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Bridging Policy, Technology, and Teacher Competence: Digital Evaluation of the PPG Program through SPACE LMS at UIN Sunan Ampel Surabaya

Abd Rachman Assegaf[1] ✉, M. Yunus Abu Bakar[1], Muh. Syamsuddin[2]
[1]Universitas Islam Negeri Sunan Ampel Surabaya, Indonesia
[2]Pusat Riset Khazanah dan Peradaban, BRIN, Indonesia
Corresponding author: profassegaf@gmail.com

ABSTRACT

Purpose – This study aims to evaluate the implementation of the Teacher Professional Education (Pendidikan Profesi Guru – PPG) program at UIN Sunan Ampel Surabaya, which has adopted the Sistem Pembelajaran Agama Cara Elektronik (SPACE) as its Learning Management System (LMS). It seeks to analyze policy frameworks, delivery models, and participant experiences to identify strengths, weaknesses, and strategic opportunities for improving teacher professionalism in Indonesia.

Design/methods/approach – The research employed an evaluation design with a prescriptive (normative) analysis approach, combining empirical data with theoretical and policy review. Data were collected from 178 in-service PPG participants through documentation, semi-structured interviews, observation of LMS activities, and online questionnaires. Analysis followed the Miles and Huberman interactive model, encompassing data reduction, display, and conclusion drawing.

Findings – Results indicate that the integration of structured academic and administrative policies, Recognition of Prior Learning (RPL) for 24 of 36 credits, and targeted capacity-building through induction programs contributed to a high national pass rate in the Ujian Pengetahuan (UP). Participants favored the fully online format (92.2%) for its flexibility, cost efficiency, and work–study balance, though some suggested blended learning for practical teaching simulations. Challenges include heavy workload, program duration, and accessibility issues for teachers in remote areas. LMS SPACE proved effective for content delivery and assessment but requires enhanced preparatory strategies for high-stakes evaluations.

Research implications – The study highlights the need for a balanced hybrid model, aligning online efficiency with selective face-to-face engagement. Policy recommendations include workload redistribution, flexible scheduling, expanded access for non-permanent teachers, and stronger integration between PPG training and school or madrasah practices. These insights can inform national strategies for scaling and refining digital teacher professional development programs in Indonesia.

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1. Introduction

In recent years, the Teacher Professional Education Program (Pendidikan Profesi Guru—PPG) has emerged as a central policy instrument for enhancing teacher professionalism in Indonesia. Despite substantial investment and national coordination, the pass rate for first-time test takers in the 2022 Knowledge Test (Uji Pengetahuan—UP) was only 80.40%, leaving 18.60% of candidates unsuccessful (Kementerian Agama, 2023). Historical data show fluctuating outcomes, with the 2021 national pass rate for in-service PPG participants under the Ministry of Religious Affairs reaching 67.56%, surpassing

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the Ministry of Education and Culture in the same year (Kementerian Agama, 2023). These fluctuations indicate the need for systematic evaluation of all PPG processes, from candidate selection to instructional delivery (Kementerian Agama, 2023). Regional disparities, including participation from frontier, outermost, and disadvantaged areas, add further complexity to the problem (Kementerian Agama, 2023).

Disparities also appear in institutional performance among Lembaga Pendidik dan Tenaga Kependidikan (LPTK) hosting PPG. None of the Islamic State Universities (Universitas Islam Negeri—UIN) achieved a perfect pass rate in the 2022 UP, with top-performing institutions such as IAIN Salatiga (93.80%) and UIN Maulana Malik Ibrahim (92.79%) still leaving a proportion of candidates unsuccessful (UKMPPG, 2022). UIN Sunan Ampel Surabaya, a prominent Faculty of Tarbiyah and Teacher Training, ranked 21st with a 75.77% pass rate (UKMPPG, 2022). Low pass rates have implications for state budget efficiency, teacher competency readiness, and the effectiveness of learning management systems (UKMPPG, 2022). These outcomes underline the urgency of targeted, evidence-based interventions to improve program results (UKMPPG, 2022).

The COVID-19 pandemic, officially declared in Indonesia on 2 March 2020, accelerated the adoption of digital platforms for PPG delivery (ppg.siagapendis.com). The Sistem Pembelajaran Agama Cara Elektronik (SPACE) Learning Management System (LMS) became the primary infrastructure for delivering online modules, workshops, and assessments (ppg.siagapendis.com). This transition enabled program continuity but introduced challenges in digital pedagogy, accessibility, and platform optimization (Al Falah & Amirudin, 2022; Sutisna & Safitri, 2022). Similar patterns were reported in Indonesian Islamic higher education, where LMS use during the pandemic was associated with student satisfaction outcomes while persistent access constraints remained salient (Amrullah et al., 2024). While digitalization offers flexibility, reduced costs, and broader reach, it also exposes limitations in technical readiness, infrastructure, and instructional adaptation (Al Falah & Amirudin, 2022; Sutisna & Safitri, 2022). Evaluating the performance of SPACE is therefore essential for improving the quality and effectiveness of PPG (Firmansyah, 2022).

Research indicates that effective LMS use can enhance learning experiences, but its success depends on contextual adaptation and user capability (Budiana, 2021; Firmansyah, 2022). Studies on LMS implementation in PPG highlight its strengths in flexibility, accessibility, and collaborative engagement, alongside constraints in digital literacy and internet stability (Budiana, 2021; Firmansyah, 2022; Indrawan, 2019). Evaluations of SPADA LMS for PPG participants at IAIN Salatiga found it practical and effective in delivering pedagogical content (Saputro & Susilowati, 2019). In-service English language teachers participating in online PPG have shown positive perceptions of LMS integration, emphasizing the need for strong ICT support (Shalihah & Syafryadin, 2023). These findings underscore the necessity of aligning LMS design and support with the specific demands of the Indonesian PPG context (Saputro & Susilowati, 2019; Shalihah & Syafryadin, 2023).

From a regulatory standpoint, Law No. 14 of 2005 mandates that teachers possess professional certification, making PPG a critical pathway for competency enhancement (Kartowagiran, 2011; Mulyasa, 2007). Required competencies—pedagogical, professional, social, and personal—demand mastery of both subject matter and digital instructional tools (Daud & dkk., 2020; Rahmawati, 2019). Evidence shows that PPG participation improves curriculum understanding, pedagogical skills, and professional engagement (Daud & dkk., 2020; Zulfitri, 2019). However, participants' perceptions of PPG significantly influence their motivation, indicating that program design must address both cognitive and affective needs (Anggraeni & dkk., 2022; Kisrianto, 2018). These considerations are critical when integrating digital delivery into PPG frameworks (Anggraeni & dkk., 2022; Zulfitri, 2019).

The transition to fully online PPG has transformed instructor roles, requiring mastery of SPACE functionalities and adaptation of mentorship strategies (Kementerian Agama, 2022). LMS accessibility,

including via mobile devices, enhances participation and reduces costs compared to other digital platforms (Setiaji, 2022). However, persistent issues such as system errors, poor connectivity, and limited technical support hinder optimal implementation (Firmansyah, 2022). Global distance learning research reflects similar findings, where platform usefulness is often constrained by insufficient interactivity and limited human engagement (Ustati & Hassan, 2013). In Indonesia's PPG, a hybrid model that blends online efficiency with the depth of face-to-face pedagogy may offer a viable solution (Setiaji, 2022; Ustati & Hassan, 2013).

Program management quality also plays a significant role in digital-PPG success. Participant evaluations at the University of Palangka Raya rated PPG management as "very good," though continuous improvement was recommended (Azahari et al., 2022). LMS-based instruction has been shown to produce 77.8% medium and 22.2% high learning outcomes among PPG participants, demonstrating the platform's potential (Imamuddin et al., 2024). Nevertheless, accessibility and technology integration remain obstacles, particularly for pre-service participants in resource-limited areas (Wahid et al., 2024). These patterns indicate that technological solutions must be integrated with pedagogical strategies and institutional capacity building (Azahari et al., 2022; Imamuddin et al., 2024; Wahid et al., 2024). Alignment between technology and pedagogy is thus essential for maximizing PPG's impact (Imamuddin et al., 2024). This is consistent with evidence from higher education administration showing that leadership competence and achievement motivation significantly predict administrative staff performance, implying that LMS-enabled programs also depend on managerial and support-service capacity (Nugroho, 2024).

Given the strategic importance of PPG in national education reform and the reliance on LMS SPACE, comprehensive evaluation is necessary. This study examines the digital-PPG implementation at UIN Sunan Ampel Surabaya, focusing on SPACE functionalities, support structures, and integration with assessment systems (Saputro & Susilowati, 2019; Shalihah & Syafryadin, 2023). Participant experiences, including perceptions, challenges, and learning outcomes, are also analyzed to identify strengths and weaknesses (Imamuddin et al., 2024). The findings aim to produce actionable recommendations for enhancing program quality, scalability, and equity across diverse educational settings (Saputro & Susilowati, 2019; Wahid et al., 2024). Ultimately, the study seeks to contribute to a more coherent, effective, and sustainable digital-PPG model in Indonesia (Imamuddin et al., 2024; Wahid et al., 2024).

2. Methods

2.1. *Research Design and Approach*

This study employed an evaluation research design to review and assess the effectiveness of the Teacher Professional Education Program (*Pendidikan Profesi Guru* or PPG) implemented online through the *Learning Management System* (LMS) known as the *Sistem Pembelajaran Agama Cara Elektronik* (SPACE). The research applied a prescriptive **(**normative) analysis approach, which analyzes existing policies while proposing new norms or guidelines to address identified issues. This approach is grounded in a rationalistic paradigm, combining empirical analysis with theoretical and ethical considerations, thus not only assessing factual conditions but also formulating relevant policy recommendations.

2.2. *Research Subjects, Location, and Duration*

The research subjects consisted of 178 PPG participants in 2023 at the Teacher Training and Education Institution (*Lembaga Pendidikan Tenaga Kependidikan* – LPTK) of the State Islamic University (UIN) of Surabaya. Participants were selected purposively, based on their active

involvement in the online PPG program using LMS SPACE. The study was conducted at the Directorate of Teachers and Education Personnel (GTK) of the Ministry of Religious Affairs and at UIN Surabaya as the central PPG implementing institution. The research took place over six months, from March to August 2023, covering the stages of preparation, data collection, data analysis, and report writing.

2.3. *Data Collection Techniques and Instruments*

Data were collected using several techniques:

a. Documentation – to obtain data on policies, implementation guidelines, learning modules, as well as examination and evaluation results of the PPG program.
b. Interviews – conducted both online and offline with PPG administrators, lecturer assessors, helpdesk staff, and participants to gather in-depth information about the implementation of LMS SPACE.
c. Observation – including monitoring learning activities within the LMS, exam administration, and interactions between participants, instructors, and helpdesk staff.
d. Online questionnaires via Google Forms – containing items regarding participants' perceptions, experiences, challenges, and recommendations related to PPG implementation.

The instruments included a semi-structured interview guide, observation checklist, and Likert-scale questionnaire. Instrument validation was carried out through expert judgment to ensure the alignment of indicators with the research objectives.

2.4. *Data Analysis Techniques*

The collected data were analyzed using the interactive model of qualitative data analysis by Miles and Huberman, consisting of four stages:

a. Data Collection – integrating results from documentation, interviews, observations, and questionnaires.
b. Data Display – using tables, charts, and descriptive narratives to present the main findings.
c. Data Reduction – filtering, grouping, and categorizing the data based on research themes such as policy, implementation, challenges, and recommendations.
d. Conclusion Drawing and Verification – identifying patterns, relationships, and policy implications.

This approach enabled an in-depth analysis of the effectiveness of LMS SPACE, the supporting and inhibiting factors, and the potential implementation of a *hybrid-PPG* model as an alternative solution.

3. Results

3.1. *Policy and Implementation of the Teacher Professional Education (PPG) Program at UIN Surabaya*

The implementation of the 2022–2023 *Pendidikan Profesi Guru Dalam Jabatan* (PPG Daljab) at UIN Surabaya was guided by a set of academic and administrative policies designed to ensure program quality and relevance. The academic policies included a total study load of 36 credits, with 24 credits recognized through the *Recognition of Prior Learning* (RPL) system, the adoption of a fully online learning mode, a higher passing grade threshold through an academic selection test, and the enhancement of lecturer and mentor teacher quality through *Training of Trainers* (ToT) facilitated by the Directorate General of Teachers and Education Personnel (GTK),

Ministry of Education and Culture. The program was delivered in two phases, which allowed for better scheduling and resource management. On the administrative side, funding was sourced from both the state budget (APBN) and regional budgets (APBD), with separate administrative mechanisms depending on the funding source. These combined policies aimed to enhance the competence of Islamic Education teachers while addressing the logistical realities of large-scale professional training.

A notable distinction exists between the PPG programs managed by the Ministry of Religious Affairs (Kemenag) and the Ministry of Education and Culture (Kemendikbud). Kemenag's PPG spans 96 days, significantly longer than Kemendikbud's 58-day format, due to the broader cluster of Islamic Education subjects taught in madrasahs compared to general subjects in public schools. The curricular paradigm also differs: Kemendikbud follows the *Merdeka Curriculum* model directly, while Kemenag adapts and integrates *Merdeka Belajar* principles into its PPG structure. Funding sources also vary, with Kemendikbud drawing from both central and regional government budgets, whereas Kemenag relies primarily on the central state budget. These differences shape the operational approaches and instructional emphases of the two programs, influencing participant workload, pedagogical focus, and institutional alignment.

Table 1. Implementation of the PPG Program at UIN Surabaya

No.	Description	UIN Surabaya
1	Refreshment Program	Refreshment is mandatory for all committee members, lecturers, and mentor teachers, featuring speakers from the central office and held at a hotel near the campus.
2	PPG Implementation Strategy	The committee establishes a dedicated help desk for each PPG participant class, ready to assist with all matters related to the LMS.
3	Try Out	Try outs are conducted for PPG participants, but the results are not discussed with the lecturers.
4	Exam Questions	Formative and Performance Test questions in the LMS are created by lecturers, with varying numbers of questions and no verification from the PPG committee.
5	Exam Preparation	PPG participants attend offline sessions for induction activities to prepare for the national-scale Performance and Knowledge Tests.
6	Teaching Materials	Teaching materials, refreshment content, and modules are provided in PDF format and shared via WhatsApp groups.

Table 1 summarizes the core strategies, activities, and support mechanisms that define the delivery of the program. The table highlights key elements such as mandatory *refreshment* sessions for lecturers and mentor teachers, the establishment of dedicated *help desks* for each participant class, the administration of *try-out* sessions, and the provision of induction programs for exam preparation. It also outlines assessment design processes, where formative tests and performance exams are prepared by lecturers, and teaching materials are distributed digitally in PDF format through WhatsApp groups. These structured elements form the operational backbone of the program, ensuring that both academic content and administrative processes are aligned toward improving teacher professionalism.

The 2022–2023 PPG at UIN Surabaya also introduced innovations intended to address post-pandemic educational challenges. The integration of the *Merdeka Curriculum* into the PPG design aimed to foster more flexible, student-centered pedagogies in Islamic Education. An induction program held in January 2023, involving 11 specialist lecturers, provided targeted pedagogical and professional training, including predictive test simulations aligned with the national *Uji Kompetensi Mahasiswa PPG* (UKMPPG) guidelines. This intervention not only enhanced participants' readiness but also contributed to UIN Surabaya achieving the highest national passing rate in PPG for the first time. Such outcomes underscore the strategic value of

blending structured policy frameworks with targeted capacity-building initiatives to produce highly competent, certified Islamic Education teachers.

3.2. *Evaluation of Learning through the LMS SPACE*

The Learning Management System (LMS) known as SPACE served as the central platform for delivering and assessing all components of the PPG program at UIN Surabaya. The evaluation framework encompassed multiple assessment types, including the pretest, resume and reflection, teaching material analysis, formative tests, material analysis, end-of-module tests, the *Uji Kinerja* (UKIN), and the *Ujian Pengetahuan* (UP). Each task carried a specific weight in the final grade, ranging from 10 to 35 percent, reflecting its importance in measuring professional competencies. The structure of these assessments ensured a balance between formative and summative evaluation, aligning with national standards for teacher certification. This system also promoted transparency, as participants could monitor their scores in real time through the LMS dashboard.

Participant feedback revealed varying perceptions of task difficulty across the assessment components. For example, the pretest was often viewed as challenging, though many participants still achieved relatively high scores. Resume and reflection tasks were considered moderately difficult, largely due to the requirement for higher-order thinking and independent synthesis of learning materials. Teaching material analysis emerged as one of the more demanding tasks, given its requirement for contextualization and peer discussion across multiple learning modules. Formative tests, despite their lower weighting, were often perceived as more difficult than the pretest due to the inclusion of complex, higher-order thinking questions. These differences in perceived difficulty indicate that the LMS SPACE not only facilitated content delivery but also exposed learners to rigorous evaluative experiences that tested multiple dimensions of professional competence.

Figure 1. Student Perceptions of the Ujian Pengetahuan (UP)

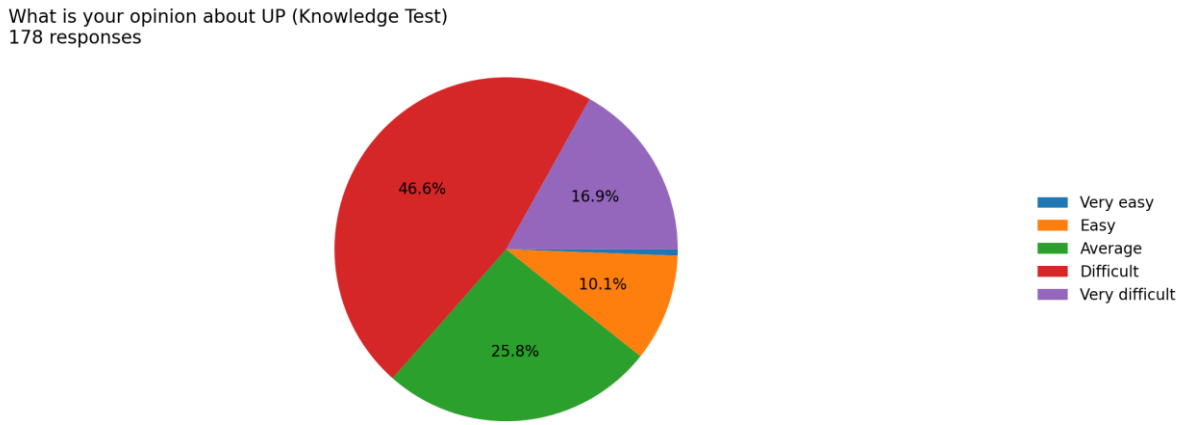

Figure 1 illustrates that the UP was regarded as the most challenging component of the entire PPG assessment system. A combined 63.5 percent of participants rated the UP as difficult or very difficult, compared to only 10.7 percent who found it easy or very easy. The high-stakes nature of the UP, coupled with its centralized design and emphasis on broad content mastery, likely contributed to these perceptions. Despite the difficulty, the UP played a decisive role in determining certification outcomes, meaning that both preparation and institutional support were critical for success. The figure underscores the necessity of targeted preparatory strategies for high-impact assessments within professional education programs.

The implications of these findings suggest that while the LMS SPACE provided a structured and transparent platform for assessment, certain components—especially the UP—demanded enhanced preparation and support mechanisms. This could include more extensive use of predictive test simulations, guided revision sessions, and increased access to feedback from instructors. The alignment between task weighting and perceived difficulty should also be reviewed to ensure a balanced workload and equitable assessment design. Ultimately, the evaluation process through the LMS SPACE demonstrated both the strengths and the pressure points of a fully digital professional education program, offering valuable insights for future iterations of the PPG model.

3.3. *Preference for the PPG Implementation Model*

The evaluation of participant preferences regarding the mode of PPG delivery revealed significant differences in perceptions between fully offline, fully online, and blended (integrated) formats. Many participants expressed reservations about returning to a fully offline model, citing increased costs, travel demands, and disruption to their teaching duties in schools and madrasahs. Conversely, the fully online model was seen as more adaptable to professional commitments, allowing participants to engage in PPG activities without sacrificing their primary teaching responsibilities. These findings indicate that the choice of delivery mode is not only a matter of pedagogical effectiveness but also of practicality and alignment with the working realities of in-service teachers.

Figure 2. Student Perceptions of Fully Online PPG

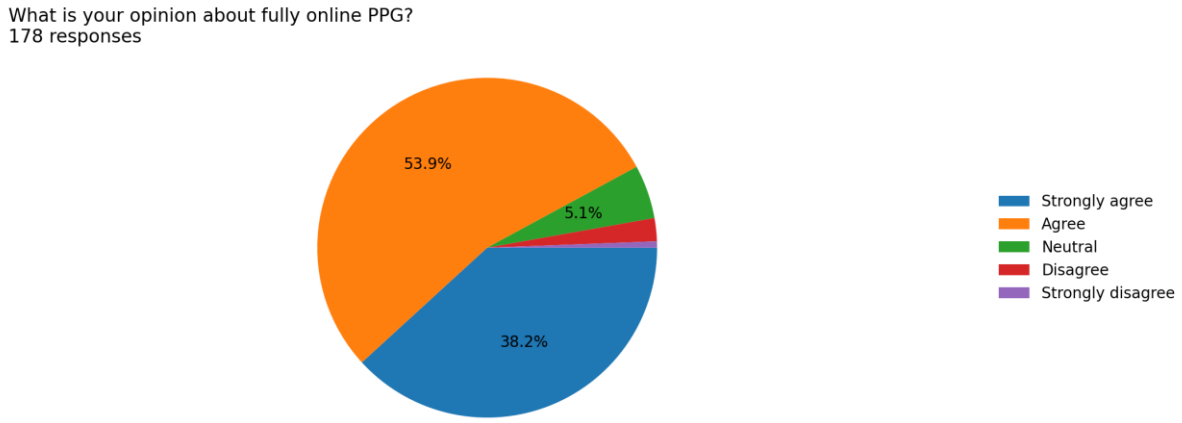

Figure 2 shows that a decisive majority of participants favored the fully online format. A combined 92.2 percent either strongly agreed or agreed with continuing PPG entirely online, while only 2.8 percent expressed disagreement. The predominant reasons for this preference included flexibility in managing time, reduced financial burden, and the ability to remain with family while completing program requirements. Participants also reported that online delivery enhanced their digital literacy, a skill increasingly vital for 21st-century teaching. The figure reinforces the notion that technological integration in professional teacher education is not merely a stopgap measure for pandemic conditions but a sustainable approach for future program design.

While the fully online model received the strongest endorsement, several participants still advocated for a blended format in the future, particularly to address the limitations of virtual-only engagement. They noted that in-person sessions could better facilitate classroom simulations, peer collaboration, and the modeling of teaching behaviors—elements that are challenging to

replicate online. A blended model could also mitigate the sense of isolation reported by some participants during extended online study. Therefore, the findings suggest that although fully online delivery is currently the preferred choice, strategic incorporation of face-to-face components could enhance program effectiveness without undermining its flexibility.

3.4. *Synchronizing the PPG with School and Madrasah Needs*

One of the central objectives of the PPG program at UIN Surabaya was to ensure that the professional development of teachers directly benefited the schools and madrasahs where they worked. The program sought to enhance teacher creativity, diversify instructional methods, and strengthen professional responsibility in daily teaching practices. Participants reported that the skills and knowledge gained during PPG, particularly in integrating digital media and active learning strategies, had a tangible impact on their classroom delivery. This alignment between professional training and institutional needs underscores the importance of designing teacher education programs that are not only theoretically sound but also practically relevant to local educational contexts.

Figure 3. Digital Integration and Synchronization Model of the PPG

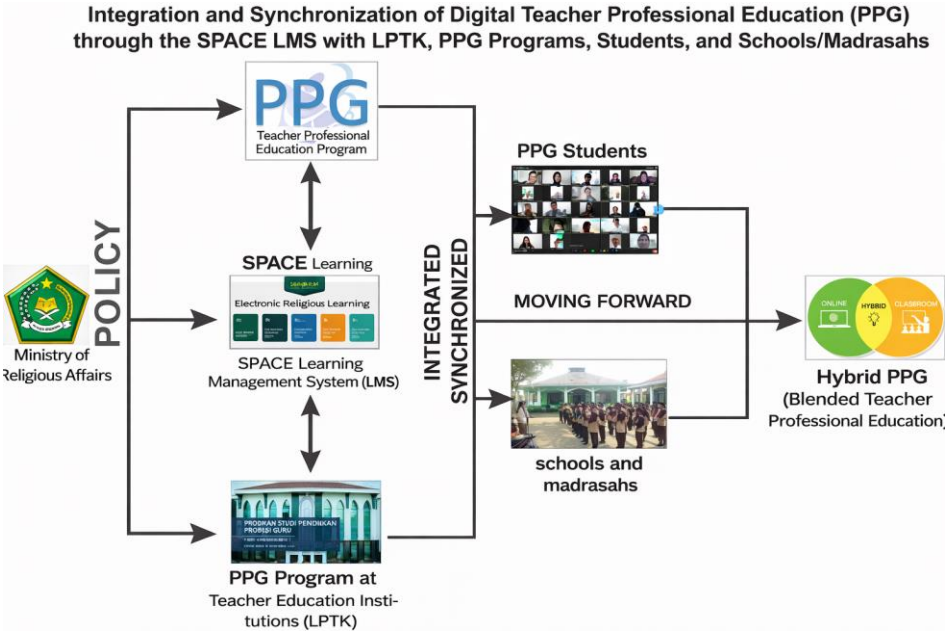

Figure 3 illustrates the systemic linkages between the Ministry of Religious Affairs (Kemenag), Teacher Training Institutions (LPTKs) such as UIN Surabaya, the participating teachers, and their respective schools or madrasahs. The model shows that while policy directives and funding are provided at the governmental level, the practical execution occurs through LPTKs, with direct implications for classroom practice. However, the diagram also highlights that full integration has yet to be achieved, as some program elements remain disconnected from the specific operational needs of schools and madrasahs. This partial alignment suggests a need for deeper collaboration among stakeholders to ensure that training outcomes are consistently reinforced in real-world teaching environments.

The relevance of the *Merdeka Curriculum* within this synchronization process was also noted by participants, particularly in fostering student engagement and encouraging more varied, higher-quality lesson delivery. Even for teachers in early childhood education, exposure to modules

such as *Aqidah Akhlaq*—though not part of their immediate teaching responsibilities—broadened their pedagogical repertoire. Such cross-level and cross-subject enrichment supports a more holistic professional identity for teachers, which can contribute to improved institutional accreditation and student performance. Therefore, ensuring a stronger and more dynamic integration between PPG content and school/madrasah practice remains a strategic priority for future iterations of the program.

3.5. *Challenges and Recommendations for PPG Development*

Despite its achievements, the PPG program at UIN Surabaya faced several notable challenges that limited its overall effectiveness. Participants frequently cited the heavy workload associated with assignments, particularly when combined with their existing teaching responsibilities and family obligations. The program's duration was also perceived as lengthy, leading to fatigue and difficulties in maintaining consistent engagement. Geographic considerations, such as the distance between participants' residences and the LPTK, created additional logistical and financial burdens, especially for those required to attend on-site activities. These issues collectively highlight the importance of aligning program demands with the realities of in-service teachers' professional and personal contexts.

Participants offered constructive suggestions aimed at improving the design and accessibility of the PPG. One prominent recommendation was to integrate the PPG directly into undergraduate teacher education programs as a replacement for the now-defunct *Akta Mengajar*, thereby streamlining the path to professional certification. Another suggestion involved expanding opportunities for *guru wiyata* (non-permanent teachers) to participate, enabling them to improve their qualifications and enhance their employment prospects. Adjusting the program schedule to better match working hours, as well as introducing more flexible assignment deadlines, were also proposed to reduce stress and improve completion rates. These recommendations reflect a desire for a more inclusive and adaptable professional development framework.

From a policy perspective, enhancing the PPG program will require coordinated action between the Ministry of Religious Affairs, LPTKs, and local education authorities. Strategies could include revisiting workload distribution, optimizing the blend between online and face-to-face components, and implementing zonal placement systems to minimize travel demands. Financial support mechanisms for economically disadvantaged participants should also be considered to promote equity in access. Ultimately, the sustainability and impact of the PPG depend on its ability to balance rigorous competency development with the practical constraints faced by the teaching workforce. By addressing these challenges, future iterations of the program can achieve broader participation, higher retention rates, and greater alignment with the evolving demands of Indonesia's education sector.

4. Discussion

The implementation of the 2022–2023 in-service Teacher Professional Education (PPG Daljab) at UIN Surabaya shows a structured integration of academic and administrative policies that aim to improve the competence of Islamic Education teachers. The adoption of Recognition of Prior Learning (RPL) for 24 of 36 credits, the use of a fully online delivery format, and the requirement for lecturer and mentor teacher certification through Training of Trainers (ToT) align with national objectives to professionalize teaching (Kartowagiran, 2011; Mulyasa, 2007). These measures reflect global developments in teacher education where competency-based frameworks and digital learning ecosystems increasingly support professional growth (Saputro & Susilowati, 2019). UIN Surabaya's differentiated strategies, including a two-phase delivery and targeted induction programs, illustrate how

policy flexibility can address institutional capacity and participant workload. Compared to other LPTKs, this approach appears to maintain quality control while ensuring scalability, positioning UIN Surabaya as a potential reference for adaptive program design in religious education.

The comparison between the PPG programs managed by the Ministry of Religious Affairs (Kemenag) and the Ministry of Education and Culture (Kemendikbud) highlights the influence of governance structures on curriculum, program duration, and funding. Kemenag's 96-day program, which is longer than Kemendikbud's 58-day model, responds to the broader range of Islamic Education subjects taught in madrasahs (Daud & dkk., 2020; Rahmawati, 2019). This extended period, combined with a curriculum adapted from the Merdeka Curriculum, offers richer pedagogical exposure but also imposes heavier demands on participants. Funding differences also shape program flexibility, with Kemenag relying more on central government allocations. These findings are consistent with studies showing that program outcomes in teacher education often depend on institutional autonomy, stable funding, and curriculum relevance (Anggraeni & dkk., 2022).

The evaluation of the Learning Management System (LMS) SPACE as the main platform for PPG delivery highlights its role as both a content management system and an assessment tool. The distribution of assessment weight from pretests to end-of-module evaluations aligns with best practices in online professional learning, where formative and summative assessments are integrated to guide mastery (Imamuddin et al., 2024; Shalihah & Syafryadin, 2023). Perception data indicate that certain components, especially the Ujian Pengetahuan (UP), are particularly challenging, with 63.5 percent of participants rating it as difficult or very difficult. This gap between assessment design and participant readiness reflects concerns in other contexts of digital teacher training where high-stakes testing can reduce engagement if not paired with adequate preparation (Wahid et al., 2024). Enhancing preparatory strategies such as predictive simulations and targeted feedback could improve both performance and participant confidence.

Participants' strong preference for a fully online PPG format reflects the global shift in professional learning towards flexible and technology-enabled models. The finding that 92.2 percent favored online delivery due to reduced costs, time efficiency, and the ability to balance work with study aligns with literature on digital professional development, which emphasizes accessibility and work-life integration as key factors (Al Falah & Amirudin, 2022; Sutisna & Safitri, 2022). This preference also aligns with post-pandemic trends in higher education where hybrid and online formats have become standard practice (Ustati & Hassan, 2013). Nevertheless, several participants suggested blended formats to allow for collaborative and practical teaching simulations, which are more effective in face-to-face settings (Suarcaya et al., 2023). This suggests that future PPG models could combine online flexibility with selective in-person sessions to enhance instructional quality.

The alignment between PPG training content and the practical needs of schools and madrasahs is a central strength of the program. Participants reported direct benefits in their classrooms, such as improved creativity, varied instructional methods, and greater professional accountability. These outcomes align with the Merdeka Curriculum's aim to promote student-centered learning and foster pedagogical innovation (Firmansyah, 2022). However, the integration model in Figure 3 indicates that collaboration among Kemenag, LPTKs, teachers, and schools is still partial. Similar to findings in other studies, without strong reinforcement of training outcomes at the workplace, the gains from professional learning risk being underutilized (Budiana, 2021; Indrawan, 2019).

The challenges identified in the program, which include workload intensity, extended duration, and logistical barriers, reflect structural tensions common in in-service professional development. Heavy assignments combined with teaching and family obligations can lead to reduced engagement, a pattern also reported in other PPG contexts nationally (Azahari et al., 2022). Geographic constraints and travel costs for required in-person activities further limit accessibility for teachers in remote areas.

Studies show that equitable access to professional certification requires differentiated support systems such as zonal placement policies and targeted financial assistance (Wahid et al., 2024). Addressing these issues is crucial to ensure that certification opportunities remain accessible to all eligible teachers.

From a strategic perspective, the findings position UIN Surabaya's PPG as both an example of adaptive program implementation and a platform for policy refinement in digital professional education. The combination of structured policy, LMS-based delivery, and participant-focused scheduling aligns with many success criteria identified in the literature on sustainable professional development (Imamuddin et al., 2024; Saputro & Susilowati, 2019). Maintaining these achievements will require continuous adjustments in curriculum content, assessment design, and delivery formats to match evolving teacher needs and policy contexts. The program's recent success in achieving one of the highest national passing rates shows that targeted interventions, such as induction programs and predictive testing, can significantly improve outcomes. As the education sector adapts to post-pandemic realities, the UIN Surabaya model offers valuable insights into how religious higher education institutions can integrate policy innovation and digital platforms to enhance teacher professionalism.

5. Conclusion

The findings of this study demonstrate that the digital-based Teacher Professional Education (PPG) program at UIN Sunan Ampel Surabaya has effectively integrated structured academic and administrative policies with the capabilities of the SPACE Learning Management System (LMS) to enhance teacher competence. The program's adoption of Recognition of Prior Learning (RPL), a fully online delivery model, and targeted capacity-building initiatives such as induction programs have contributed to high participant performance, including a national-leading pass rate in the Ujian Pengetahuan (UP). Participant feedback indicates that the online format offers flexibility, cost savings, and greater work and study balance, making it a sustainable option for in-service teacher development. However, the results also highlight the need for further optimization in high-stakes assessments, improved preparatory mechanisms, and deeper alignment between PPG training and school or madrasah practice. These insights suggest that a balanced model that combines online efficiency with selective face-to-face engagement could further strengthen both learning outcomes and professional readiness.

Despite these achievements, the study identifies persistent challenges that require strategic attention. Workload intensity, program duration, and logistical barriers, particularly for teachers in remote or resource-limited areas, limit equitable participation and program completion. Addressing these constraints will require coordinated policy adjustments, including workload redistribution, flexible scheduling, expanded access for non-permanent teachers, and targeted financial assistance. Strengthening synchronization between the Ministry of Religious Affairs, LPTKs, and local educational institutions will be essential to ensure that PPG outcomes are consistently reinforced in professional practice. Overall, the UIN Surabaya PPG model offers valuable lessons for scaling and refining digital teacher education in Indonesia, underscoring the importance of integrating technological infrastructure with pedagogical relevance, institutional capacity building, and inclusive access policies.

Declarations

Author contribution statement

Abd. Rachman Assegaf initiated the research topic, formulated the core research questions, and coordinated the overall manuscript preparation. Yunus Abu Bakar contributed to the development of the theoretical framework and provided guidance on the research methodology. Muh. Syamsuddin supported the data collection process and assisted in managing research implementation and logistics, and also contributed to the data analysis, interpretation, and synthesis of the research findings. All

authors contributed to refining the discussion, strengthening the conceptual coherence, and reviewing and approving the final version of the manuscript.

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Data availability statement

The datasets generated during and analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of Interest's statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Additional information

Correspondence and requests for materials should be addressed to profassegaf@gmail@com

ORCID

Abd. Rachman Assegaf https://orcid.org/0000-0001-9948-1059
Yunus Abu Bakar https://orcid.org/0000-0002-9311-2444
Muh. Syamsuddin https://orcid.org/0009-0007-2397-2397

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