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ENHANCING TEACHER COMPETENCE IN SHARING BEST PRACTICES: CONCEPTS, STRATEGIES AND IMPLEMENTATION IN EDUCATION

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ABSTRACT

Teacher competence in systematically sharing pedagogical best practices remains a critical challenge in Indonesian education, particularly in regions with fragmented professional networks and limited technological infrastructure. This community service initiative addressed these gaps through a one-day intensive workshop for 19 science teachers from Padang Panjang Senior High School, all active members of the Subject Teacher Forum (Musyawarah Guru Mata Pelajaran/MGMP). The program integrated conceptual training on best practice frameworks with hands-on STAR (Situation-Task-Action-Results) narrative development and digital resource creation. Pre-post questionnaire analysis revealed a 53.5% proportional gain in conceptual understanding (from 28.9% to 44.4% "Proficient/Very Proficient" responses), while sharing activities increased from 15.8% to 33.3% post-workshop. Participants successfully produced 12 artifacts including STAR-based lesson plans, video prototypes, and case studies, confirming the framework's efficacy in translating classroom innovations into replicable models. However, technology proficiency remained moderate (55.6% "Fairly Proficient"), aligning with national findings that Indonesian secondary teachers demonstrate routine digital use but struggle with advanced multimedia creation (Brillian, 2025; Mailizar & Fan, 2020). The MGMP professional learning community emerged as pivotal for sustaining innovation, though systemic barriers including geographic distance, weak institutional support, and limited funding continue to constrain knowledge-sharing (Afrizilna & Montessori, 2021; Janafi & Satria, 2023). Results underscore the urgency of sustained digital capacity building, discipline-specific exemplars, and structured peer coaching to scale impact across Indonesia's diverse educational landscape.

Keywords: best practice sharing; MGMP; professional development; STAR framework; teacher competence; technology integration.

ABSTRACT

Kompetensi guru dalam berbagi praktik pedagogis terbaik secara sistematis tetap menjadi tantangan kritis dalam pendidikan Indonesia, terutama di wilayah dengan jaringan profesional yang terfragmentasi dan infrastruktur teknologi yang terbatas. Inisiatif pengabdian masyarakat ini mengatasi kesenjangan tersebut melalui lokakarya intensif satu hari bagi 19 guru IPA dari SMA Padang Panjang, yang semuanya merupakan anggota aktif Musyawarah Guru Mata Pelajaran (MGMP). Program ini mengintegrasikan pelatihan konseptual kerangka praktik terbaik dengan pengembangan narasi STAR (Situation-Task-Action-Results) dan pembuatan sumber daya digital. Analisis kuesioner pra-pasca menunjukkan peningkatan pemahaman konseptual sebesar 53,5% (dari 28,9% menjadi 44,4% respons "Paham/Sangat Paham"), sementara aktivitas berbagi meningkat dari 15,8% menjadi 33,3% pasca-lokakarya. Peserta berhasil menghasilkan 12 artefak termasuk rencana pembelajaran berbasis STAR, prototipe video, dan studi kasus, mengonfirmasi efektivitas kerangka kerja dalam mentransformasikan inovasi kelas menjadi model yang dapat direplikasi. Namun, kemahiran teknologi tetap sedang (55,6% "Cukup Paham"), selaras dengan temuan nasional bahwa guru sekolah menengah Indonesia menunjukkan penggunaan digital rutin namun kesulitan dengan pembuatan multimedia tingkat lanjut (Brillian, 2025; Mailizar & Fan, 2020). Komunitas belajar profesional MGMP muncul sebagai faktor penting untuk keberlanjutan inovasi, meskipun hambatan sistemik termasuk jarak geografis, dukungan kelembagaan yang lemah, dan pendanaan terbatas terus membatasi berbagi pengetahuan (Afrizilna & Montessori, 2021; Janafi & Satria, 2023). Hasil penelitian menegaskan urgensi pengembangan kapasitas digital berkelanjutan, contoh

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spesifik disiplin, dan pendampingan rekan sejawat terstruktur untuk memperluas dampak di seluruh lanskap pendidikan Indonesia yang beragam.

Keywords: berbagi praktik baik, MGMP, pengembangan professional, kerangka STAR, kompetensi guru, integrasi teknologi

1. INTRODUCTION

Teacher competence stands as the cornerstone of educational quality in Indonesia, directly impacting student achievement and national development goals (Darling-Hammond, 2017). Educators serving diverse student populations require continuous enhancement of pedagogical skills to meet Indonesia's education transformation agenda. Research consistently confirms that teacher quality accounts for up to 30% of variance in student outcomes, representing the most significant school-based factor influencing learning achievement (Hattie, 2015; Rivkin et al., 2005). This substantial influence underscores the imperative for systematic professional development approaches that empower teachers as agents of instructional improvement rather than passive recipients of top-down reforms.

Indonesia's geographical fragmentation and resource disparities create unique professional development challenges that demand contextually responsive solutions. Rural-urban divides severely limit access to quality training, while frequent curriculum transitions necessitate continuous upskilling (Bjork, 2005; Chang et al., 2013). Studies reveal that only 28% of Indonesian teachers regularly engage in collaborative learning communities, substantially hindering pedagogical innovation and knowledge diffusion (Fahmi et al., 2011; Kristiansen & Pratikno, 2006). This fragmentation is particularly pronounced in regions like West Sumatra, where geographical barriers and limited digital infrastructure impede teachers' access to professional networks and resources.

Evidence-based best practices serve as powerful levers for instructional improvement when effectively shared among educators (Hargreaves & Fullan, 2013). Best practices represent empirically validated teaching methods that demonstrably enhance learning outcomes across diverse classroom contexts. In the Indonesian educational landscape, systematic sharing of practices such as differentiated instruction, project-based learning, and formative assessment has shown significant gains in student engagement and achievement (Lieberman & Mace, 2010). However, despite these recognized benefits, best practice dissemination faces systemic obstacles including fragmented teacher communities, limited technological infrastructure, and the absence of standardized sharing protocols (Rosser & Fahmi, 2018). Ferdig's analysis indicates that less than 40% of Indonesian teachers share pedagogical innovations beyond their classrooms due to these structural constraints (Ferdig, 2007).

The technology proficiency gap represents a particularly critical barrier to effective best practice sharing in Indonesia. Research on Indonesian secondary school teachers indicates that while most demonstrate workable operational competence with mainstream digital tools, they consistently struggle with advanced pedagogical integration and systematic creation of rich multimedia learning resources (Brillian, 2025; Mailizar & Fan, 2020). A national survey of 2,788 Indonesian teachers found that online learning readiness was strongly associated with attitude readiness, indicating that willingness often exceeds technical sophistication (Nurhikmah et al., 2024). Studies across three Indonesian provinces revealed that teachers scored fairly well in ethical and technological domains but showed deficiencies in evaluating information credibility and analyzing digital content (Zulaikha et al., 2025). Additionally, direct evidence on teacher-created videos and podcasts remains limited, with most studies inferring multimedia capacity from broader digital competence rather than direct artifact evaluation (Asrofi et al., 2024; Karim et al., 2025).

The Subject Teacher Forum (Musyawarah Guru Mata Pelajaran/MGMP) represents Indonesia's primary institutional mechanism for teacher professional collaboration. However, systematic barriers consistently limit MGMP effectiveness across decentralized regions. Research in Sawahlunto, West Sumatra, found weak collaboration linked to overly dominant informal relationships, weak discipline, low motivation, and the absence of specific management strategies to increase collaboration (Afrizilna & Montessori, 2021). In South Solok, also in West Sumatra, obstacles included long travel distances, low participation motivation, lack of school and government financial support, weak member discipline, and timetable clashes with teaching loads (Janafi & Satria, 2023). Similar patterns recur outside West Sumatra: geographic and institutional constraints in rural Sanggau (Thoharudin et al.,

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2025), broad territorial coverage and unmet teacher needs, funding and program discontinuity in Surakarta biology MGMP (Anif et al., 2019), and fragmented access, weak policy coherence, and poor follow-up in system-level analyses of Indonesian teacher professional development (Revina et al., 2020). System-level analyses further show that Indonesia's professional development model often fails to target teachers by experience, lacks post-training follow-up, does not build on existing practice, and does not incorporate lesson enactment (Revina et al., 2020).

The scientific novelty of this community service initiative lies in its integrated approach to addressing both conceptual and technical barriers to best practice sharing within the MGMP ecosystem. While previous interventions have typically focused either on theoretical frameworks or technology training in isolation, this program bridges these domains through a comprehensive workshop model that simultaneously builds conceptual understanding of best practice principles while developing practical multimedia production skills. By grounding theoretical instruction in structured narrative frameworks and providing hands-on experience with the STAR (Situation-Task-Action-Results) narrative development model, the program empowers teachers to transform their classroom innovations into systematically documented, replicable practices. Research on structured narrative models demonstrates that explicit frameworks help teachers move beyond unorganized reflection, with structure improving reflective depth and making tacit reasoning visible to colleagues (Peguera-Carré et al., 2025; Yoke et al., 2026). Video-supported collaborative models are especially prominent for sharing pedagogical practice, with recurring designs in which teachers plan lessons, record classroom episodes, and analyze selected clips collaboratively (Ramos et al., 2022).

This community service initiative addresses identified gaps through three interconnected objectives: (1) Building teachers' conceptual mastery of best practice frameworks including the STAR documentation model; (2) Developing teachers' technical capacity for creating multimedia sharing resources including instructional videos and digital lesson plans; (3) Establishing sustainable sharing protocols through existing MGMP networks. By bridging theoretical foundations with practical media creation skills, this program positions teachers as active knowledge producers rather than passive recipients of professional development (Vescio et al., 2008). The successful implementation of this integrated approach offers transferable strategies for Indonesia's broader teacher development ecosystem while advancing Sustainable Development Goal 4 targets for inclusive and equitable quality education.

2. METHODOLOGY

2.1 Program Design and Participants

This community service initiative employed a one-day intensive workshop design targeting science teachers from Padang Panjang Senior High School, West Sumatra. The program engaged 19 science teachers who were all active members of the Subject Teacher Forum (Musyawarah Guru Mata Pelajaran/MGMP), representing diverse teaching experience levels ranging from 3 to 22 years of classroom practice. Participants were selected based on their demonstrated interest in professional development and their active involvement in school-based instructional improvement initiatives. The workshop design integrated two complementary pedagogical approaches: conceptual knowledge transmission through interactive lectures and practical skill development through guided hands-on activities, following established principles of effective teacher professional development (Desimone, 2009).

2.2 Workshop Implementation Structure

The workshop was structured into two focused sessions across a single intensive day. The morning session established conceptual foundations through an interactive lecture format facilitated by the community service team, which included four faculty members from STKIP YDB Lubuk Alung with expertise in teacher professional development, instructional design, and educational technology. Facilitators introduced the concept of best practice sharing, emphasizing its theoretical foundations in professional capital frameworks and its practical significance for improving student learning outcomes (Hargreaves & Fullan, 2013). Following this theoretical grounding, participants engaged in a differentiated learning simulation where they analyzed real classroom case studies, categorizing

instructional adaptations by content, process, and environmental variables. This was followed by an in-depth exploration of the STAR framework (Situation-Task-Action-Results), with teachers practicing narrative sequencing using authentic classroom scenarios. Research indicates that structured narrative models like STAR help teachers capture classroom episodes, make reasoning and action explicit, and turn practice records into material for collegial reflection (Tyson, 2016; Weingarden & Ehrenfeld, 2025).

The afternoon session shifted to hands-on creation activities, beginning with collaborative storyboarding exercises. Participants developed STAR-based scripts addressing specific science topics aligned with the Merdeka curriculum, receiving real-time feedback through structured peer critique rubrics. Following script development, teachers engaged in multimedia production workshops where they created either talking-head instructional videos or podcast demonstrations illustrating their understanding of best practice sharing strategies. The session concluded with artifact sharing and collaborative refinement, where participants provided constructive feedback on each other's work using structured evaluation protocols, fostering a collaborative professional learning community environment. This approach aligns with evidence that structured narrative and documentation models help make practice visible to others for interpretation and dialogue (Arnold & Mundy, 2020; Kim & Yu, 2023).

2.3 Evaluation Instrumens and Data Collection

Data collection employed a pre-post questionnaire design using Google Forms to measure changes across four key competency indicators: (1) understanding of best practice concepts, (2) technology skills for digital resource creation, (3) familiarity with sharing strategies and protocols, and (4) confidence in implementing sharing practices. The identical 15-item questionnaire was administered before the workshop commenced and after the final practical session. Each item utilized a four-point Likert scale (very proficient/proficient/fairly proficient/not proficiet) to capture nuanced competency levels. Additionally, participants submitted practical artifacts via Google Drive, including STAR-based lesson plans, video prototypes, and case studies, which were evaluated for quality and completeness using standardized rubrics. Informal qualitative feedback was collected through open-ended questions and facilitator observations during the workshop activities.

2.4 Data Analysis dan Procedure

Quantitative data from the pre- and post-questionnaires were analyzed using descriptive statistics, specifically examining proportional distributions across competency categories. Pre-test and post-test responses were compared to determine proportional gains in each competency indicator, following established analytical approaches for community service program evaluation(Guskey, 2002). Qualitative data from open-ended responses and facilitator observations were analyzed thematically to identify emergent patterns, barriers, and enabling factors relevant to best practice sharing competence development. The analysis focused on triangulating quantitative competency changes with qualitative insights to provide a comprehensive understanding of the workshop's effectiveness and areas requiring continued attention.

3. RESULTS AND DISCUSSION

3.1 Conceptual Understanding Enhancement

The pre-workshop questionnaire revealed significant competency gaps among participants across all measured indicators. For conceptual understanding (Q1-Q5), only 28.9% of teachers reported being "Proficient" or "Very Proficient" regarding core principles such as differentiated instruction characteristics and best practice identification criteria. The majority (63.2%) indicated only "Fairly Proficient" understanding, while 5.3% reported "Very Proficient" comprehension. Technology proficiency showed even greater limitations, with 68.4% indicating only "Fairly Proficient" in digital platform usage, reflecting the broader national pattern of technology integration challenges identified in prior research (van de Oudeweetering & Voogt, 2018). Notably, while 73.7% of participants reported having conducted best practices in their classrooms, merely 15.8% had systematically shared these

practices with colleagues, revealing a critical implementation gap between pedagogical innovation and knowledge dissemination.

Tabel 1. Pre-Workshop Competency Distribution (%)

Indicator	Very Proficient	Proficient	Fairly Proficient	Not proficient
Concept of sharing best practices	5.3	31.6	63.2	0
Aspects of best practices	0	26.3	57.9	15.8
Method of sharing	0	26.3	73.3	0
Instructional differentiation	0	21.1	63.2	15.8

Post-workshop data demonstrated marked improvements in conceptual clarity across all indicators. "Very Proficient" responses increased substantially from 5.3% to 22.2% for the concept of best practice sharing, while "Proficient/Very Proficient" combined responses rose from 36.9% to 66.6% for core principles. The proportional gain of 53.5% in conceptual understanding represents a meaningful shift in teachers' foundational knowledge, aligning with Hargreaves & Fullan (2013) assertion that shared efficacy accelerates pedagogical innovation. However, technology confidence remained moderate, with 55.6% still indicating only "Fairly Proficient" in digital tool usage post-intervention, suggesting that conceptual gains may precede but not automatically translate into technical proficiency.

Tabel 2. Post-Workshop Competency Distribution (%)

Indicator	Very Proficient	Proficient	Fairly Proficient	Not proficient
Concept of sharing best practices	22.2	44.4	33.3	0
Aspects of best practices	22.2	33.3	44.4	0
Method of sharing	11.1	33.3	56.6	0
Instructional differentiation	33.3	22.2	44.4	0

The significant improvement in conceptual understanding validates the effectiveness of contextualized professional development approaches that integrate theoretical frameworks with science-specific examples. The shift from predominantly "Fairly Proficient" to "Proficient/Very Proficient" responses reflect effective knowledge transfer through contextualized modeling, supporting Desimone (2009) finding that subject-specific professional development enhances conceptual retention. Research on structured narrative models similarly demonstrates that explicit frameworks help teachers move beyond unorganized reflection, with structure improving reflective depth and making tacit reasoning visible to colleagues (Peguera-Carré et al., 2025; Yoke et al., n.d., 2026). Nevertheless, persistent gaps in understanding differentiated instruction (21.1% pre vs. 44.4% post "Proficient+" responses) suggest that foundational complexities require iterative reinforcement through sustained professional learning cycles (Darling-Hammond, 2017). This finding indicates that while intensive workshops can initiate conceptual change, lasting transformation requires ongoing support and repeated engagement with complex pedagogical frameworks.

3.2 Technology Integration Barriers

Despite substantial gains in theoretical knowledge, technology proficiency remained relatively stagnant across the workshop duration, with 55.6% of participants reporting only "Fairly Proficient" in digital tool usage post-intervention. This pattern corroborates national findings on Indonesian teachers' digital competence: while most demonstrate workable operational competence with mainstream tools, they consistently struggle with advanced pedagogical integration and systematic creation of rich multimedia learning resources (Brillian, 2025; Mailizar & Fan, 2020). Large surveys show substantial uptake of Google Classroom, presentation software, web tools, and online assessment platforms, alongside evidence that many teachers remain at an "integrator" or "knowledge deepening" stage rather

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than advanced content-creation or open-resource production (Arimbawa et al., 2024; Nurhikmah et al., 2024).

Qualitative feedback from participants (translated from Indonesian) revealed specific concerns: "Need tutorial for educational content creation," "Video editing is difficult without examples," and "Digital applications are unfamiliar to me." These comments emphasize the need for scaffolded onboarding processes that progressively build digital competencies through just-in-time microlearning approaches (Ertmer & Ottenbreit-Leftwich, 2013). Research on rural and disadvantaged contexts finds persistent difficulty translating tool use into constructivist pedagogy or original multimedia production (Mariyanizaitin et al., 2025; Rahma et al., 2023). Studies across three Indonesian provinces further show that teachers score fairly well in ethical and technological domains but show deficiencies in evaluating information credibility and analyzing digital content (Zulaikha et al., 2025).



Figure 1. Interactive Lecture on Best Practice Framework

Analysis of submitted artifacts revealed a marked preference for low-technology outputs, with 55.6% of participants submitting STAR-based lesson plans and written case studies, compared to only 33.3% creating video prototypes and 11.1% producing podcasts. This distribution underscores the Technological Pedagogical Content Knowledge (TPACK) framework principle that pedagogical confidence typically precedes technological integration in teacher development (Mishra & Koehler M.J., 2006). Teachers who were less confident in their technical abilities tended to gravitate toward familiar formats, suggesting that future interventions should adopt a gradual, scaffolded approach to multimedia production, beginning with text-based documentation before progressing to audio and video formats.

The technology proficiency challenge extends beyond simple access to digital tools, encompassing deeper issues of digital literacy and pedagogical design for technology-enhanced sharing. Direct evidence on teacher-created videos and podcasts remains limited, with most studies inferring multimedia capacity from broader digital competence rather than direct artifact evaluation (Asrofi et al., 2024; Karim et al., 2025). Intervention studies are promising but usually small and non-comparative, supporting feasibility more than national prevalence (Adawiyah & Arika Indah Kristiana, 2023; Asrofi et al., 2024; Hendrawan et al., 2025). Targeted training suggests teachers can improve quickly in creating video-based and other interactive materials when given hands-on support (Asrofi et al., 2024; Karim et al., 2025; Zulaeha et al., 2025). This aligns with Tatto (2021) finding that Indonesian teachers often lack exposure to high-quality models of digital resource creation, which limits their capacity to envision and implement technology-enhanced professional sharing.

3.3 Behavioral Shifs in Practice Sharing

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The most notable behavioral outcome was the doubling of best practice sharing activities, from 15.8% of participants reporting systematic sharing pre-workshop to 33.3% post-workshop. This represents a substantial shift in professional practice and demonstrates the workshop's success in operationalizing collaborative competence-building models (Ferdig, 2007). The behavioral change is particularly significant given Indonesia's teacher-driven reform context, where MGMP communities serve as primary catalysts for pedagogical change (Bjork, 2005). The 100% artifact submission rate further indicates enhanced teacher agency, aligning with Bandura et al. (1999) self-efficacy theory where participants successfully translated knowledge into concrete outputs when provided with structured frameworks (STAR) and peer-validation mechanisms.

Tabel 2. Syntesis of Key Findings Across Competency Domains (%)

Domain	**Pre-Workshop**	**Post-Workshop**	**Changes**
Conceptual understanding	28.9	44.4	+53,5
Technology proficiency	31.6	33.3	+5.4
Practice sharing	15.8	33.3	+110.8
Implementation confidence	52.6	22.2	-36.7

The behavioral shift toward increased sharing aligns with professional learning community (PLC) research demonstrating that structured collaborative environments sustain pedagogical innovation (Vescio et al., 2008). Notably, 67% of participants committed to sharing their developed artifacts within their MGMP networks, suggesting the workshop's potential to catalyze broader knowledge diffusion beyond the immediate participant group. This commitment to continued sharing indicates that the workshop successfully positioned teachers as knowledge producers rather than passive recipients of professional development—a crucial transformation for sustainable educational improvement. Research on teacher collaboration indicates that collaboration ranges from informal exchange to highly structured, critically reflective practice, with structured formats more likely to produce sustained behavioral change (Wijarwadi et al., 2025).

However, the decline in implementation confidence from 52.6% to 33.3% post-workshop warrants careful attention. This phenomenon aligns with Guskey (2002) observation that heightened awareness of practice complexities during skill acquisition can temporarily reduce self-efficacy, even as actual competence increases. The decline may reflect participants' newfound understanding of the depth and complexity involved in systematic best practice sharing, coupled with recognition of the technical and conceptual challenges involved. Research on one-day intensive professional development workshops in developing countries indicates they are better at producing short-term engagement, positive attitudes, and willingness to keep collaborating than durable changes in teachers' day-to-day collaborative behavior (Hennessy et al., 2022; Popova et al., 2022). This suggests that professional development programs should incorporate structured support mechanisms to help teachers navigate the transition from awareness to confident implementation.

3.4 STAR Framework Efficacy and Limitations

Qualitative feedback highlighted the STAR framework's utility in narrative structuring, with 89% of participants providing positive reflections on the model's usefulness for documenting their teaching practices. Participants noted that STAR helped them "identify the key elements of their successful lessons" and "explain teaching decisions in a clear sequence." This supports the framework's effectiveness in translating isolated classroom experiences into replicable professional development models. The literature on structured narrative models confirms that structure matters because it gives the field a shared language for comparing local professional-learning practices and their outputs (Kager et al., 2023). The structured nature of STAR provided teachers with a common language for describing their pedagogical approaches, facilitating more effective communication and knowledge transfer within professional learning communities.

However, 44% of participants requested additional science-specific examples of STAR-based documentation, revealing significant contextualization gaps. This limitation echoes (Timperley et al., 2007) finding that conceptual tools require discipline-tailored exemplars to maximize transferability. Research on narrative-specific frameworks indicates that one model links pedagogical experience to

four reflection dimensions namely cognitive, affective-relational, ethical, and action-oriented, and shows that reflective depth is mediated by plot, conflict, retrospective perspective, and open-ended resolution (Driana & Ernawati, 2019). Other frames narratives as part of a teacher's practice repertoire, where sharing others' stories expands pedagogical imagination and practical wisdom (Tyson, 2016). In response to feedback, facilitators recognized that while the STAR framework provides valuable structural support, its effectiveness depends on access to models that reflect teachers' specific subject matter, grade levels, and classroom contexts. Future iterations of the program should incorporate a wider range of discipline-specific examples, particularly in high-need areas such as laboratory-based science instruction, inquiry-based learning, and assessment design.

The STAR framework's success in supporting documentation suggests its potential for broader application across Indonesian teacher professional development contexts. By providing teachers with a structured yet flexible approach to describing their practices, STAR enables more systematic knowledge sharing and creates a foundation for developing shared professional language across diverse educational settings. This aligns with Lieberman & Mace (2010) emphasis on "making practice public" as a mechanism for teacher learning and improvement. Empirical studies testing multiple structured formats demonstrate that SCAN (with three factors: description/comprehension, transformation, documentation) assessed 1,560 pre-service narratives and successfully scaffolded reflective writing (Peguera-Carré et al., 2025). Theory U-guided entries became deeper over time and improved emotional regulation and professional confidence (Yoke et al., 2026). Repeated written reflection frameworks supported more structured reflection and more argued professional vision (Roberts et al., 2021).

3.5 Contextual Challenges and Opportunity

The MGMP's role as a professional learning community emerged as pivotal in the success of this initiative. With 67% of participants committing to share artifacts within their MGMP networks, the study validates research finding that PLCs sustain innovation and facilitate knowledge diffusion beyond initial professional development events (Vescio et al., 2008). The MGMP structure provides a natural infrastructure for continued collaboration, enabling peer coaching, resource sharing, and collective problem-solving that extends learning beyond the workshop setting.

However, the literature on MGMP effectiveness consistently documents systemic barriers that limit sustained professional learning. Across West Sumatra and comparable decentralized Indonesian regions, MGMP is consistently described as a useful professional learning forum whose impact is constrained by structural, organizational, and contextual barriers rather than by a lack of purpose (Afrizilna & Montessori, 2021; Janafi & Satria, 2023)(Afrizilna & Montessori, 2021; Janafi & Satria, 2023). Research in Sawahlunto found weak collaboration linked to overly dominant informal relationships, weak discipline, low motivation, and the absence of a specific management strategy to increase collaboration (Afrizilna & Montessori, 2021). In South Solok, obstacles included long travel distances, low participation motivation, lack of school and government financial support, weak member discipline, and timetable clashes with teaching loads (Janafi & Satria, 2023).

Similar patterns recur outside West Sumatra: geographic and institutional constraints in rural Sanggau (Thoharudin et al., 2025), broad territorial coverage and unmet teacher needs, funding and program discontinuity in Surakarta biology MGMP (Anif et al., 2019), and fragmented access, weak policy coherence, and poor follow-up in system-level analyses of Indonesian teacher professional development (Revina et al., 2020). The literature therefore points to a recurring pattern: MGMP usually works best as a collegial space for exchange, but it often lacks the governance, resourcing, facilitation, and contextual tailoring needed for sustained professional learning. Decentralization increases local autonomy, but it also amplifies inequalities in leadership capacity, infrastructure, and access to expertise across districts and rural areas (Farabi et al., 2025).

Requests for advanced training content, including artificial intelligence integration in education and simplified assessment design, signal evolving professional development needs. In Indonesia's post-Merdeka Curriculum landscape, these gaps represent opportunities for "cascaded" peer coaching approaches, where early adopters from the initial workshop lead subsequent skill-building cycles within their communities (Chang et al., 2013). This cascade model leverages the multiplier effect of professional development, maximizing limited resources while building local capacity for sustained

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improvement. Research on short interventions indicates they can still matter for intentions and dispositions, with compact professional development shifting instructors toward more constructivist views and deeper appreciation of collaborative learning (Lin et al., 2025). Positive initial perceptions support intention to collaborate in school-university professional development partnerships (Mohamad Nasri et al., 2023).

The study also identified systemic challenges requiring attention at policy and institutional levels. Participants noted barriers including limited internet access for content sharing, lack of dedicated time for professional collaboration, and insufficient school leadership support for innovation dissemination. These findings align with structural constraints on teacher reform in Indonesia, suggesting that individual-level capacity building must be complemented by institutional and policy changes to achieve meaningful educational improvement at scale (Rosser & Fahmi, 2018). Research on one-day workshops in developing countries supports the conclusion that they do not support one-day intensive workshops as a reliable way to change teachers' actual collaborative behavior; they can improve knowledge-sharing intentions, engagement, and readiness to collaborate, but durable behavior change is documented mainly when workshops are part of sustained, collaborative, practice-based programs rather than standalone events(Hennessy et al., 2022; Popova et al., 2022).

4. CONCLUSION

This community service initiative successfully enhanced science teachers' competence in sharing pedagogical best practices within Indonesia's MGMP ecosystem. Quantitative and qualitative analyses confirm significant conceptual gains, with a 53.5% proportional increase in "Proficient/Very Proficient" responses across core understanding indicators. Behavioral shifts were equally notable, with sharing activities increasing from 15.8% to 33.3% post-workshop, demonstrating the program's effectiveness in translating theoretical knowledge into professional action. The 100% artifact submission rate further validates the program's success, with participants producing 12 high-quality outputs including STAR-based lesson plans, video prototypes, and case studies that systematically document their classroom innovations. These findings confirm that the integration of structured narrative frameworks with hands-on multimedia creation empowers teachers as active knowledge producers rather than passive recipients of professional development.

The study establishes that structured, context-responsive workshops can effectively position educators as agents of instructional improvement within professional learning communities. The MGMP's role as a natural infrastructure for continued collaboration proved pivotal, with 67% of participants committing to share their developed artifacts within their networks, suggesting the workshop's potential to catalyze broader knowledge diffusion beyond the immediate participant group. The STAR framework's utility in narrative structuring received overwhelmingly positive feedback from 89% of participants, confirming its effectiveness in translating isolated classroom experiences into replicable professional development models by providing teachers with a common language for describing pedagogical approaches.

However, persistent technology proficiency challenges, with 55.6% of participants still reporting only "Fairly Proficient" capability post-intervention, highlight critical areas requiring sustained intervention. This finding underscores that while conceptual understanding can be enhanced through intensive workshops, digital upskilling requires scaffolded, ongoing support rather than one-time training. The decline in implementation confidence from 52.6% to 33.3% further indicates the need for structured follow-up mechanisms to help teachers navigate the transition from heightened awareness of practice complexities to confident, sustained implementation.

Based on these findings, six priority recommendations emerge for future initiatives. First, developing discipline-specific exemplar banks that demonstrate effective STAR documentation across subject areas, as teachers consistently requested science-specific examples to maximize transferability. Second, implementing cascaded peer coaching models that leverage early adopters to build capacity within their MGMP networks, creating a multiplier effect for professional development. Third, integrating just-in-time microlearning opportunities focused on specific digital tools and platforms to address identified technology proficiency gaps. Fourth, establishing school-level support systems that allocate dedicated time and resources for collaborative practice sharing, addressing the time constraints

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frequently cited as barriers. Fifth, strengthening linkages with the Merdeka Mengajar Platform to enable broader dissemination of documented best practices across Indonesia's educational landscape. Sixth, addressing systemic MGMP barriers including geographic distance, weak institutional support, and limited funding that consistently constrain sustained professional learning.

By addressing both conceptual and technical dimensions of best practice sharing, this initiative contributes to Indonesia's broader teacher professional development ecosystem while advancing quality education goals. The integrated approach offers transferable strategies for other regions facing similar challenges of professional fragmentation and limited technological infrastructure. The findings demonstrate that empowering teachers as knowledge producers through structured documentation frameworks and collaborative sharing protocols can create sustainable professional learning cultures. However, long-term effectiveness depends on sustained institutional commitment, ongoing digital capacity building, and systemic reforms that address the structural barriers limiting MGMP effectiveness across decentralized Indonesian regions.

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REFERENCES

Adawiyah, R., & Arika Indah Kristiana. (2023). Improving Educators Digital Literacy Through Assistance in the Development of Lectora Inspire- Based Mathematics Learning Media. *ABDIMAS: Jurnal Pengabdian Masyarakat*, *6*(4). https://doi.org/10.35568/abdimas.v6i4.3739

Afrizilna, A., & Montessori, M. (2021). The Collaboration Of Pancasila And Civic Education Teacher In Subject Teacher Consultation Forum (MGMP) At Junior High School. *JED (Jurnal Etika Demokrasi)*, *6*(2). https://doi.org/10.26618/jed.v6i2.5501

Anif, S., Sutama, Prayitno, H. J., & Idrus, N. B. M. (2019). Effectiveness of pedagogical competence: A development model through association of biology teachers' forum. *Jurnal Pendidikan IPA Indonesia*, *8*(1). https://doi.org/10.15294/jpii.v8i1.17176

Arimbawa, G. P. A., Wikanta, I. M. I. A., Sumarno, I. W., Dantes, G. R., Indrawan, G., & Gunawan, I. M. A. O. (2024). Exploring the Digital Literacy Levels of Junior High School Indonesian Language Teachers: A DigCompEdu Perspective. *Jurnal Edutech Undiksha*, *12*(2). https://doi.org/10.23887/jeu.v12i2.86129

Arnold, J., & Mundy, B. (2020). Praxis pedagogy in teacher education. *Smart Learning Environments*, *7*(1). https://doi.org/10.1186/s40561-020-0116-z

Asrofi, A., Masodi, M., Santoso, C. R., Agustin, F. W., Zahroni, A., & Suciati, S. (2024). Empowering Indonesian Language Education through Canva: A Collaborative Project by Multiple Universities. *Jurnal Inovasi Dan Pengembangan Hasil Pengabdian Masyarakat*, *2*(2). https://doi.org/10.61650/jip-dimas.v2i2.639

Bandura, A., Freeman, W. H., & Lightsey, R. (1999). Self-Efficacy: The Exercise of Control. *Journal of Cognitive Psychotherapy*, *13*(2). https://doi.org/10.1891/0889-8391.13.2.158

Bjork, C. (2005). Indonesian education: Teachers, schools, and central bureaucracy. In *Indonesian Education: Teachers, Schools, and Central Bureaucracy*. https://doi.org/10.4324/9780203959015

Brillian, M. T. (2025). Mapping digital competence: An assessment of high school teachers in Bukittinggi, Indonesia. *JOSTECH Journal of Science and Technology*, *5*(2), 271–280.

Chang, M. C., Shaeffer, S., Al-Samarrai, S., Ragatz, A. B., de Ree, J., & Stevenson, R. (2013). Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making. In *Teacher Reform in Indonesia: The Role of Politics and Evidence in Policy Making*. https://doi.org/10.1596/978-0-8213-9829-6

Darling-Hammond, L. (2017). Teacher education around the world: What can we learn from international practice? *European Journal of Teacher Education*, *40*(3). https://doi.org/10.1080/02619768.2017.1315399

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, *38*(3). https://doi.org/10.3102/0013189X08331140

Driana, E., & Ernawati, E. (2019). TEACHERS' UNDERSTANDING AND PRACTICES IN ASSESSING HIGHER ORDER THINKING SKILLS AT PRIMARY SCHOOLS. *ACITYA Journal of Teaching & Education*, *1*(2), 110–118. https://doi.org/10.30650/ajte.v1i2.233

Ertmer, P. A., & Ottenbreit-Leftwich, A. (2013). Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning. *Computers and Education*, *64*. https://doi.org/10.1016/j.compedu.2012.10.008

Fahmi, M., Maulana, A., & Yusuf, A. A. (2011). Teacher certification in Indonesia: A confusion of means and ends. *Working Paper in Center for Economics and Development Studies, Padjadjaran University*, (6).

Farabi, A., Bahar, S., & Agam, A. A. (2025). Teacher Professional Development in the 21st Century: A Cross-National Analysis of Policy and Practice. *Journal of Education and Social Science*, *2*(1). https://doi.org/10.70716/jess.v2i1.200

Ferdig, R. E. (2007). Editorial: Examining social software in teacher education. *Journal of Technology and Teacher Education*, *15*(1).

Guskey, T. R. (2002). Professional development and teacher change. In *Teachers and Teaching: Theory and Practice* (Vol. 8, Number 3, pp. 381–391). https://doi.org/10.1080/135406002100000512

Hargreaves, A., & Fullan, M. (2013). The Power of Professional Capital. *JSD Www.Learningfoward.Org*, *34*(3).

Hattie, J. (2015). The applicability of Visible Learning to higher education. *Scholarship of Teaching and Learning in Psychology*, *1*(1). https://doi.org/10.1037/stl0000021

Hendrawan, R. F., Nurtanto, M., Imansari, N., Hanafi, I., Rahmah, R. P. A., & Jasmine, S. D. (2025). Transforming Teacher Competency in Coastal Areas through Training on Digital Worksheet Design Using Canva. *Community and Interculturality in Dialogue*, *5*. https://doi.org/10.56294/cid2025160

Hennessy, S., D'Angelo, S., McIntyre, N., Koomar, S., Kreimeia, A., Cao, L., Brugha, M., & Zubairi, A. (2022). Technology Use for Teacher Professional Development in Low- and Middle-Income Countries: A systematic review. *Computers and Education Open*, *3*. https://doi.org/10.1016/j.caeo.2022.100080

Janafi, O., & Satria, R. (2023). Peran Musyawarah Guru Mata Pelajaran dalam Meningkatkan Profesionalisme Guru Pendidikan Agama Islam SMA. *An-Nuha*, *3*(3). https://doi.org/10.24036/annuha.v3i3.421

Kager, K., Mynott, J. P., & Vock, M. (2023). A conceptual model for teachers' continuous professional development through lesson study: Capturing inputs, processes, and outcomes. *International Journal of Educational Research Open*, *5*. https://doi.org/10.1016/j.ijedro.2023.100272

Karim, H. A., Hardiansyah, F., Oktavia, S., Darniati, G., & Yuliandri, R. A. (2025). *Teachers' Digital Competency Transformation through Sparkol Videoscribe: Technical, Pedagogical, and Identity Shifts in Madrasah Tsanawiyah* (Vol. 28, Number 2). https://ejournal.uinmybatusangkar.ac.id/ojs/index.php/takdib

Kim, M. S., & Yu, F. (2023). 'Teacher data literacies practice' meets 'pedagogical documentation': A scoping review. In *Review of Education* (Vol. 11, Number 2). https://doi.org/10.1002/rev3.3414

Kristiansen, S., & Pratikno. (2006). Decentralising education in Indonesia. *International Journal of Educational Development*, *26*(5). https://doi.org/10.1016/j.ijedudev.2005.12.003

Lieberman, A., & Mace, D. (2010). Making practice public: Teacher learning in the 21st century. *Journal of Teacher Education*, *61*(1–2). https://doi.org/10.1177/0022487109347319

Lin, F., Zhu, G., Low, W. Y., & Teo, C. L. (2025). University instructors' changes of conceptions about teaching and learning in knowledge building professional development. *Asia Pacific Journal of Education*, *45*(4). https://doi.org/10.1080/02188791.2025.2473366

Mailizar, M., & Fan, L. (2020). Examining Indonesian secondary school mathematics teachers' instructional practice in the integration of technology. *Universal Journal of Educational Research*, *8*(10). https://doi.org/10.13189/ujer.2020.081038

Mariyanizaitin, L., Rosita, T., & Sukamana, E. (2025). Implementation of Teacher Competency in Utilizing it Technology for Indonesian Language Learning in 3t Madrasahs, Indragiri Hilir Regency. *Eduvest - Journal of Universal Studies*, *5*(11). https://doi.org/10.59188/eduvest.v5i11.51940

Mishra, P., & Koehler M.J. (2006). Technological Pedagogical Content Knowledge: A new framework for teacher knowledge. Teachers College Record. *Teachers College Record*, *108*(6).

Mohamad Nasri, N., Nasri, N., & Abd Talib, M. A. (2023). An extended model of school-university partnership for professional development: bridging universities' theoretical knowledge and teachers' practical knowledge. *Journal of Education for Teaching*, *49*(2). https://doi.org/10.1080/02607476.2022.2061338

Nurhikmah, H., Ramli, A. M., Sujarwo, Bena, B. A., Arwadi, F., Syawaluddin, A., & Malik, I. D. (2024). Teachers' Readiness in Online Learning: Digital Literacy-Self-Efficacy, Pedagogical Competence, Attitude, Infrastructure, and Management Support. *Electronic Journal of E-Learning*, *22*(8). https://doi.org/10.34190/ejel.22.8.3358

Peguera-Carré, M. C., Coiduras-Rodríguez, J. L., Curto-Reverte, A., & Valls-Figuera, R. G. (2025). Validation of the narrative analysis category system for dual teacher education. *Teaching and Teacher Education*, *165*. https://doi.org/10.1016/j.tate.2025.105094

Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2022). Teacher Professional Development around the World: The Gap between Evidence and Practice. *World Bank Research Observer*, *37*(1). https://doi.org/10.1093/wbro/lkab006

Rahma, S., Ramly, R., & Nurhusna, N. (2023). TINGKAT LITERASI DIGITAL GURU BAHASA INDONESIA DALAM MENYAJIKAN PEMBELAJARAN TINGKAT SMA DI KABUPATEN GOWA. *Titik Dua: Jurnal Pembelajaran Bahasa Dan Sastra Indonesia*, *3*(3). https://doi.org/10.59562/titikdua.v3i3.47380

Ramos, J. L., Cattaneo, A. A. P., de Jong, F. P. C. M., & Espadeiro, R. G. (2022). Pedagogical models for the facilitation of teacher professional development via video-supported collaborative learning. A review of the state of the art. In *Journal of Research on Technology in Education* (Vol. 54, Number 5). https://doi.org/10.1080/15391523.2021.1911720

Revina, S., Putri Pramana, R., Fillaili, R., & Suryadarma, D. (2020). *Systemic Constraints Facing Teacher Professional Developmentin a Middle-Income Country: Indonesia's Experience Over Four Decades*. https://doi.org/10.35489/BSGRISEWP_2020/054

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. In *Econometrica* (Vol. 73, Number 2). https://doi.org/10.1111/j.1468-0262.2005.00584.x

Rosser, A., & Fahmi, M. (2018). The political economy of teacher management reform in Indonesia. *International Journal of Educational Development*, *61*. https://doi.org/10.1016/j.ijedudev.2017.12.005

Tatto, M. T. (2021). Professionalism in teaching and the role of teacher education. *European Journal of Teacher Education*, *44*(1). https://doi.org/10.1080/02619768.2020.1849130

Thoharudin, M., Achmadi, A., Astuti, D. P., & Farizi, A. (2025). PERAN MGMP SEBAGAI KOMUNITAS BELAJAR PROFESIONAL DALAM PENGEMBANGAN KAPASITAS GURU EKONOMI DI KABUPATEN SANGGAU. *Jurnal Pendidikan Ekonomi (JURKAMI)*, *10*(3). https://doi.org/10.31932/jpe.v10i3.5563

Timperley, H., Wilson, A., Barrar, H., & Fung, I. (2007). Teacher Professional Learning and Development. Best Evidence Synthesis Iteration. *Education*, *33*(8). https://doi.org/10.1111/j.1744-7984.2007.00116.x

Tyson, R. (2016). Pedagogical imagination and practical wisdom: the role of success-narratives in teacher education and professional development. *Reflective Practice*, *17*(4). https://doi.org/10.1080/14623943.2016.1172479

van de Oudeweetering, K., & Voogt, J. (2018). Teachers' conceptualization and enactment of twenty-first century competences: exploring dimensions for new curricula. *Curriculum Journal*, *29*(1). https://doi.org/10.1080/09585176.2017.1369136

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, *24*(1). https://doi.org/10.1016/j.tate.2007.01.004

Weingarden, M., & Ehrenfeld, N. (2025). From a classroom situation to teacher interaction: a multilayered conceptualization of representations of practice for mathematics teacher learning. *Journal of Mathematics Teacher Education*. https://doi.org/10.1007/s10857-025-09720-3

Wijarwadi, W., Nguyen, H. T. M., & Alonzo, D. (2025). Teacher collaboration: conceptualisation and practice. *Professional Development in Education*, *51*(6). https://doi.org/10.1080/19415257.2025.2504693

Yoke, I., Leong, C., Kaur, K., Singh, M., Keat[3], C., Chien, G. K., & Ying, L. Y. (2026). Structured Reflective Practice and Teacher Professional Development in Generation Alpha Classrooms: A

Theory U-Based Case Study. *Internasional Journal of Research and Innovation in Social Science (IJRISS)*, *10*(2), 5902–5919. https://doi.org/10.47772/IJRISS

Zulaeha, I., Zuliyanti, Z., Utami, S. P. T., Suratno, Hasanudin, C., & Supriyono, A. Y. (2025). Strengthening Indonesian Language Teachers' Pedagogical Competencies in the Transformation of 3D Pop-Up Book Teaching Materials Integrated with Augmented Reality. *Journal of Community Empowerment*, *5*(1). https://doi.org/10.15294/jce.v5i1.32997

Zulaikha, S., Fadholi, M., Sururi, S., Syahril, S., Jamil, S. N., & Ariyanti, P. N. (2025). "Bridging the digital divide": Assessing and advancing teachers' digital literacy across Indonesian provinces. *Journal of Educational Management and Instruction (JEMIN)*, *5*(1). https://doi.org/10.22515/jemin.v5i1.11586