

ORIGINAL

A Post-Pandemic Management Model for Enhancing Junior High School Teachers' Professional Competence in Yogyakarta, Indonesia: Development and Validation

Un modelo de gestión pospandémico para mejorar la competencia profesional de los docentes de secundaria en Yogyakarta, Indonesia: desarrollo y validación

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ABSTRACT

Introduction: the Covid-19 pandemic has exposed a critical gap in the professional competence of Indonesian teachers, particularly in digital pedagogy and adaptive teaching. In the Special Region of Yogyakarta, government-led initiatives such as the Zoning-Based Learning Competency Development Program (PKP) and the Teacher Leadership Program (PPGP).

Objective: this study addresses this critical gap by responding to three research objectives: 1. to investigate the management models implemented to improve teachers' professional competence during the pandemic in Yogyakarta; 2. to identify their operational weaknesses; and 3. to develop and validate a novel conceptual management model for the post-pandemic era

Method: the study investigates the management models implemented during the pandemic, identifies its operational shortcomings, and proposes a new empirically based conceptual model for post pandemic teacher professional development. Using a mixed method research and development design adapted from Borg and Gall, data were collected through observation, semi-structured interviews, and document analysis involving 70 teachers, principals, supervisors, and education offices in Bantul Regency.

Result: reveal that the existing model relies on only four classic management functions and suffers from poor planning, inadequate technology integration, and inadequate follow-up. In response, the researchers developed a six-function management model - planning, organizing, facilitating, mobilizing, controlling, and evaluating - centered on mixed collaborative study groups and university-school partnerships.

Conclusion: this model offers a scalable and context-sensitive framework for post-pandemic teacher development in Indonesia and a similar Global South context.

Keywords: Teacher Professional Competence; Post-Pandemic Education; Management Model; Blended Professional Development; Yogyakarta.

RESUMEN

Introducción: la pandemia de Covid-19 ha puesto de manifiesto una brecha crítica en la competencia profesional de los profesores indonesios, especialmente en pedagogía digital y enseñanza adaptativa. En la Región Especial de Yogyakarta, iniciativas lideradas por el gobierno como el Programa de Desarrollo de Competencias de Aprendizaje Basadas en Zonificación (PKP) y el Programa de Liderazgo Docente (PPGP).

Objetivo: este estudio aborda esta brecha crítica respondiendo a tres objetivos de investigación: 1. investigar los modelos de gestión implementados para mejorar la competencia profesional de los profesores durante la

pandemia en Yogyakarta; 2.to identificar sus debilidades operativas; y 3.to desarrollar y validar un modelo conceptual novedoso de gestión para la era pospandemia

Método: el estudio investiga los modelos de gestión implementados durante la pandemia, identifica sus deficiencias operativas y propone un nuevo modelo conceptual empíricamente basado en el desarrollo profesional docente postpandemia. Utilizando un diseño de investigación y desarrollo de métodos mixtos adaptado de Borg y Gall, los datos se recopilaron mediante observación, entrevistas semiestructuradas y análisis documental con 70 profesores, directores, supervisores y oficinas educativas en la Regencia de Bantul.

Resultado: revelar que el modelo existente se basa únicamente en cuatro funciones clásicas de gestión y sufre de una mala planificación, integración tecnológica inadecuada y seguimiento insuficiente. En respuesta, los investigadores desarrollaron un modelo de gestión de seis funciones - planificación, organización, facilitación, movilización, control y evaluación - centrado en grupos de estudio colaborativos mixtos y asociaciones universidad-escuela.

Conclusión: este modelo ofrece un marco escalable y sensible al contexto para el desarrollo docente pospandemia en Indonesia y un contexto similar del Sur Global.

Palabras clave: Competencia Profesional Docente; Educación Pospandémica; Modelo de Gestión; Desarrollo Profesional Combinado; Yogyakarta.

INTRODUCTION

The Covid-19 pandemic precipitated a seismic shift in Indonesia's education system, compelling an abrupt transition from face-to-face instruction to emergency remote teaching. In the Special Region of Yogyakarta, this transition exposed critical gaps in teacher preparedness—particularly in digital literacy, adaptive pedagogy, and student engagement. Empirical fieldwork conducted in Bantul Regency revealed that only 9,5 %, of junior high school teachers demonstrated high proficiency in learning technologies, while 19 %, mainly older educators were unable to operate basic digital platforms. Compounding this challenge, 47,6 %, of teachers reported that their schools had not systematically planned professional development programs, and 42,9 % indicated a complete absence of supervisory follow-up during remote teaching.^(1,2,3,4,5) These findings underscore a systemic disconnect between policy intent and classroom reality in the post-pandemic educational landscape.

In response to these challenges, the Indonesian Ministry of Education introduced two flagship initiatives: the Zoning-Based Learning Competency Development Program (PKP) and the Teacher Leadership Program (PPGP). While theoretically aligned with national competence standards, both models suffered from fragmented execution.^(6,7,8,9,10,11) The PKP program, though grounded in a zoning approach to cascade Higher-Order Thinking Skills (HOTS)-oriented training, often failed to reach suburban and remote schools due to logistical constraints and insufficient digital infrastructure.^(12,13,14,15,16) Similarly, PPGP graduates—designated as activator teachers frequently lacked sustained moral or material support, limiting their capacity to serve as effective change agents.^(3,17,18,19,20) As a result, professional development remained uneven, top-down, and disconnected from the contextual realities of teachers in outer areas.

Teacher professional competence traditionally defined through pedagogical, personal, social, and professional dimensions (Permendiknas No. 16/2007) must now be reconceptualized considering post-pandemic demands.⁽²¹⁾ The new normal requires teachers not only to master subject matter but also to integrate digital tools, foster socio-emotional learning, design blended instructional strategies, and reflect continuously on practice. This expanded competence framework aligns with global expectations for 21st-century educators, yet local implementation in Yogyakarta remains hindered by weak coordination, inconsistent monitoring, and a lack of university-school collaboration. Without a systemic, locally grounded management model, efforts to recover from pandemic-induced learning loss will remain fragmented and unsustainable.

Management in education has traditionally been conceptualized through four core functions: planning, organizing, actuating, and controlling.⁽¹⁾ Terry⁽²²⁾ defines management as a process encompassing these functions to achieve organizational objectives through coordinated human effort. However, in the complex post-pandemic educational landscape marked by digital transformation, uneven access, and heightened pedagogical demands this classical framework proves insufficient. Millet⁽²³⁾ addresses this gap by introducing facilitating as a critical fifth function, emphasizing the mobilization of resources, expertise, and infrastructure to support implementation. Similarly, Siagian⁽²⁴⁾ underscores evaluating not as a terminal step but as an iterative mechanism for feedback and continuous improvement. Together, these six functions planning, organizing, facilitating, actuating, controlling, and evaluating form a comprehensive management cycle suitable for dynamic, context-sensitive teacher development.⁽²⁵⁾

Teacher professional competence, as articulated in Indonesia's Permendiknas No. 16/2007, comprises four interrelated dimensions: pedagogical, personal, social, and professional.⁽²¹⁾ Post-pandemic realities, however,

necessitate an expanded understanding that integrates digital literacy, socio-emotional responsiveness, and adaptive instructional design.⁽⁷⁾ Hussin identifies nine essential 21st-century competencies for teachers, including critical thinking, emotional intelligence, digital content creation, and collaborative leadership all aligned with the learning styles of Generation Z. UNESCO further frames digital competence as a cross-cutting enabler that encompasses technology literacy, knowledge deepening, and knowledge creation, positioning teachers not merely as users but as co-creators of digital pedagogy.

In Indonesia, two primary models have guided teacher professional development during and after the pandemic: the Zoning-Based Learning Competency Development Program (PKP) and the Teacher Leadership Program (PPGP). The PKP, launched in 2019, aimed to cascade Higher-Order Thinking Skills (HOTS)-oriented training through a zoning mechanism.⁽¹⁰⁾ Despite its theoretical rigor, field evaluations reveal systemic weaknesses: inconsistent implementation, weak technological proficiency among “core teachers,” excessive administrative burdens, and limited reach to suburban and remote areas.⁽¹¹⁾ The PPGP, initiated in 2020, sought to cultivate “activator teachers” as change agents. Yet, Riowati *et al.*⁽²⁶⁾ found that these teachers often lacked sustained moral or material support, struggled to mobilize senior colleagues due to hierarchical school cultures, and received minimal post-training supervision.

These limitations echo global concerns about the inefficiency of top-down, episodic professional development. Bautista *et al.* note that many national programs invest heavily in teacher training but yield minimal impact on classroom practice due to misalignment with local contexts, excessive procedural complexity, and lack of follow-up. In contrast, effective models emphasize collaboration, job-embedded learning, and sustained support—principles embodied in blended collaborative study groups (CSGs) and university-school partnerships.^(14,15) Lambirth *et al.* demonstrate that teacher-led action research, when supported by facilitation and peer collaboration, fosters reflective practice and pedagogical innovation. Similarly, Sumaryanta *et al.* highlight the potential of MGMP (Subject Teacher Working Groups) as platforms for collective inquiry, though their effectiveness is often undermined by weak leadership and inadequate resources—a gap this study directly addresses.⁽²⁷⁾

This study aims to develop and validate a novel conceptual management model for improving teachers’ professional competence in the post-pandemic era by examining the management models implemented during the pandemic in Yogyakarta and identifying their operational weaknesses. Grounded in empirical data from 70 teachers, principals, supervisors, and education officials, the proposed model integrates six management functions—planning, organizing, facilitating, actuating, controlling, and evaluating—and is operationalized through blended collaborative study groups. By anchoring innovation in local context and rigorous validation, this research offers a scalable pathway toward equitable, effective, and sustainable teacher development in Indonesia and similar settings.

METHOD

This research applied a mixed-methods research and development (R&D) approach adapted from the Borg and Gall model to systematically design, implement, and validate a post-pandemic management model for teacher professional development. The study was conducted from 2023 to 2025 across three junior high schools located in suburban Bantul Regency, Special Region of Yogyakarta—namely SMPN 1 Sedayu, SMPN 2 Sedayu, and SMPS Pangudi Luhur Sedayu. These schools were purposively selected to represent public-private variation and geographic diversity in access to professional development services.

The study population consisted of teachers, principals, supervisors, and district authorities involved in post-pandemic professional development. A total of 79 participants were included: 70 teachers with teaching experience ranging from 5 to more than 30 years, four principals, two school supervisors, and three education officials. In addition, eight expert validators—four academics in educational management and four practitioners from supervisory and MGMP leadership backgrounds—participated in instrument validation. Sampling employed purposive and snowball strategies to secure representation across teaching experience, roles, and digital proficiency levels.

The variables investigated included model effectiveness, efficiency, and practicality. Effectiveness referred to the clarity, completeness, and operational feasibility of the six management functions embedded in the model; efficiency referred to the time, cost, and workload implications for teachers; and practicality assessed the ease of use, flexibility, and acceptance by school stakeholders. Qualitative variables captured the lived experiences of teachers in applying the model, technology integration, and supervisory support structures.

Data were collected in three methodological stages. The preliminary study investigated pre-existing professional development management through semi-structured interviews with 42 teachers, observation of school-based forums, and analysis of policy and implementation documents related to PKP and PPGP programs. The second stage involved model construction by synthesizing grand theories of management with the empirical weaknesses identified. The model was then implemented and refined through three field trials involving 10, 20, and 30 teachers respectively.

Three structured rating instruments were developed to measure the model’s performance using a four-

point Likert scale (1 = Not Good, 4 = Very Good). The effectiveness instrument consisted of seven items, such as “Model components are clearly described and operationally applicable” and “The management cycle supports continuous improvement.” The efficiency instrument consisted of five items including “The model reduces teachers’ administrative burden” and “The time required for implementation is proportional to the benefits.” The practicality instrument consisted of six items, represented by statements such as “Teachers can flexibly apply the model across different school contexts” and “The model supports blended learning delivery.” Instrument content validation was performed by four independent experts, who reviewed item relevance, linguistic clarity, and construct representation. Minor wording refinements were made following expert recommendations, including aligning terminology with national competence standards and reducing ambiguity in rating anchors. The final instruments achieved high internal consistency with Cronbach’s α values ranging from 0,82 to 0,89. Using Lynn’s content validity index method, the instruments achieved a validity score of 3,81—surpassing the $\geq 3,20$ threshold indicating “very valid” classification.

During the large-scale trial, the model was practiced through blended collaborative study groups combining face-to-face workshops with biweekly online mentoring via Google Meet. For example, teachers collaboratively applied the “facilitating” function by designing digital teaching media and receiving real-time feedback from university facilitators. Similarly, the “controlling” function was enacted through weekly progress monitoring via a digital dashboard updated by school supervisors. These concrete implementation examples strengthened the model’s practicality evaluation and its alignment with real-world professional development needs.

Quantitative data were analyzed with IBM SPSS Statistics 20. Descriptive analysis was applied to summarize interpretability, feasibility, and participant acceptance scores. Pre- and post-implementation improvements were tested using paired-sample t-tests, supported by Kolmogorov-Smirnov normality and Levene’s homogeneity tests confirming the suitability of parametric statistics. Qualitative interview and observation data were coded using Miles and Huberman’s interactive model of data reduction, data display, and conclusion verification. Methodological triangulation across data sources and participant roles ensured interpretation credibility. Ethical clearance was granted by Yogyakarta State University, and all participants completed informed consent forms with assurances of confidentiality and voluntary participation.

RESULT

This study identified three core empirical findings. First, the management models implemented during the pandemic in the Special Region of Yogyakarta primarily the PKP and PPGP programs were formally structured around four classical management functions: planning, organizing, actuating, and evaluating. However, field investigations revealed severe implementation gaps. Notably, 47,6 % of teachers reported that school principals had not systematically planned professional development programs aligned with teacher needs or institutional goals. Similarly, 42,9 % of teachers indicated a complete absence of supervisory follow-up during remote teaching, signaling a breakdown in monitoring and support systems.

Second, three systemic weaknesses characterized the existing models. Technological integration remained superficial: only 9,5 % of teachers demonstrated high proficiency in using digital learning platforms, while 19 %—predominantly older educators could not operate basic digital tools. Moreover, equity gaps persisted, as PKP and PPGP activities were concentrated in urban centers, with minimal reach to suburban and remote schools due to logistical and infrastructural constraints.

In response, the researchers developed a six-function conceptual management model that expands the classical framework by incorporating facilitating and controlling as critical additional functions. The facilitating function institutionalizes sustainable support through university-school partnerships under the Tri Dharma framework, while the controlling function establishes continuous monitoring via school supervisors and digital dashboards. Implementation occurs through blended collaborative study groups (CSGs), combining face-to-face workshops with online mentoring to enhance flexibility and inclusivity.

Empirical validation across three field trials confirmed the model’s high performance. Quantitative results are summarized in table 1. All dimensions exceeded the 3,50 threshold in the large-scale trial, indicating high empirical validity. Paired-sample t-tests confirmed statistical significance (e.g., large-scale trial: $t(29) = -3,969$, $p = 0,001$), demonstrating that improvements were attributable to the model’s implementation.

Table 1. Effectiveness, Efficiency, and Practicality Scores Across Field Trials (Mean, 4-point scale)

Dimension	Trial 1 (n=10)	Trial 2 (n=20)	Large-Scale Trial (n=30)
Effectiveness	3,32	3,51	3,73
Efficiency	3,45	3,44	3,73
Practicality	3,52	3,71	3,67

Qualitative feedback further corroborated these results. Teachers and principals highlighted the flexibility of blended delivery, the accessibility of university-based facilitators, and the clarity of the six-function cycle as key strengths. The model's practical utility was particularly valued in suburban contexts, where time, cost, and geographic barriers had previously limited participation in professional development. A comparative analysis with prior models is presented in table 2. Collectively, the findings demonstrate that the developed model effectively addresses the weaknesses of prior approaches and offers a scalable, context-sensitive framework for post-pandemic teacher development in Yogyakarta and similar settings.

Table 2. Comparison of Management Models for Teacher Professional Development

Feature	PKP (2019)	PPGP (2020)	Develop model (2025)
Management Functions	Planning, Organizing Actuating, valuating	Planning, Organizing Actuating, valuating	Planning, Organizing, Facilitating, Actuating, Controlling, Evaluating
Delivery Mode	Face-to-face	Hybrid (70 % OJT)	Blended CSG
Support System	Central cascading	Limited post-train	University-school partnership
Monitoring	Weak	Minimal	Continuous (supervisory + digital)
Equity Reach	Urban-biased	Selective	Suburban-inclusive

DISCUSSION

The findings of this study illuminate both the limitations of existing teacher development frameworks in post-pandemic Yogyakarta and the transformative potential of a re-engineered management model grounded in empirical reality. Prior initiatives such as the Zoning-Based Learning Competency Development Program (PKP) and the Teacher Leadership Program (PPGP) were theoretically aligned with national competence standards yet faltered in practice due to fragmented implementation.^(28,29) Field data confirm that 47,6 % of schools lacked systematic planning for professional development, while 42,9 % of teachers reported zero supervisory feedback during remote teaching—a gap that directly undermined pedagogical continuity and teacher morale. These weaknesses are not merely procedural but structural, reflecting a top-down approach that prioritized policy compliance over contextual responsiveness.^(2,3)

The six-function management model developed in this study—comprising planning, organizing, facilitating, actuating, controlling, and evaluating—addresses these systemic shortcomings by integrating support and accountability into the core architecture of teacher development. Unlike the classical four-function models historically applied in Indonesian education management, this framework explicitly incorporates facilitating and controlling as dynamic, enabling functions. The facilitating function operationalizes sustainable resource mobilization through university-school partnerships under the Tri Dharma framework, thereby reducing dependence on costly external trainers and ensuring expert continuity.⁽⁵⁾ Meanwhile, the controlling function institutionalizes ongoing monitoring by school supervisors and digital platforms, transforming evaluation from a terminal compliance exercise into a formative feedback loop.⁽³⁰⁾ This dual emphasis on support and oversight aligns with global best practices that prioritize coherence, capacity building, and adaptive implementation.

Empirically, the model's high performance across three field trials—effectiveness (mean = 3,73), efficiency (mean = 3,73), and practicality (mean = 3,67) in the large-scale trial—validates its contextual appropriateness and operational feasibility. Particularly significant is its blended collaborative study group (CSG) design, which reconciles the need for face-to-face interaction with the flexibility of online mentoring. This hybrid format directly responds to the geographic and infrastructural barriers that historically excluded suburban and remote teachers from national programs.^(8,9) By allowing participation irrespective of location or schedule constraints, the model promotes equity without sacrificing quality—a critical advance in Indonesia's decentralized education landscape.^(31,32)

Moreover, the model's emphasis on school-based ownership counters the hierarchical dynamics that often stifle innovation in traditional PD programs. By positioning school principals, MGMP coordinators, and university lecturers as co-facilitators rather than top-down implementers, it fosters a culture of shared responsibility and collective inquiry. This shift resonates with Imants and Van Der Wal's notion of teacher agency, wherein professional development is not something done to teachers but co-constructed with them.^(33,34) The qualitative feedback from participants—who valued the model's flexibility, relevance, and peer-learning opportunities—further underscores this cultural alignment.

Nonetheless, limitations warrant acknowledgment. The study was confined to Bantul Regency, and findings may not generalize to more remote or urban contexts without adaptation. Additionally, while teacher self-assessment provides valuable insights, future research should triangulate with classroom observation and student learning outcomes to establish causal links between model implementation and pedagogical impact.

In conclusion, this study contributes a contextually grounded, empirically validated framework for post-pandemic teacher development that bridges policy intent and classroom reality. By embedding support, collaboration, and continuous improvement into a cyclical management system, it offers a scalable pathway toward equitable, effective, and sustainable professional growth not only in Yogyakarta but across similar Global South settings confronting post-crisis educational recovery.

CONCLUSION

This study set out to: (1) investigate the management models used to improve junior high school teachers' professional competence during the pandemic in Yogyakarta, (2) identify their operational weaknesses, and (3) develop and validate a new conceptual management model for the post-pandemic era. The findings revealed that existing models were limited by fragmented planning processes, insufficient technological integration, weak supervisory mechanisms, and low sustainability, indicating the need for a more comprehensive and context-responsive approach.

In response, this research produced a six-function management model—comprising planning, organizing, facilitating, actuating, controlling, and evaluating—designed to strengthen coordination, continuous support, and collaborative professional learning. Operationalized through blended collaborative study groups (CSGs) supported by university-school partnerships, the model provides a structured and sustainable framework that enables schools to improve teacher competence more equitably and effectively in varied geographic contexts.

The model's validation demonstrates its practical relevance and applicability for guiding post-pandemic teacher development policy and practice. Therefore, it is recommended as a strategic framework for educational authorities and school leaders seeking systemic improvement, especially in regions facing similar challenges. Future research should extend implementation across broader school networks and examine the model's long-term impact on classroom practices and student learning outcomes.

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CONFLICT OF INTEREST

Authors declare that there is no conflict of interest.

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