

The Role of Continuing Professional Development (CPD) in Enhancing Teaching Quality: A Systematic Literature Review

Syahrudin*

Islamic Educational
Managemen, Universitas Islam
Negeri Mataram, Indonesia

Yudin Citriadin

Islamic Educational Managemen,
Universitas Islam Negeri Mataram,
Indonesia

Hazat Usman Mashwani

Non-Formal Education, Sayed
Jamaluddin Afghani University,
Afghanistan

Article Info

Article history:

Received: Juni 15, 2026

Revised: Juni 17, 2026

Accepted: Juni 29, 2026

Keywords:

*Professional Development;
Teacher Training; Teaching
Quality.*

Abstract

Penelitian ini bertujuan untuk menganalisis peran Pengembangan Profesional Berkelanjutan (Continuing Professional Development/CPD) dalam meningkatkan kualitas pembelajaran guru di sekolah. Penelitian menggunakan pendekatan Systematic Literature Review (SLR) dengan menelaah artikel-artikel yang terindeks pada basis data Scopus, DOAJ, dan Google Scholar yang dipublikasikan pada periode 2018–2024. Hasil kajian menunjukkan bahwa program CPD secara konsisten berkontribusi terhadap peningkatan kompetensi pedagogik guru, penguatan praktik pembelajaran, serta pada beberapa penelitian berdampak positif terhadap hasil belajar peserta didik, termasuk pengembangan kreativitas. Namun demikian, efektivitas implementasi CPD masih menghadapi berbagai kendala, seperti keterbatasan sumber daya, rendahnya keterlibatan peserta, resistensi terhadap perubahan, serta ketimpangan akses terhadap pendidikan berkualitas, terutama di wilayah dengan sumber daya yang terbatas. Temuan ini menegaskan pentingnya pengembangan model CPD yang lebih inklusif, berkelanjutan, dan responsif terhadap konteks lokal guna memastikan pemerataan peningkatan kualitas pembelajaran secara efektif dan berkeadilan.

Abstract

This study aims to analyze the role of Continuing Professional Development (CPD) in improving teaching quality among school teachers. The study employed a Systematic Literature Review (SLR) approach using articles from Scopus, DOAJ, and Google Scholar published between 2018 and 2024. The findings indicate that CPD programs consistently contribute to the improvement of teachers' pedagogical competencies, instructional practices, and, in some studies, student-related outcomes such as creativity. However, the effectiveness of CPD is still constrained by limited resources, low participant engagement, resistance to change, and unequal access to quality education, particularly in under-resourced areas. These findings highlight the need for more inclusive, sustainable, and context-sensitive CPD models to ensure equitable improvements in teaching quality.

To cite this article: Syahrudin, Citriadin, Y., & Mashwani, H. U. (2026). *The role of continuing professional development (CPD) in enhancing teaching quality: A systematic literature review.* *Jurnal Ilmiah Tarbiyah Umat*, 58-67

* Corresponding author:

Syahrudin, Universitas Islam Negeri Mataram, Indonesia

syahrudin.ntb@gmail.com

INTRODUCTION

Teacher training is a systematic process designed to enhance teachers' knowledge, skills, and professional competencies in education. This training encompasses mastery of subject matter, the application of effective pedagogical methods, and adaptation to educational technologies (Baskara et al., 2024). The importance of teacher training lies in its role in supporting continuous professional development, improving pedagogical abilities, and strengthening technological competencies (Musbaing, 2024). Moreover, training provides opportunities for teachers to explore innovative approaches to teaching, enabling them to deliver creative and relevant strategies that meet students' diverse needs. Therefore, teacher training serves as a cornerstone for improving education quality and addressing the dynamic challenges of the educational landscape.

Teacher professional development is an ongoing process aimed at enhancing skills, knowledge, and teaching practices to meet the demands of dynamic education systems (Mea, 2024). This process involves various activities, including training, workshops, seminars, and collaboration among educators, designed to enrich teachers' abilities in addressing changes in student needs, curricula, and technology. In the context of modern education, professional development holds significant relevance, particularly amidst rapid technological advancements and the growing demand for innovative teaching approaches (Dwianto & Munir, 2023). Teachers are expected to master technology-based teaching methods and effectively integrate digital tools into the learning process. Additionally, professional development supports teachers in continually adapting their teaching methods to accommodate the diverse needs of students, thereby fostering more inclusive and effective learning experiences (Wahyuni & Haryanti, 2024). Thus, professional development is not only an investment in the individual quality of teachers but also a strategic effort to ensure educational success in addressing global challenges.

The quality of teaching reflects a teacher's ability to implement effective, innovative practices that positively impact student learning outcomes (Tanggulungan & Sihotang, 2023). Key dimensions of teaching quality include pedagogical effectiveness, such as designing relevant lessons, managing classrooms efficiently, and employing methods tailored to student needs (Patras et al., 2019). Innovation also plays a crucial role, encompassing the integration of technology and new approaches to create meaningful learning experiences (Yusuf et al., 2023). High-quality teaching drives student motivation and achievement, making it a cornerstone of educational success (Saptono, 2016). Strategic training and professional development are essential to enhancing teachers' competencies and addressing the challenges of modern education.

The first study analyzes the influence of teacher competence on the performance of teachers at MTs in Sumedang District, focusing on four competence dimensions: pedagogical, personality, social, and professional. Using a quantitative approach with a survey method, data were collected through questionnaires and analyzed using parametric statistics, t-tests, and F-tests. The results show that teacher competence, both partially and simultaneously, significantly affects teacher performance, with an impact rate of 100% (Rohman, 2020). The second study aims to improve digital literacy among teachers at Pesantren Nurul Yaqin in Tasikmalaya District through training in Learning Content Management System (LCMS) management. The training was conducted for 27 teachers, and the evaluation used a digital literacy test based on the Quiziz application consisting of 15 questions, which resulted in a digital literacy score increase of 0.85 (Suhendi et al., 2024). Additionally, challenges faced by professional teachers in Indonesia were revealed, with a low percentage of teachers deemed qualified to teach: only 21.07% of SDN teachers, 28.94% of private SD teachers, 54.12% of SMPN teachers, 60.99% of private SMP teachers, and 65.29% of SMAN teachers (Jailani, 2014). Further research is needed to integrate professional learning communities to address these limitations and strengthen the impact of teacher training on student learning outcomes.

Research in the field of education reveals significant findings that are relevant for improving the quality of teaching and student learning outcomes. A study by Rahman & Haryanto (2014) demonstrated that the use of flashcard media was effective in improving early reading skills among first-grade students at SDN Bajayau Tengah 2, with the average score increasing from 59.7% (fair) before the intervention, to 71.3% (good) in the first cycle, and reaching 90.7% (very good) in the second cycle. Meanwhile, research by Eliyani (2018) found that vocational internship experience

significantly influenced the work readiness of 12th-grade accounting students at SMK in Semarang, with an impact of 16.6%, and self-efficacy as a moderating variable strengthened this effect with a significance level of 0.017. Additionally, Pardede (2021) showed a significant relationship between the pedagogical competence of Christian Religious Education (PAK) teachers and PAK learning outcomes of 8th-grade students at SMP Negeri 2 Percut Sei Tuan in the odd semester of the 2020/2021 academic year, where the calculated t-value of 24.50 was greater than the table value of 0.349, and the calculated t-value of 5.29 exceeded the table value of 1.69. Furthermore, Damanik (2019) found that teacher competence had a significant relationship with teacher performance at SMP Negeri in Percut Sei Tuan, with a correlation coefficient of 0.603 at a significance level of alpha 0.05, indicating that higher teacher competence leads to better teacher performance. However, challenges such as resource allocation, program design, and participant engagement still need attention to ensure the effectiveness of programs and meet the evolving needs of educators and students.

This study indicates that the Basic Level Training Program (Diklat Berjenjang Tingkat Dasar) is effective in improving the pedagogical competence of early childhood education (PAUD) educators in Cimahi, with regression analysis results of $Y=79,900+0,665X$, a correlation coefficient of 0.512, and a t-value of 6.136, which is greater than the t-table value of 1.658, indicating a significant effect (Nuraeni, 2017). Additionally, the implementation of Culturally Responsive Teaching (CRT) successfully improved mathematics learning completion for second-grade students at SD Negeri Dukuh Kupang III/490 Surabaya, from 32% in the pre-cycle to 88% in the second cycle (Masfiastutik et al., 2024). Training in the use of Google Drive also enhanced students' understanding of cloud technology and data backup procedures, with 95% of students understanding the procedure and 90.8% being able to use it correctly, although challenges related to internet connectivity and advanced features still need to be addressed (Dinar & Darso 2024). While strong evidence shows a relationship between teacher quality and student success, external factors such as socio-economic status and school resources also play a crucial role in shaping student learning outcomes. Therefore, a multifaceted approach is needed to comprehensively improve education.

Although numerous studies have reported the positive effects of teacher training and professional development on teacher competence, instructional practices, and student learning outcomes, the existing evidence remains fragmented across different educational contexts and program types. Most previous studies have focused on evaluating specific training interventions or localized professional development initiatives, with limited efforts to synthesize the overall evidence regarding the effectiveness, challenges, and sustainability of Continuing Professional Development (CPD) programs. Furthermore, previous research has rarely examined how contextual factors, such as resource availability, participant engagement, institutional support, and access disparities, influence the success of CPD initiatives. Therefore, a comprehensive synthesis of recent empirical findings is needed to provide a broader understanding of the role of CPD in improving teaching quality.

This study contributes to the existing literature by providing a systematic synthesis of empirical studies published between 2018 and 2024 concerning the role of Continuing Professional Development (CPD) in improving teaching quality. Unlike previous studies that focused on specific training programs or local contexts, this review integrates findings from diverse educational settings to identify common patterns of effectiveness, implementation challenges, and strategic recommendations for future CPD programs. The study also highlights contextual factors that influence CPD outcomes, thereby offering practical and policy-relevant insights for educational stakeholders. Based on the identified research gap, this study aims to systematically review empirical evidence regarding the role of Continuing Professional Development (CPD) in improving teaching quality. Specifically, the study seeks to: (1) identify the forms of CPD implemented in educational settings; (2) examine the impact of CPD on teachers' competencies and instructional practices; (3) analyze the challenges affecting the effectiveness of CPD programs; and (4) formulate recommendations for developing more inclusive and sustainable professional development models.

METHOD

This study employed a Systematic Literature Review (SLR) approach to analyze the role of Continuing Professional Development (CPD) in improving teaching quality. The review process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure a transparent and systematic selection of relevant studies. The literature search was conducted using three academic databases: Scopus, Directory of Open Access Journals (DOAJ), and Google Scholar. The search covered articles published between 2018 and 2024. The search strategy combined several keywords and Boolean operators, including: (“Continuing Professional Development” OR “Teacher Professional Development” OR “Teacher Training”) AND (“Teaching Quality” OR “Instructional Quality” OR “Teacher Competence”).

The inclusion criteria were: (1) empirical research articles published in peer-reviewed journals; (2) studies focusing on teacher training, Continuing Professional Development (CPD), or professional learning activities; (3) articles discussing teaching quality, teacher competence, or instructional improvement; (4) articles published in English or Indonesian; and (5) publications between 2018 and 2024. The exclusion criteria included: (1) conference papers, books, dissertations, and policy reports; (2) articles without empirical findings; (3) duplicate publications; and (4) studies not directly related to teacher professional development or teaching quality. The article selection process consisted of four stages: identification, screening, eligibility assessment, and final inclusion. Initially, all records retrieved from the databases were compiled and screened for duplication. Subsequently, titles and abstracts were reviewed to assess relevance to the research objectives. Articles that met the initial criteria were then subjected to full-text review before final inclusion in the analysis.

To ensure the quality of the selected studies, each article was evaluated based on relevance to the research topic, methodological clarity, adequacy of data analysis, and consistency between research objectives and findings. Only studies that met these quality criteria were retained for the final review. Data extraction was conducted using a structured review matrix that recorded information on authors, publication year, research objectives, methodology, sample characteristics, key findings, and reported challenges. The extracted data were analyzed using thematic analysis. The analysis involved four stages: (1) familiarization with the data, (2) coding of key findings, (3) identification and categorization of recurring themes, and (4) synthesis and interpretation of the themes related to CPD implementation, its impact on teaching quality, and challenges affecting its effectiveness.

RESULTS AND DISCUSSION

RESULTS

The relevant research findings from the information search provide important insights into the focus and objectives of this study. Various aspects have been elaborated in detail, requiring a thorough explanation. These aspects include: (1) Teacher Training and Professional Development Applied in Schools; (2) The Impact of Teacher Training and Professional Development on Teaching Quality; (3) Challenges in Implementing Teacher Training and Professional Development. Therefore, an overall comprehensive overview is presented in Table 1.

Table 1. Orientation and Introduction to Research Findings Based on Evaluation Standards

No	Field or Focus	Authors in the Same Field	Research Insights or Variables
1	Teacher Training and Professional Development	Khairiyah et al. (2019), Judijanto (2024), Uzorka et al. (2024), Sastromiharjo et al. (2024)	The effectiveness of teacher competency training in enhancing understanding of students with special needs, digital literacy, as well as improving teaching quality and student engagement.
2	Education and Curriculum	Sastromiharjo et al. (2024)	Improving teacher competency through training in curriculum module development and the

3	Infrastructure, Educational Gaps, and Therapy	Shakira et al. (2024), Widana (2020), Beaumier et al. (2024), Schuster et al. (2019)	implementation of the Merdeka Curriculum in junior high schools. The limitations of infrastructure and access to education in underdeveloped areas affect governance and the quality of learning. Additionally, occupational therapy and cancer treatment face external challenges that hinder their implementation.
---	---	--	--

The table categorizes various research findings related to teacher training and professional development, education and curriculum, as well as infrastructure and educational gaps, highlighting the focus and insights of each field. In the area of teacher training and professional development, research shows that teacher competency training is effective in enhancing understanding of students with special needs, digital literacy, and teaching quality, which can increase student engagement. Additionally, training on curriculum module development and the implementation of the Merdeka Curriculum has also proven effective in improving teachers' pedagogical competencies. On the other hand, research related to infrastructure and educational gaps in underdeveloped areas reveals that limited access to quality education hinders governance and the quality of learning, with significant impacts on democratic participation and social welfare. The research also touches on occupational therapy and cancer treatment, showing that external factors such as regulatory constraints and market dynamics remain barriers to the implementation of effective therapeutic strategies. Overall, while training and interventions in these areas show great potential for improving the quality of education and services, challenges related to resources, access, and institutional support still need to be addressed to optimize the outcomes achieved.

DISCUSSION

1. *Teacher Training and Professional Development Implemented in Schools*

This study aims to measure the effectiveness of teacher competency training in improving understanding of children with special needs in inclusive schools in Tanjung Balai Karimun, using a pretest-posttest experimental design. The results showed a significant increase in teachers' understanding, with the average pretest score (O1) of 14.71 increasing to 20.42 on the posttest (O2) and a p-value of 0.000, indicating the training's effectiveness (Khairiyah et al., 2019). Rresearch Judijanto (2024) demonstrated a significant positive correlation between digital literacy and perceived teaching quality, with $r = 0.60$ and $p < 0.001$, highlighting the importance of digital literacy. Nurbaiti (2021) found at SMPN 26 Depok that In-House Training (IHT) improved teachers' ICT competencies, with 94.9% of teachers reporting enhanced skills, 90% contributing to the creation of educational videos, and the development of a YouTube channel featuring 157 videos. However, challenges such as limited resources and participant engagement hindered the training's effectiveness.

The teacher training on lesson module development for Indonesian Language teachers at junior high schools in Pangandaran on August 24–25, 2024, enhanced understanding of the Merdeka Curriculum through lectures, discussions, and hands-on practice. Evaluation results indicated a significant improvement in pre-test scores (60%) to post-test scores (85%), demonstrating the training's effectiveness in enhancing teachers' pedagogical capacity to implement dynamic and relevant education (Sastromiharjo et al., 2024). Research by Firdaus et al. (2024) developed an electronic learning module to foster student creativity at SMAN 9 Malang using R&D methods with the ADDIE model. Trial results showed the module's effectiveness in increasing student creativity, with a significance value of 0.000 ($p < 0.05$), making the module viable and effective in supporting creativity enhancement through mobile application development.

A cross-study comparison reveals several consistent patterns. First, CPD programs that combine practical activities, collaborative learning, and technology integration tend to produce stronger improvements in teacher competence than traditional lecture-based approaches. Second, studies conducted in different educational settings consistently report positive effects on

pedagogical competence, digital literacy, and instructional quality. However, the magnitude of improvement varies depending on institutional support, resource availability, and participant engagement. These findings suggest that the effectiveness of CPD is highly context-dependent and cannot be explained solely by the quality of the training content itself.

2. The Impact of Training and Professional Development on Teacher Teaching Quality

This study analyzes the effectiveness of the Teacher Professional Education and Training Program (PLPG) in improving teacher competencies, using secondary data from the 2012 Teacher Competency Test (UKG) scores and the 2013 National Written Examination (UTN). The analysis results show an increase in teacher competency after attending PLPG, with the average 2012 UKG score for elementary school teachers increasing from 39.82 to 47.62 after PLPG, while the score for junior high school teachers remained at 52.44. However, the final results did not meet the minimum passing standard of 70.0 (Sabon, 2018). Additionally, research by Nada et al., (2023) demonstrated a significant improvement in the creativity of children aged 5–6 years through STEAM-based learning, with the percentage increasing from 55.83% in the first cycle to 81.38% in the second cycle. While STEAM-based learning proved successful, challenges such as limited access to resources and varying levels of institutional support hindered the effectiveness of CPD programs. This highlights the need for more equitable and sustainable CPD opportunities.

Training and professional development (CPD) have been proven to enhance teaching quality by improving instructional strategies, teacher beliefs, and student engagement and performance. For instance, 71% of teachers reported improved instructional quality, and 61% noted enhancements in teaching methods after in-service training, which also led to better student achievement (Uzorka et al., 2024). Research by Syaflin (2022) developed interactive multimedia for science learning at SD Negeri 34 Palembang, which was found to be valid, practical, and effective in improving the learning outcomes of fifth-grade students. Validation of material, media, and design aspects showed good results, with one-to-one testing receiving excellent responses and field testing yielding a score of 81.22, categorized as moderate. However, challenges such as resource limitations and resistance to change can hinder program effectiveness, requiring solutions to maximize the benefits of training.

Training and professional development (CPD) have a significant impact on teacher competence and teaching quality. The results show that well-designed training programs, such as PLPG and in-service training, can improve teachers' instructional competencies, although some outcomes have yet to meet expected standards (e.g., PLPG with a minimum passing standard of 70.0). Additionally, innovative learning approaches such as STEAM-based education enhance children's creativity, highlighting the importance of integrating new methods into teaching. The development of interactive media further underscores the necessity of technology in supporting the teaching and learning process. Despite the generally positive impact of CPD, several challenges require attention. First, the improvement in teacher competencies remains uneven, as seen in the stagnation of junior high school teachers' scores in PLPG. Second, the success of STEAM-based learning indicates a reliance on equitable resource availability and institutional support. Third, while in-service training has successfully enhanced teaching quality, it still faces obstacles such as resistance to change and resource limitations. To address these challenges, a more holistic approach is needed, including policy support to ensure equal access to CPD, strengthening institutional capacity, and adaptive strategies to overcome teachers' resistance to innovation.

Although most studies report positive impacts of CPD on teaching quality, several inconsistencies remain. While some studies demonstrate substantial improvements in instructional practices and student outcomes, others indicate only moderate gains that do not fully meet expected competency standards. This variation suggests that CPD effectiveness is influenced by contextual factors such as school leadership, access to professional learning resources, and teachers' readiness to adopt new practices. Furthermore, few studies have examined the long-term sustainability of CPD outcomes, indicating an important area for future research.

3. Challenges in the Implementation of Teacher Training and Professional Development

This study examines the impact of infrastructure and education disparities on governance and democracy in West Papua, showing that limited access to infrastructure and education results in poor public services, social welfare, and democratic participation. The Gross Enrollment Rate

(GER) for primary education in West Papua is only 38% to 34%, far below the national average, and the literacy rate is only 89%. Geographical factors, limited transportation, and socio-economic gaps exacerbate these conditions. The study concludes that good governance is essential for improving sustainable development in underdeveloped regions (Shakira et al., 2024). On the other hand, research by Widana (2020) shows that digital literacy significantly affects teachers' ability to develop assessments based on Higher Order Thinking Skills (HOTS), with an F value of 60.594 and a significance of 0.000. The influence of digital literacy on teachers' ability is 13.2%, while 86.8% is influenced by other factors, and the study recommends further research to identify other contributing variables. Meanwhile, in cancer treatment, the CAR-T cell therapy tisagenlecleucel in patients with resistant or relapsed large B-cell lymphoma showed an overall response rate (ORR) of 52%, with 40% of patients achieving a complete response and 12% a partial response. After 12 months, the relapse-free survival (RFS) rate was estimated at 65%, with 79% in patients who achieved a complete response. The most common side effects included cytokine release syndrome (22%), neurological events (12%), and infections (20%).

Research shows that infrastructure and education disparities in West Papua affect the quality of public services, social welfare, and democratic participation. Limited access to education triggers socio-economic inequalities and low participation in democracy. Furthermore, digital literacy plays a key role in the development of HOTS assessments by teachers, although its contribution is only 13.2%. In occupational therapy, CBT and work-oriented interventions are effective in helping 80% of participants return to work, but challenges remain in addressing individual responses. Cancer treatment using CAR-T therapy is also promising, although side effects, such as cytokine release syndrome, need to be managed.

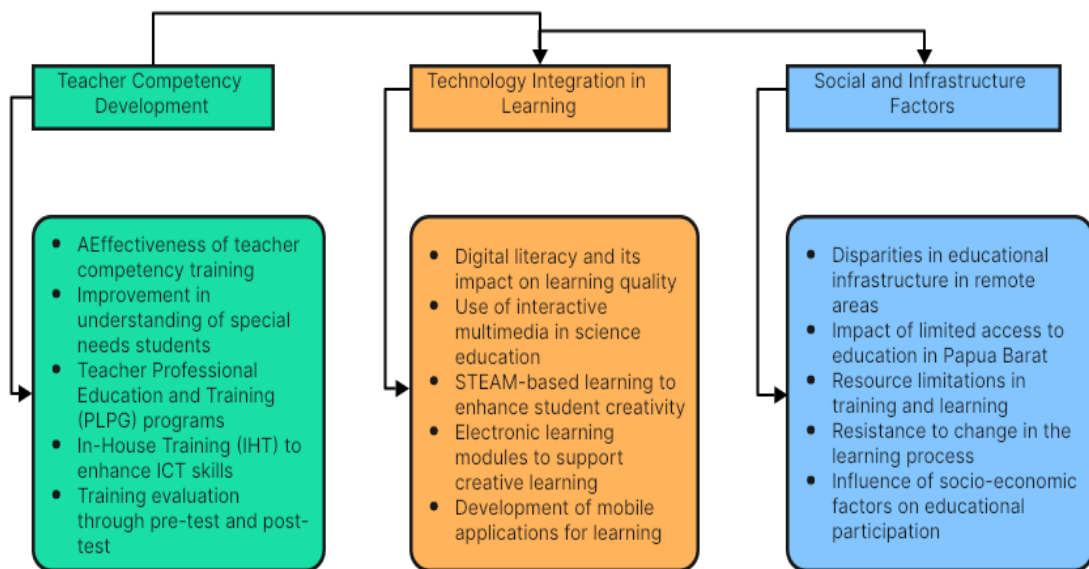


Figure 1. illustrates the research variables present in these studies.

The studies discussed emphasize the importance of teacher competency development through training programs such as the Teacher Professional Education and Training (PLPG) and In-House Training (IHT), which are effective in enhancing teachers' understanding, including topics on special needs students and the implementation of the Merdeka Curriculum (Sejatiningrum, 2019). These trainings also focus on improving teachers' Information and Communication Technology (ICT) skills, enabling them to integrate technology into teaching. Additionally, digital literacy plays a crucial role in improving the quality of education, particularly in teaching Higher Order Thinking Skills (HOTS) and interactive multimedia (Baskoro & Umar, 2023). STEAM-based learning has also proven to enhance student creativity, although challenges such as limited resources and infrastructure remain. Social and infrastructure factors, such as the disparities in Papua Barat, limit access to education and impact governance. Overall, teacher competency development, technology integration, and attention to socio-economic infrastructure are key pillars in improving the quality of education.

Despite the growing body of evidence supporting the effectiveness of CPD, several research gaps remain. First, relatively few studies investigate the long-term impact of CPD on teaching quality and student achievement. Second, limited attention has been given to the influence of contextual variables such as school culture, leadership support, and policy frameworks. Third, evidence from under-resourced and geographically remote educational settings remains insufficient. Future studies should therefore explore sustainable CPD models that address contextual challenges while ensuring equitable access to professional learning opportunities.

CONCLUSION

Based on the reviewed studies, Continuing Professional Development (CPD) programs play a significant role in enhancing teacher competencies, instructional practices, and overall teaching quality. The evidence consistently demonstrates that CPD contributes positively to teachers' pedagogical knowledge, digital literacy, and classroom effectiveness. However, the review also reveals that the effectiveness of CPD programs varies considerably across educational contexts. While some studies report substantial improvements in teacher competence and instructional quality, others indicate only moderate outcomes due to differences in institutional support, resource availability, technological infrastructure, and participant engagement. The synthesis further indicates that the success of CPD cannot be attributed solely to the training content itself. Instead, contextual factors such as school leadership, organizational support, access to professional learning resources, and teachers' readiness to adopt innovative practices significantly influence program effectiveness. These findings highlight an important research gap regarding the mechanisms through which contextual conditions shape CPD outcomes across diverse educational environments.

Another important gap identified in the literature is the limited evidence regarding the long-term sustainability of CPD impacts on teaching quality and student learning outcomes. Most existing studies focus on short-term improvements in teacher competence, while longitudinal evaluations examining sustained instructional change remain scarce. Furthermore, evidence from under-resourced and geographically remote educational settings is still limited, restricting the generalizability of current findings. Future research should move beyond evaluating training outcomes and focus on developing and testing context-sensitive CPD models that integrate institutional support, digital learning infrastructure, collaborative professional learning communities, and teacher engagement strategies. Specifically, future studies could employ longitudinal and mixed-method designs to examine how these factors interact in sustaining improvements in teaching quality over time and across different educational contexts.

REFERENCES

- Andoyo Sastromiharjo, Isah Cahyani, Asep Hidayatullah, Wulan Handayani, R. F. (2024). Optimalisasi Kompetensi Pedagogis Guru Melalui Pelatihan Penyusunan Modul Ajar dalam Kerangka Kurikulum Merdeka di Pangandaran. *Abdimas Galuh Jurnal Pengabdian Kepada Masyarakat*, 6(2), 2390-2399. <https://jurnal.unigal.ac.id/abdimasgaluh/article/view/16098>
- Baskara, A., & Sutarni, N. (2024). Kompetensi Pedagogik Guru SMA di Indonesia: Sebuah Systematic Literature Review. *Didaktika: Jurnal Kependidikan*, 13(3), 3481-3496. <https://www.jurnaldidaktika.org/contents/article/view/772>
- Baskoro, D. A., Ahsan, J., & Umar, A. T. (2023). Transformasi peran guru di era digital: Studi kasus di perguruan nurul fadhilah, percut sei tuan, deli serdang. *Jurnal Sustainable*, 6(1), 224-236. <http://jurnal.lp2msasbabel.ac.id/index.php/sus/article/view/3664>
- Budi Rahman, H. (2014). Peningkatan Keterampilan Membaca Permulaan Melalui Media Flashcard Pada Siswa Kelas I Sdn Bajayau Tengah 2. *Jurnal Prima Edukasia*, 2(2), 127-137. <https://journal.uny.ac.id/index.php/jpe/index>
- Damanik, R. (2019). Hubungan Kompetensi Guru Dengan Kinerja Guru. *Jurnal Serunai Administrasi Pendidikan*, 8(2), 1-8. <https://mail.ejournal.stkipbudidaya.ac.id/index.php/jc/article/view/170>

- Dwianto, A., & Munir, H. (2023). Kepemimpinan Transformasional Dalam Manajemen Kurikulum Dan Implikasinya Terhadap Pengembangan Sekolah. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, 6(3), 4385-4393. <https://journal.universitaspahlawan.ac.id/index.php/jrpp/article/view/30947>
- Eliyani, C. (2018). Peran Efikasi Diri Sebagai Variable Moderating Dari Pengaruh Pengalaman Praktik Kerja Industri Terhadap Kesiapan Kerja. *Jurnal Mandiri: Ilmu Pengetahuan, Seni, dan Teknologi*, 2(1), 23-41. <https://jurnalmandiri.com/index.php/mandiri/article/view/30>
- Firdaus1, R., Heru Wahyu Herwanto2, R. D. J., Maskuri4, M. N., Heny, Ratnasari5, D., Hofifah6, & Afiko Ilham Akbar Maulana7. (2024). Pengembangan Modul Pembelajaran Elektronik Informatika Materi Pengembangan Aplikasi Mobile untuk Meningkatkan Kreativitas Siswa. *Edukatif: Jurnal Ilmu Pendidikan*, 6(6), 6426-6434. <https://edukatif.org/index.php/edukatif/index>
- Herni Yuniarti Suhendi, Endang Surahman, Eko Sujarwanto, Ifa Rifatul Mahmudah, R. A. (2024). Pelatihan Pengelolaan Learning Content Management System Sebagai Upaya Penguatan Literasi Digital Guru Di Lingkungan Sekolah Dan Pesantren. *JMM (Jurnal Masyarakat Mandiri)*, 8(6), 6066-6075. <https://journal.ummat.ac.id/index.php/jmm/article/view/27417>
- Jailani, M. S. (2014). Guru Profesional dan Tantangan Dunia Pendidikan. *urnal Al-Ta'lim*, 21(1), 1-9. <https://journal.tarbiyahainib.ac.id/index.php/attalim/article/view/66>
- Judijanto, L. (2024). Analisis Pengaruh Tingkat Literasi Digital Guru dan Siswa terhadap Kualitas Pembelajaran di Era Digital di Indonesia. *Sanskara Pendidikan dan Pengajaran*, 2(2), 50-60. <https://sj.eastasouth-institute.com/index.php/spp/article/view/391>
- Khairiyah, K. Y., Lestari, T., Dianasari, E. L., & Wisma, N. (2019). Pelatihan Kompetensi Guru Sekolah Inklusif Dalam Pemahaman Anak Berkebutuhan Khusus Di Kabupaten Karimun. *Jurnal Pendidikan MINDA*, 1(1), 61-69. <http://ejournal.universitaskarimun.ac.id/index.php/mindafkip/article/view/20>
- Lenny Nuraeni, 2Arifah A. Riyanto. (2017). Efektivitas Diklat Berjenjang Tingkat Dasar Terhadap Peningkatan Kompetensi Pedagogik Pendidik Paud (Studi Deskriptif Pada Pendidik Paud Di Kota Cimahi). *Jurnal Ilmiah UPT P2M STKIP Siliwangi*, 4(1), 21-29. <http://e-journal.stkipsiliwangi.ac.id/index.php/p2m/article/view/388>
- Mea, F. (2024). Peningkatan efektivitas pembelajaran melalui kreativitas dan inovasi guru dalam menciptakan kelas yang dinamis. *Inculco Journal of Christian Education*, 4(3), 252-275. <http://e-journal.stakanakbangsa.ac.id/index.php/ijce/article/view/190>
- Muhammad Yusuf, Dwi Julianingsih, & Tarisya Ramadhani. (2023). Transformasi Pendidikan Digital 5.0 melalui Integrasi Inovasi Ilmu Pengetahuan dan Teknologi. *Jurnal MENTARI: Manajemen, Pendidikan dan Teknologi Informasi*. <https://doi.org/10.33050/mentari.v2i1.328>
- MuhammadTopanDinar1*, D. (2024). Pelatihan Cloud Computing menggunakan Google Drive sebagai Software as a Service (SaaS) untuk Mendukung Backup Data Tugas Sekolah. *Smart Humanity: Jurnal Pengabdian Masyarakat*, 1(3), 150-160. <https://ejournal.smart-scienti.com/index.php/Smart-Humanity/article/view/98/49>
- Musbaing, M. (2024). Kompetensi guru PAI di abad 21: Tantangan dan peluang dalam pendidikan berbasis teknologi. *Jurnal Pendidikan Refleksi*, 13(2), 315-324. <https://p3i.my.id/index.php/refleksi/article/view/369>
- Nada, P. A. Q., Hasibuan, R., & Salamun, S. (2023). Meningkatkan Kreativitas melalui Pembelajaran Steam pada Anak Usia 5-6 Tahun di TK Negeri Pembina Kota Mojokerto. *Journal on Education*, 6(1), 1715-1723. <https://www.jonedu.org/index.php/joe/article/view/3141>
- Nurbaiti, F. (2021). Peningkatan Kompetensi Guru Dalam Pembuatan Video Pembelajaran Melalui In House Training(Iht) Di Smp Negeri 26 Depok. *Jurnal Pendidikan Indonesia*, 2(3), 375-386. <https://japendi.publikasiindonesia.id/index.php/japendi/article/view/113>
- Pardede, M. (2021). Hubungan Kompetensi Pedagogik Guru Pak Dengan Hasil Belajar Pak Siswa Kelas Viii Smp Negeri 2 Percut Sei Tuan Semester Ganjil T.A 2020/2021. *Jurnal Pendidikan Religius*, 3(2), 10-20. <http://jurnal.darmaagung.ac.id/index.php/jurnalreligi/article/view/1090>
- Patras, Y. E., Iqbal, A., Papat, P., & Rahman, Y. (2019). Meningkatkan Kualitas Pendidikan Melalui Kebijakan Manajemen Berbasis Sekolah Dan Tantangannya. *JURNAL MANAJEMEN PENDIDIKAN*. <https://doi.org/10.33751/jmp.v7i2.1329>

- Robitaille-Beaumier, E. L., Lachance, J. P., Larivière, N., & Corbière, M. (2024). Strategies used by Occupational Therapists to overcome return-to-work obstacles perceived by workers with common mental disorders. *British Journal of Occupational Therapy*. <https://doi.org/10.1177/03080226241229911>
- Rohman, H. (2020). Pengaruh Kompetensi Guru Terhadap Kinerja Guru. *JurnalMADINASIKAMajemen dan Keguruan*, 1(2), 92~102. <https://ejournal.unma.ac.id/index.php/madinasika/article/view/481/274>
- Sabon, S. S. (2018). Efektivitas Pelatihan Guru Melalui Pendidikan Dan Latihan Profesi Guru. *Jurnal Penelitian Kebijakan Pendidikan*, 11(3), 159-182. <https://jurnalpuslitjakdikbud.kemdikbud.go.id/index.php/litjak/article/view/210>
- Saptono, Y. J. (2016). Motivasi dan keberhasilan belajar siswa. *REGULA FIDEI: Jurnal Pendidikan Agama Kristen*, 1(1), 181-204. <http://christianeducation.id/e-journal/index.php/regulafidei/article/view/9>
- Schuster, S. J., Bishop, M. R., Tam, C. S., Waller, E. K., Borchmann, P., McGuirk, J. P., ... & Maziarz, R. T. (2019). Tisagenlecleucel in adult relapsed or refractory diffuse large B-cell lymphoma. *New England Journal of Medicine*, 380(1), 45-56. <https://www.nejm.org/doi/full/10.1056/nejmoa1804980>
- Sejatiningrum, E. T. (2019). Sistem Pembinaan Profesionalisme Guru Agama Islam di Indonesia dan Malaysia. *Al-Idarah: Jurnal Kependidikan Islam*, 9(2), 290-301. <https://ejournal.radenintan.ac.id/index.php/idaroh/article/view/5313>
- Shakira1*, B. O., Ramadhani2, N. A., Salma3, Z. H., Ardhana, & Azis4, U. (2024). Analisis Infrastruktur Jalan dan Pendidikan sebagai Tantangan Demokrasi dan Tata Kelola di Provinsi Papua Barat. *Jurnal Kajian Ilmu Sosial, Politik dan Hukum*, 1(4), 218-237. <https://journal.appihi.or.id/index.php/Terang>
- Sri Masfiastutik1*, Anna Roosyanti2, R. S. (2024). Penerapan Pendekatan CRT pada Materi Pecahan untuk Meningkatkan Hasil Belajar Siswa Kelas II SD. *Journal of Science and Education Research*, 3(2), 72-80. <https://jurnal.insanmulia.or.id/index.php/jser/article/view/134/70>
- Syaflin, S. L. (2022). Pengembangan Multimedia Interaktif Berbasis Macromedia Flash Pada Materi Ipa Sekolah Dasar. *Jurnal Cakrawala Pendas*, 8(4), 1516-1525. <https://www.ejournal.unma.ac.id/index.php/cp/article/view/3003>
- Tanggulungan, L., & Sihotang, H. (2023). Coaching Model Tirta dalam Supervisi Akademik: Strategi Inovatif untuk Meningkatkan Kualitas Pembelajaran di Sekolah. *Jurnal Pendidikan Tambusai*, 7(3), 31399-31407. <http://repository.uki.ac.id/id/eprint/13643>
- Uzorka, A., Kalabuki, K., & Odebisi, O. A. (2024). The effectiveness of in-service teacher training programs in enhancing teaching quality and student achievement. *Forum for Education Studies*, 2(3), 1465-1465. <https://ojs.acad-pub.com/index.php/FES/article/view/1465>
- Wahyuni, S., & Haryanti, N. (2024). Optimalisasi kompetensi guru dalam pengembangan pembelajaran berdiferensiasi berbasis media digital. *Wahana Dedikasi: Jurnal PkM Ilmu Kependidikan*, 7(1), 142-154. <https://jurnal.univpgri-palembang.ac.id/index.php/dedikasi/article/view/15974>
- Widana, I. W. (2020). The effect of digital literacy on the ability of teachers to develop HOTS-based assessment. *In Journal of Physics: Conference Series*, 1503(1), 1-9. doi:10.1088/1742-6596/1503/1/012045