

Available online at:

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Volume 5, 2025 (261-275)

International Conference on Humanities,
Education, Language, and Culture

Teacher Competencies to Improve Primary Education in Indonesia: Challenges, Strategies, and Policy Implications

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Abstract

Teacher competency plays a pivotal role in shaping the quality of primary education. In Indonesia, professional development is hindered by limited access to quality training, ineffective programs, and disparities between urban and rural education systems. This literature review analyzes these challenges and examines strategies from both Indonesian and international contexts, particularly Finland and Singapore based on Scopus-indexed research. Key factors for improving teacher quality include Continuous Professional Development (CPD), peer mentoring, digital integration, and supportive policy frameworks. While successful models abroad emphasize structured learning communities and reduced administrative burdens, Indonesian teachers often face excessive workloads and underdeveloped training infrastructure. To improve outcomes, Indonesia must prioritize high-quality, accessible training, integrate digital learning platforms, and streamline bureaucratic demands. Strengthening peer collaboration and fostering a culture of lifelong learning are also critical. This study contributes to the literature by offering a comparative, evidence-based analysis of teacher competency development, with implications for sustainable and inclusive education reform in Indonesia.

Keywords: Teacher Competency; Primary Education; Indonesia

INTRODUCTION

The improvement of primary education in Indonesia has become an urgent national priority, particularly in the context of achieving Sustainable Development Goal 4 (SDG 4), which emphasizes inclusive and equitable quality education for all. At the heart of this agenda lies the role of teachers, whose professional competencies are widely recognized as a crucial determinant of student learning outcomes and overall educational quality. Despite numerous teacher development initiatives and certification policies implemented over the years, significant gaps persist between policy aspirations and classroom realities.

Teacher competencies comprising pedagogical, personal, social, and professional dimensions are central to instructional quality. A study by Mukti and Noviafitri (2024) among 127 state madrasah teachers in Malang and Batu demonstrated that these competencies accounted for up to 90.8% of improvements in teaching effectiveness. While many teachers showed proficiency in lesson planning and instructional delivery, challenges remained in reflective practice and adaptive instruction, often due to constraints in time and contextual support. These findings affirm that competency is not solely a matter of academic qualification, but of sustained, context-sensitive professional mastery.

However, other research complicates this narrative. Puspitaningtyas and Jasmina (2023), analyzing national assessment data across 501 Indonesian districts and cities, found no significant correlation between teacher certification and student achievement in literacy and numeracy. Their logistic regression analysis suggests that while certification fulfills formal administrative criteria, it does not necessarily translate into improved classroom outcomes. Variables such as infrastructure, digital access, and socioeconomic status emerged as stronger predictors of

student performance, questioning the current focus of teacher professionalization policy.

The COVID-19 pandemic further exposed systemic vulnerabilities in teacher preparedness. A study by Talahiban et al. (2022) involving 78 public elementary school teachers in the Philippines—findings echoed in Indonesia, highlighted deficits in formative assessment skills and a heavy reliance on emotion-focused coping mechanisms during the shift to remote learning. Many Indonesian teachers, especially in under-resourced areas, faced similar difficulties in adapting to the technological and pedagogical demands of online education.

Indonesia's geographic and infrastructural diversity adds further complexity. Kurniati, Arafat, and Mulyadi (2020) found that in remote areas like Banyuasin, even with local government efforts to encourage teacher development through further studies and peer mentoring, systemic barriers persisted. These included poor school facilities, limited supervisory support, and infrastructure deficits. Similarly, Ibda et al. (2023) emphasize that inconsistent training models and limited government backing continue to undermine teacher development nationwide. Comparative international research reinforces the vital role of comprehensive teacher preparation. Moghtadaie and Taji (2018) stress that globally, teacher competence remains among the most influential factors in student achievement. Their findings suggest that fragmented or inadequate development systems severely limit educational gains.

Given this complex and multi-layered landscape, there is a pressing need to critically examine Indonesia's teacher competency development strategies, assess their effectiveness, and compare them with international best practices. While several reviews and policy reports have addressed teacher quality, few focus specifically on Scopus-indexed empirical studies with a combined lens on national

and local challenges, certification efficacy, and socio-contextual constraints.

This literature review therefore seeks to:

- Explore the key barriers faced by Indonesian primary school teachers in developing professional competencies,
- Assess the effectiveness of existing certification and training frameworks, and
- Derive implications from global models to inform a more equitable and context-sensitive national strategy.

By grounding the analysis in peer-reviewed, Scopus-indexed literature, this review contributes to building a holistic, evidence-based framework for improving teacher quality and, in turn, advancing Indonesia's primary education outcomes.

METHODS

This study uses a literature review method, focusing on teacher competencies in improving primary education in Indonesia. A total of 22 Scopus-indexed articles published between 2019 and 2025 were selected based on their relevance to the topic. The articles were sourced from databases such as Scopus, ScienceDirect, and Google Scholar, using keywords like *“teacher competency,”* *“primary education,”* *“professional development,”* and *“Indonesia.”* The selection process followed the PRISMA guidelines to ensure the quality and relevance of each source. Only peer-reviewed journal articles were included, while opinion pieces and non-academic sources were excluded. Each article was analyzed to identify key findings, ongoing challenges, and effective strategies related to teacher competency development. The

aim is to synthesize current knowledge and provide practical policy recommendations to enhance teacher quality and improve primary education in Indonesia.

RESULTS

This comprehensive literature analysis provides a multidimensional understanding of the current state of teacher competencies in Indonesian primary education. It synthesizes national and international studies to highlight emerging themes, structural challenges, and strategic approaches for professional development. The analysis is structured into three key sections: (A) *Thematic Insights from Research*, (B) *Ongoing Challenges in Competency Development*, and (C) *Strategic Pathways and Global Comparisons*.

A. Thematic Insights from the Literature

1. Core and Contextual Teacher Competencies

The Foundational Role of Core Teacher Competencies:

Mukti and Noviafitri (2024) found that pedagogical, professional, personal, and social competencies accounted for up to 90.8% of teaching effectiveness in Islamic primary schools. Teacher education must adopt an integrated, balanced approach that develops all four competencies through experiential learning and reflective practice.

Certification Without Transformation: Puspitaningtyas and Jasmina (2023) noted that teacher certification in Indonesia does not consistently improve student performance due to its administrative, rather than pedagogical, orientation. Certification processes should emphasize in-depth classroom observation, mentoring, and performance-based assessment.

Contextual Barriers in Disadvantaged Regions: Kurniati et al. (2020) highlighted the challenges in underdeveloped areas, including poor infrastructure, limited digital access,

and weak professional support systems. Tailored interventions such as mobile training units and localized peer mentoring are essential to address regional disparities. While competency frameworks emphasize uniform standards, regional disparities demand localized adaptations. Without context-sensitive implementation, national policies risk being ineffective in marginalized settings.

2. Expanding and Structuring Competency Development

Structured Competency Development Models: Usman et al. (2024) proposed a ten-dimensional model for novice teachers, identifying gaps between their ethical awareness and institutional expectations. Curricula should include strategic thinking, ethical responsibility, and pedagogical innovation to align values with practice.

21st-Century Skills Through Project-Based Learning (PBL): Martinez (2022) demonstrated that PBL aligns well with Indonesia's Merdeka Belajar philosophy, fostering critical thinking and collaboration. PBL should be embedded in both pre-service and in-service teacher training, supported by coaching and evaluation systems.

Practice-Based Teacher Education Models: Tal (2019) emphasized hands-on training approaches, such as peer observations and simulations to enhance early-stage teacher competencies. Clinical, practice-based training models should be integrated early in teacher education programs.

Digital and AI Competency Gaps: Ren and Wu (2025) reported that teachers, especially during COVID-19, lacked readiness to use digital and AI tools effectively. A national Digital Teacher Competency Framework is needed, covering digital literacy, AI ethics, and instructional design. Effective

teacher development must go beyond traditional pedagogy to integrate digital skills, ethical reasoning, and applied learning. However, without institutional support, even the most innovative frameworks risk poor adoption.

3. Personal and Emotional Dimensions of Teaching **Emotional Intelligence and Student Motivation:**

Arias et al. (2022) found that emotionally intelligent teachers created more engaging and safer learning environments, which improved student motivation.

Crisis Resilience and Coping Strategies : Talahiban et al. (2022) observed that teachers often used avoidance coping mechanisms during COVID-19, reflecting limited crisis preparedness.

Professional Development and Teacher Identity : Yangambi (2021) argued that misalignment between training content and classroom reality hinders the development of a strong professional identity.
Implications:

- Integrate social-emotional learning (SEL), empathy, and trauma-informed practices into teacher training.
- Ensure professional development is contextual, participatory, and aligned with classroom realities.
- Provide psychosocial support and promote teacher autonomy to strengthen identity and resilience.

These studies highlight that professional growth is not purely technical. Emotional well-being, identity formation, and teacher autonomy are foundational for sustained effectiveness, especially in crisis-prone or high-pressure environments.

B. Persistent Challenges in Competency Development

1. Limited Access to Professional Development

Bahmannia et al. (2020) highlight disparities in access to training, particularly in remote and under-resourced areas. Logistical, financial, and resource-related issues prevent equitable professional development. Affirmative policies must ensure nationwide access to quality training, especially through digital platforms and regional capacity building.

2. Low Digital Integration in Training Programs

Novita Sonia (2023) observes that many teachers, especially in rural areas, possess limited digital skills, exacerbated by insufficient technological infrastructure. Teacher training must embed educational technology as a core competency, not as an optional or supplementary skill.

3. Excessive Administrative Burdens

Ibda et al. (2023) find that excessive non-teaching duties reduce teachers' capacity to innovate in pedagogy. Global Comparison: Countries such as Finland and Japan minimize administrative burdens by providing teaching assistants or using digital administrative systems. Structural reforms are needed to streamline administrative processes and allow teachers to focus on instructional quality.

These challenges are interconnected. For example, limited access to professional development often overlaps with low digital integration, especially in remote regions where infrastructure is weak. Furthermore, excessive administrative workloads leave little time for teachers to engage meaningfully in digital training or CPD activities, compounding the problem. Addressing these issues in

isolation will have limited effect unless tackled as part of a comprehensive, system-wide reform.

Table 1. Summary of Challenges and Recommended Solutions

Challenge	Recommended Solution
Limited access to professional development	Implement digital and regional training platforms; provide equitable funding and infrastructure support.
Low digital integration in training	Make digital literacy and educational technology a core component of teacher training.
Excessive administrative burdens	Reduce non-teaching tasks through structural reforms and digital administrative systems.

C. Strategic Approaches and Global Comparisons

1. Expanding Continuous Professional Development (CPD)

Fredy and Hamsinah Day (2022) advocate for CPD models that are reflective, ongoing, and grounded in classroom realities. In Indonesia, initiatives such as the 'Guru Penggerak' program by the Ministry of Education promote teacher leadership, mentoring, and continuous learning, particularly in urban areas. CPD should be embedded in mentoring frameworks, classroom-based inquiry, and peer collaboration mechanisms. Policies should support differentiated CPD models tailored to local

needs, for example, mobile CPD units for rural regions and digital CPD platforms for urban schools.

2. Institutionalizing Professional Learning Communities (PLCs)

Simonovic (2021) finds that PLCs significantly enhance teacher collaboration, instructional innovation, and reflective dialogue. In Southeast Asia, Singapore’s PLC framework emphasizes structured collaboration, regular peer observation, and shared lesson study. In Indonesia, small-scale PLCs supported through the 'Komunitas Belajar' initiative have shown promise, especially in teacher training colleges. Indonesia should formally institutionalize PLCs at the school and district levels. Policies must offer incentives, digital tools, and protected time for collaborative planning, with adaptations for rural schools via mobile teams or regional teacher hubs.

3. Global Benchmarking: Indonesia and International Best Practices

Table 2. Best Practice Comparison

Dimension	Indonesia	International Best Practices
Access to Training	Uneven, especially in remote regions	Universal access through blended or digital learning
Technology Integration	Limited and inconsistent	Fully embedded in teacher training and supported by policy

Administrative Burden	High, often obstructs instructional focus	Reduced via support staff and automated systems
Professional Learning (PLCs)	Not yet institutionalized or systematically facilitated	Well-established, government-supported, and collaborative

4. CONCLUSION

This literature review reveals that teacher competency in Indonesia is shaped by a complex interplay of systemic, contextual, and personal factors. Key findings indicate that while core competencies—pedagogical, professional, personal, and social—significantly influence instructional quality (Mukti & Noviafitri, 2024), formal certification alone does not guarantee improved student outcomes (Puspitaningtyas & Jasmina, 2023). Additionally, barriers such as limited access to training, low digital integration, and excessive administrative workloads continue to hinder professional development, especially in rural and under-resourced regions. Enhancing teacher competency in Indonesia therefore requires an ecosystemic approach, one that addresses not only technical skills but also emotional intelligence, pedagogical innovation, digital readiness, and sensitivity to diverse school contexts. National policy must promote equitable access, continuous professional learning, and collaborative institutional support to empower teachers across the archipelago.

Looking forward, Indonesia should pilot a Digital Teacher Competency Framework that integrates AI literacy, ethical use of technology, and online pedagogy. Additionally, systematic evaluation of Professional Learning Communities (PLCs), especially in rural and remote settings can inform scalable models of peer-driven professional

growth. By combining local innovations with international best practices, Indonesia has the opportunity to build a resilient and high-quality teaching workforce aligned with the evolving demands of 21st-century education.

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