the mentoring provided, teachers managed to master the basics of using Canva, starting from compiling the layout of teaching materials, inserting images and illustrations, adding interactive elements such as QR Codes that are connected to learning videos, to saving and sharing teaching materials in a format that can be accessed by students (PDF/Android APK).

   This improvement can be seen from the results of the evaluation carried out during and after the mentoring. Teachers were able to compile one unit of digital teaching materials themselves with relevant, contextual, and curriculum-compliant content. In addition, teachers also managed to integrate Wordwall as an evaluation medium, which includes multiple-choice quizzes, matching terms, to interactive crossword puzzles that are directly accessed by students via links or QR codes.

2. Expert Assessment of Media Product Quality

   As part of the quality validation, the digital teaching material products developed by teachers were assessed by material experts and design experts. The results of the material expert validation showed a feasibility score of 92.85%, which means very good. The material experts assessed that the content of the teaching material was in accordance with the curriculum, the language was easy for fourth grade students to understand, and the presentation was interesting. The teacher followed up on suggestions for improvement related to the addition of local contextual examples during the revision process.

   Meanwhile, the validation from the design expert obtained a score of 90.74%, also in the very good category. The assessment points include consistency of font type and size, selection of child-friendly colors, and readability on the gadget screen. Recommendations related to uniformity of visual design and navigation between pages were successfully implemented in the final version of the teaching material.

3. Teacher Response and Classroom Implementation

   Teachers as the main implementers of learning gave a positive assessment of the digital teaching materials developed. Based on the teacher satisfaction questionnaire, a score of 72.05% was obtained, indicating that the media greatly assisted teachers in delivering science and science material, especially on the theme of "Changes in the Form of Objects." Teachers said that the use of digital media made the learning process more efficient, because

there was no need to print materials and evaluations. In addition, teachers stated that students looked more focused and enthusiastic in following the lesson.

At the implementation stage, digital teaching materials were used in two learning meetings. The teacher projected the digital book display via an LCD projector, while students also accessed it via their respective devices. At the end of the learning, the teacher gave evaluation questions via Wordwall which were accessed by students using a link via an Android phone.

4. Improving Students' Understanding and Motivation to Learn

   A field trial conducted on 32 fourth grade students showed a significant increase in learning outcomes. Based on a comparison of pretest and posttest scores, the average student score increased from low to high. The results of the analysis showed that the effectiveness score for using digital teaching materials reached 85.29%, indicating that this media is very suitable for use in supporting the learning process.

   In addition to scores, another indicator that reflects success is changes in students' attitudes and learning behavior. During implementation, students appeared more enthusiastic, asked questions frequently, and actively tried interactive features in the media. Students also showed a higher curiosity, especially when accessing simple science experiment videos integrated into digital teaching materials via QR Code.

5. Field Challenges and Solutions

   This PKM activity also faces a number of challenges. Among them are the limited time for teachers to participate in full mentoring because they still have to manage the class, as well as limited internet access when using Wordwall. To overcome this, the service team provides independent video tutorials that can be accessed outside of mentoring sessions and teaches offline deployment techniques for digital teaching materials so that they can still be used without an internet connection.

   Another challenge is the level of students' ability to use digital devices which is still diverse. However, with direct assistance and habituation, students quickly adapt. Support from the madrasah, especially the principal who supports the digitalization of learning program, is also the key to the success of the sustainability of this activity.

6. Long-Term Impact and Sustainability Plan

   This activity not only produced digital teaching materials and improved student learning outcomes but also created broad social and pedagogical impacts. Teachers became more confident in developing independent learning media, even after the program was completed. The principal of the madrasah expressed his commitment to encourage other teachers to replicate it for other subjects, and planned to integrate technology mentoring into the madrasah's annual work program.

   As a follow-up, the service team submitted a digital teaching material template that could be modified for other learning themes and opened an online consultation room so that teachers could continue to receive technical support after the activity. Thus, this activity is expected to be the starting point for the birth of independent and sustainable digital learning innovations in the MI Terpadu Berkah Palangka Raya environment.

CONCLUSION

This community service program aimed to improve the quality of science learning at MI Terpadu Berkah Palangka Raya by mentoring teachers and assisting students in developing and utilising digital teaching materials. The activities were conducted in March 2025 through school visits, direct mentoring sessions, classroom trials, and a final evaluation.

The results demonstrated a significant positive impact. Students showed increased enthusiasm and better understanding of the topic "Changes in the Form of Objects" after using the interactive digital books designed with Canva. Field testing showed a high level of feasibility (85.29%), and teachers responded positively (72.05%) to the usability of the materials in the classroom. The collaborative model—where students developed the content and lecturers served

as mentors and validators—proved effective in fostering both digital literacy and teaching material innovation in the school environment.

1. **For Schools**: It is recommended that MI Terpadu Berkah continues to integrate digital media in teaching, especially using platforms like Canva and Wordwall, to enrich student learning experiences.
2. **For Teachers**: Teachers should be encouraged to continuously develop their skills in creating multimedia-based instructional materials and participate in future mentoring programs.
3. **For Future Programs**: Similar community service initiatives should be expanded to other subjects and schools, using this mentoring-based model that actively involves students, teachers, and lecturers in a participatory learning ecosystem.
4. **For Students (Developers)**: Students involved in the development process gained practical experience in instructional design; such involvement is recommended to be continued in future community-based academic projects.

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