

Transforming Conventional Teaching Materials into Digital Visual Media: Graphic Design Training Program for MTsN Teachers

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Abstract. This Community Service Program (PKM) aimed to enhance teachers' competencies in basic graphic design to support the development of digital learning materials at MTsN Labor Garegeh, Bukittinggi, West Sumatra. The program was motivated by the limited use of visual digital media in classroom instruction and the lack of teachers' confidence in utilizing graphic design applications. Preliminary needs analysis indicated that more than 70% of participating teachers had never received formal training in instructional graphic design and experienced difficulties integrating visual digital media into student-centered learning activities. The activities were conducted through several stages, including needs analysis, training workshops, hands-on practice, mentoring, and evaluation. Participants were introduced to fundamental visual design principles and guided in using graphic design tools to create interactive teaching materials. The results showed a significant improvement in teachers' understanding of graphic design concepts and their ability to produce creative digital learning resources. Teachers were able to develop visually engaging teaching materials that are more suitable for student-centered learning. In addition, participants demonstrated increased motivation to integrate technology into their instructional practices. This program contributes to strengthening teachers' professional capacity and fostering innovation in learning. It is expected that the outcomes of this PKM will support sustainable improvements in teaching quality and encourage the wider adoption of digital media in schools.

Keywords: Graphic design training, digital learning materials, teacher professional development, community service program, educational innovation

1. Introduction

The rapid development of digital technology has brought significant changes to the education sector, requiring teachers to continuously adapt their teaching practices. One important aspect of this transformation is the ability to design attractive, interactive, and meaningful learning materials. Visual media supported by graphic design plays a crucial role in enhancing students' understanding, increasing learning motivation, and creating engaging learning experiences [1][2]. From the perspective of multimedia learning theory, the integration of visual elements supports dual-channel cognitive processing [1] that enables students to organize information more effectively and improves conceptual understanding. However, in reality, many teachers still have limited skills in developing digital learning materials independently, particularly those involving basic graphic design.

In line with the implementation of the Merdeka Curriculum, teachers are expected to be more creative and innovative in preparing student-centered learning resources. Learning materials are no longer limited to text-based content but should be visually enriched through the integration of digital technology [3]. Basic graphic design competence has therefore become an essential supporting skill for teachers [4] to produce communicative and contextual instructional media. This competency is closely aligned with the Technological Pedagogical Content Knowledge (TPACK) framework [5], which emphasizes the integration of technological knowledge with pedagogical strategies and subject content to create meaningful learning experiences. Without adequate mastery of these skills, classroom learning tends to remain conventional and less responsive to the diverse needs of today's learners [6].

MTsN Labor Garegeh, located in Bukittinggi City, West Sumatra, is one of the educational institutions actively striving to improve learning quality through the use of technology. Based on preliminary observations, needs assessment activities, and discussions with school stakeholders, it was found that most teachers still rely on conventional teaching materials such as printed modules and simple slide presentations. The use of digital visual media remains limited, mainly due to a lack of technical training in graphic design and low self-confidence among teachers in utilizing design applications for instructional purposes. The needs assessment results showed that most teachers still relied on text-dominated instructional materials and had limited experience in designing visual-based digital learning resources independently.

The main challenges faced by the partner institution include limited graphic design literacy, insufficient skills in creating visual learning media, and suboptimal integration of technology in the teaching process. These conditions result in less varied learning materials, as a consequence, students' opportunities to engage actively in visual-based learning activities become limited, which may affect their motivation and participation in classroom learning. Therefore, a systematic assistance program is needed to strengthen teachers' competencies in designing digital learning materials based on graphic design principles [7][8].

This Community Service Program (PKM) was designed as a contribution from higher education institutions to support the professional development of teachers through graphic design training. The program focuses not only on theoretical knowledge but also emphasizes hands-on practice and continuous mentoring, the implementation strategy also adopted adult learning principles that emphasize experiential learning, collaborative participation, and reflective practice as key elements of teacher professional development [9][10]. Through this approach, teachers are expected to be able to apply the acquired skills sustainably in their daily teaching activities.

Previous community service programs in teacher professional development have generally focused on general ICT literacy rather than structured training in pedagogically oriented graphic design for instructional purposes. As a result, teachers still experience difficulties in transforming conventional teaching materials into visually engaging learning resources suitable for student-centered learning environments.

The objectives of this PKM program are to enhance the basic graphic design competencies of teachers at MTsN Labor Garegeh, optimize the use of technology in preparing learning materials, and produce creative and interactive digital teaching resources. Specifically, the program aims to equip teachers with practical skills in using graphic design applications, improve their understanding of visual design principles for learning, and foster a culture of innovation within the school environment [11][12].

Through the implementation of this PKM program, it is expected that both the teaching process and learning outcomes at MTsN Labor Garegeh Bukittinggi will improve. In addition to providing direct benefits in the form of increased teacher competence, this activity also strengthens collaboration between higher education institutions and schools in promoting adaptive learning practices in the digital era. Ultimately, graphic design training serves as a strategic step in supporting educational transformation and strengthening teacher capacity to meet the challenges of contemporary education [13][14].

The novelty of this community service program lies in the integration of structured graphic design training with mentoring-based assistance and product-oriented evaluation aligned with the TPACK framework to support sustainable teacher competency improvement.

2. Implementation Methods

This Community Service Program (PKM) was conducted at MTsN Labor Garegeh, Bukittinggi, West Sumatra, involving 25 teachers from various subject areas as participants representing different instructional backgrounds within the institution. A total of 25 teachers participated in the program. The implementation team consisted of lecturers from the Information and Computer Technology Education (PTIK) Program at UIN Bukittinggi, supported by five teaching assistants who were undergraduate students from the same program. The activities were carried out over two consecutive days in the form of intensive training and mentoring sessions.

The community service methods applied in this program included training, workshops, hands-on practice, mentoring, and evaluation [15]. These methods were selected to ensure that participants not only received theoretical knowledge but also developed practical skills through direct experience. The overall approach emphasized participatory learning, this participatory approach reflects adult learning principles that prioritize active involvement, practical experience, and collaborative interaction during professional training activities, where teachers were actively involved in every stage of the program.

The implementation process was organized into several systematic stages. The first stage was a needs analysis, conducted through preliminary observations and discussions with school representatives to identify teachers' initial competencies and challenges in developing digital learning materials [16]. The findings from this stage were used to design training content and learning activities tailored to participants' needs.

The second stage focused on the delivery of graphic design training through interactive lectures and workshop-based learning. Participants were introduced to fundamental visual design principles and guided in using graphic design applications to create digital teaching materials. This stage emphasized hands-on practice, allowing teachers to directly apply the concepts learned while being assisted by the lecturers and student assistants [17].

The third stage involved mentoring and evaluation [18]. During this phase, participants received individualized guidance and constructive feedback on their learning products. The evaluation strategy focused on product-based assessment to ensure that participants were able to apply graphic design principles in producing usable instructional media for classroom implementation. Evaluation was conducted through observation, assessment of the digital materials produced, and reflective discussions. The effectiveness of the program was measured based on improvements in participants' skills, engagement, and the quality of the teaching materials developed [9].

This integrated approach ensured that teachers gained both conceptual understanding and practical competence in graphic design. Moreover, the combination of training, workshops, mentoring, and evaluation supported sustainable professional development [4] and encouraged participants to continuously integrate digital media into their teaching practices [19].

The implementation stages of the community service program are illustrated in Figure 1 as a structured competency development model.

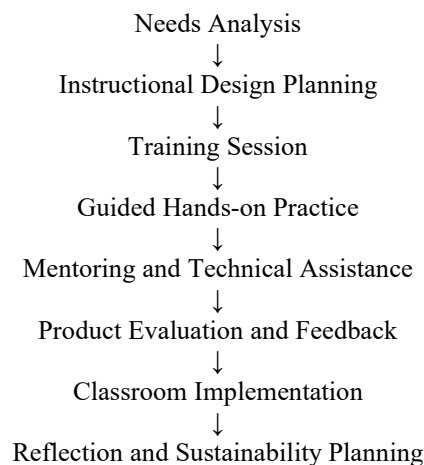


Figure 1. Implementation Model of the Community Service Program for Graphic Design Training in Instructional Media Development

3. Results and Discussion

The Community Service Program was attended by 25 teachers of MTsN Labor Garegeh, Bukittinggi, and implemented over two consecutive days through training, workshops, hands-on practice, mentoring, and evaluation. The activities focused on strengthening teachers' basic graphic design skills and their ability to develop digital learning materials. To measure the effectiveness of the program, participants' competencies were evaluated using pre-test and post-test assessments, supported by observation and product evaluation.

The quantitative results show a substantial improvement in teachers' competencies after participating in the program. As illustrated in Figure 2, the average pre-test score was 56, indicating limited initial understanding of graphic design principles and digital material development. After the completion of the training and mentoring sessions, the average post-test score increased to 84. This marked improvement demonstrates that the program effectively enhanced teachers' knowledge and practical skills [4] in creating visually engaging learning materials. This improvement indicates that structured training combined with mentoring assistance plays an important role in strengthening teachers' ability to integrate visual communication elements into instructional materials.

To provide a clearer overview of the assessment results, the summary of pre-test and post-test scores is presented in Table 1. The data in Table 1 confirm the positive impact of the program, with an average increase of 28 points between pre-test and post-test results. This improvement reflects participants' growing understanding of basic visual design principles and their ability to apply graphic design tools in developing digital learning materials.

In addition to quantitative gains, qualitative observations revealed positive changes in participants' attitudes toward technology integration. Teachers became more confident in using graphic design applications

and demonstrated increased creativity in designing instructional media. Most participants successfully produced digital learning materials that incorporated visual elements such as layouts, icons, typography, and images aligned with basic design principles. These products indicate that teachers were able to translate theoretical concepts into practical outputs suitable for classroom implementation.

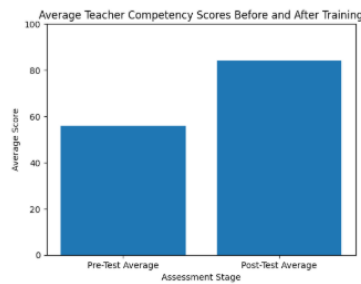


Figure2. Average Teacher Competency Scores Before and After Training

Table 1. Average Pre-Test and Post-Test Scores of Participants (n = 25)

Assessment Stage	Average Score
Pre-Test	56
Post-Test	84

The mentoring process played a significant role in supporting participants' learning. Continuous guidance from lecturers and student assistants enabled teachers to overcome technical challenges [18] and refine their designs. This finding supports previous studies suggesting that hands-on practice combined with mentoring is more effective than lecture-based training alone in developing professional competencies. This finding is consistent with the TPACK framework [5], which emphasizes the importance of integrating technological competence with pedagogical strategies to support effective instructional innovation. The participatory approach adopted in this program also encouraged collaboration and peer learning among teachers.

Furthermore, reflective discussions revealed that participants perceived the training as highly relevant to their instructional needs, particularly in supporting student-centered learning under the Merdeka Curriculum [2]. In line with multimedia learning theory, visually structured instructional materials help students process information more efficiently and improve their learning engagement. Teachers reported increased motivation to integrate digital media into their lessons and expressed willingness to continue developing their design skills independently [20][21].

Overall, the results demonstrate that graphic design training supported by workshops and mentoring can significantly enhance teachers' capacity to develop creative and interactive digital learning materials. The improvement in competency scores shown in Figure 2 and Table 1, together with the quality of learning products produced, confirms that this PKM program contributed meaningfully to teachers' professional development. These outcomes suggest that similar community service initiatives may be replicated in other schools to support sustainable digital transformation in education [22][12][23].



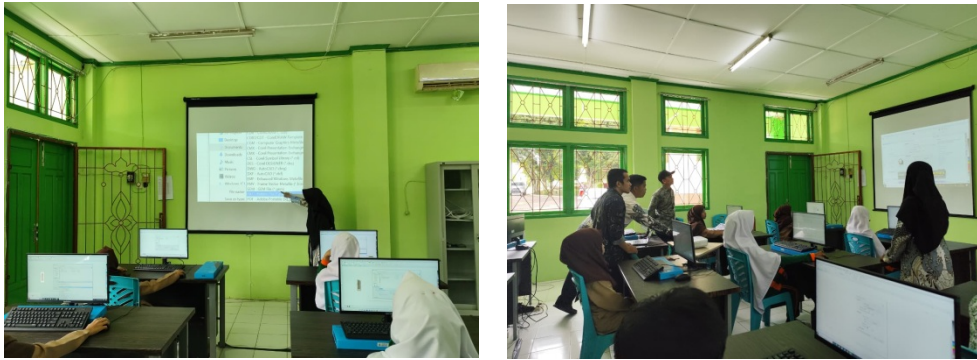


Figure 3. PKM activities of the PTIK UIN Bukittinggi Lecturer Team and 5 PTIK Students at MTsN Labor Garegeh Bukittinggi

4. Conclusions and Recommendations

This Community Service Program successfully enhanced the graphic design competencies of teachers at MTsN Labor Garegeh, Bukittinggi. Through a combination of training, workshops, hands-on practice, mentoring, and evaluation, participants demonstrated significant improvements in both theoretical understanding and practical skills. The increase in average competency scores from pre-test to post-test, along with the quality of digital learning materials produced, indicates that the program effectively supported teachers in developing creative and interactive instructional media.

Beyond technical skill development, the program also fostered positive attitudes toward the integration of digital technology in teaching. Teachers showed increased confidence, creativity, and motivation to apply graphic design principles in their daily instructional practices. The participatory approach and continuous mentoring played an important role in facilitating active engagement and sustainable learning outcomes.

The integration of structured training, mentoring assistance, and product-based evaluation represents an effective model for sustainable teacher professional development in graphic design-based instructional media development.

Based on these findings, it is recommended that similar training programs be implemented on a regular basis to strengthen teachers' digital competencies. Schools are encouraged to provide ongoing support and facilities to enable teachers to continue developing innovative learning materials. Future community service activities may expand the scope of training to include advanced multimedia development and online learning platforms, as well as involve a wider range of educational institutions. Such initiatives are expected to contribute to long-term improvements in teaching quality and support the digital transformation of education.

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