Re-Evaluating Teacher Professional Development for Blended Learning

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Abstract
This qualitative ethnographic study investigates the effectiveness of Teacher Professional Development (TPD) programs for blended learning in the context of Jordanian English language teachers. Drawing on semi-structured interviews with 42 educators, the study explores how TPD programs influence pedagogical practices and technological integration, as well as the challenges teachers face in adopting blended learning. Reflexive thematic analysis revealed four key themes: the digital divide among teachers, a disconnect between theoretical instruction and practical application, insufficient post-training support, and limited evaluation mechanisms. Teachers' perceptions varied significantly depending on their prior digital competencies and the structure of the programs. While some programs were viewed as effective—particularly those offering hands-on and project-based learning—others were critiqued for lacking clarity, alignment with pedagogical goals, and sustained follow-up. The study underscores the need for differentiated, inclusive, and contextually responsive TPD programs that align with teachers' professional realities. Findings offer practical implications for policy, training design, and the future scalability of blended learning strategies.
Keywords: Blended Learning, TPD Programs for Blended Learning, Online TPD Programs, Face-Face TPD Programs, Educational Technology, Training

Introduction
As new technologies become essential constituents of the modern classroom, a new era of more independent and sustainable learning imposes itself. Therefore, teachers need to obtain the necessary updates and skills needed to improve the whole educational process. In turn, the nature of TPD programs requires fundamental changes that consider the developments of the educational process (Khalayleh et al., 2020) to provide teachers with knowledge, expertise, methods, and new perspectives.

English language teachers within the Jordanian educational context need more competency in implementing blended learning lessons or integrating technology properly

within their educational practices although they were exposed to TPD programs for blended learning. This situation reflects that the assumed positive impact of these TPD programs on English language teachers' performance still needs to be fulfilled. Bazbaz & Obiedat (2019) emphasized that these TPD programs do not help English Language teachers to be prepared for the changing nature of their jobs in terms of integrating technology and digital learning tools and strategies.

Teacher Professional development (TPD) programs for blended learning are recognized as essential learning activities for improving the quality of education by enhancing teachers' content knowledge and pedagogical skills Quint (2011). In the context of modern education, where technology has become an integral part of the classroom environment, the nature of TPD programs must evolve to address the demands of a more independent and sustainable learning environment (Ag-Ahmad, Mohamed, & Bakar, 2022).

The concept of TPD programs has been defined in various ways, reflecting the evolving nature of education and the increasing emphasis on technology integration. However, the National Staff Development Council (NSDC) provides a comprehensive definition, describing TPD programs as "a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement" (NSDC, 2009, p. 12). This definition highlights three key aspects of effective TPD programs: comprehensiveness, sustainability, and intensiveness. Comprehensiveness involves addressing the needs of teachers, administrators, learners, schools, and curricula. Sustainability refers to the provision of both short-term and long-term training, often delivered on-site. Intensiveness focuses on addressing specific needs within a defined timeframe, typically spanning a school year (Hirsh, 2009). The NSDC definition also sets a quality parameter by emphasizing the improvement of effectiveness among those participating in TPD programs.

As technology becomes increasingly central to modern education, TPD programs must incorporate frameworks that address the adoption of blended learning as a teaching strategy. One such model is the Technological, Pedagogical, and Content Knowledge (TPACK) framework, introduced by Mishra and Koehler (2009). The TPACK model builds on Shulman's (1986) Pedagogical Content Knowledge (PCK) framework by adding a technological dimension. The integration of these knowledge domains enables teachers to effectively design and manage learning activities that benefit from blended learning (Mishra & Koehler, 2009).

The TPACK model emphasizes the interconnectedness of these knowledge domains. Content knowledge requires teachers to have a deep understanding of their subject matter. Meanwhile, pedagogical knowledge involves mastery of classroom strategies, learning theories, and differentiation techniques. However, technological knowledge entails proficiency in using educational technologies and supporting students to use them for learning purposes. According to Mishra and Koehler (2009), the TPACK framework is particularly essential for helping teachers to create engaging and effective blended learning experiences.

In addition to formal TPD programs, collaborative professional development has emerged as a valuable approach to enhance teachers' skills and knowledge. Voogt et al. (2015) propose

a collaborative professional development scheme that shifts professional development from formal to informal settings; community-based environments. This approach emphasizes situatedness, agency, and the cyclical nature of learning and change. By sharing experiences and expertise, teachers can scaffold their teaching practices and develop their attitudes and beliefs (Voogt et al., 2015). Collaborative professional development also encourages teachers to engage in the design of curriculum activities, share knowledge, and address challenges collectively (Voogt et al., 2015, p. 262).

Informal learning through social networks has also gained traction as a supplementary form of professional development. Ab Rashid et al. (2016) highlight the role of social networks in providing teachers with instant responses to inquiries and fostering engagement among peers. While informal learning complements formal TPD programs, it is not a substitute for structured professional development. The quality of expertise exchanged through informal channels may vary, as it often reflects personal views rather than evidence-based practices (Ab Rashid et al., 2016).

Despite the recognized importance of TPD programs, several challenges hinder their effectiveness. Ghawi and Massoud (2022) identify lack of incentives, transportation issues, and scheduling conflicts as the top barriers to teacher participation in professional development activities. These logistical challenges underscore the need for TPD programs to be accessible and flexible.

Ag-Ahmad et al. (2022) emphasize the importance of mentorship, administrative support, and adequate resources in ensuring the success of TPD programs. They argue that teachers' voices should be incorporated into the design and implementation of professional development initiatives to ensure relevance and effectiveness. Similarly, Dangwal and Srivastava (2016) highlight the need for TPD programs to integrate ICT skills, best pedagogical practices, and curriculum understanding. However, they note a significant gap between the ideal and the reality, as many teacher education programs fail to adequately prepare pre-service teachers to use technology in the classroom.

Johnson et al. (2015) identify six key challenges to integrating technology in education: the lack of technology integration in teacher education, the need to redefine teachers' roles, the difficulty of scaling teaching innovations, the focus on theoretical rather than practical training, the perception of technology as an accessory rather than a core component of pedagogy, and the lack of emphasis on digital citizenship. These challenges highlight the need for TPD programs to adopt a more hands-on, interdisciplinary approach to technology integration.

The integration of technology into education has transformed the landscape of teaching and learning, necessitating a corresponding evolution in TPD programs. Effective TPD programs for blended learning must address the interconnected domains of technological, pedagogical, and content knowledge, as outlined in the TPACK framework. Collaborative and informal learning approaches, such as those proposed by Voogt et al. (2015) and Ab Rashid et al. (2016), offer valuable opportunities for teacher development but require structured frameworks to ensure quality and consistency. International standards, such as those set by

ISTE, provide a roadmap for integrating technology into education, emphasizing the importance of digital citizenship, innovation, and collaboration.

However, significant challenges remain, including logistical barriers, the lack of hands-on training, and the need for better understanding for blended learning role in the educational practices. Addressing these challenges requires a concerted effort to design TPD programs that are comprehensive, sustainable, and responsive to the needs of teachers and students. By doing so, TPD programs for blended learning can empower teachers to create engaging, technology-enhanced learning experiences that prepare students for the demands of the 21st century.

A quality blended learning TPD program should be systematic, comprehensive, and practical in addressing teachers' general and specific training needs. This can be achieved by introducing well-designed TPD programs for blended learning supported by standards and key performance indicators to help policymakers and educators design, implement, and follow up on such programs (Hazza, 2023). The purpose of this paper is to investigate the quality of TPD programs for blended learning within the Jordanian educational context in terms of their design and delivery to find out if they were following a particular framework that assures their quality and takes into consideration the various dimensions of E-learning that should be included in TPD programs for blended learning from the teachers' views and perspectives.

Research Purpose and Questions
This study aims to evaluate the effectiveness of TPD programs for blended learning in Jordan from the perspective of English language teachers. Specifically, it addresses the following research questions:
 1) How do TPD programs for blended learning support English language teachers in developing technological, pedagogical, and content knowledge (TPACK) to enhance their teaching strategies?
 2) What are the perceived benefits and challenges that English language teachers encounter in integrating TPACK as a result of participating in these programs?

Methodology
Research Design
This study employed a qualitative, exploratory ethnographic approach to investigate the implications of Teacher Professional Development (TPD) programs for blended learning on English language teachers' instructional practices in Jordan. Ethnographic methods were chosen to provide rich, contextual insights into teachers' experiences, perspectives, and challenges in real-world educational settings. This design also allowed the researchers to explore not only what teachers learned from the programs, but how this learning was applied—or constrained—in their professional contexts.

Participants and Sampling
Using purposive sampling (Black, 2010), 94 English language teachers (25 male, 69 female) were selected from a variety of public and private schools in Amman. The participants taught Grades 1 to 12 and were drawn from national, American, and IGCSE programs. Inclusion criteria required participants to have prior experience with educational technology,

familiarity with blended learning concepts, and participation in at least two TPD programs focused on blended learning. This sampling strategy ensured variation in teaching backgrounds, digital proficiency, and exposure to different training modalities, thereby enriching the comparative analysis.

TPD Program Context
Participants had attended between two and five TPD programs covering basic to advanced levels of technology integration. Two of these TPD programs were mandatory face-to-face programs, which were: Advanced Level for Smarter Education and Blended Learning Strategies and Mechanisms. However, the other three TPD programs were optional online programs, which were: Designing Blended Learning, Hybrid Learning: A New Model for the Future of Learning, and QRA Blended Learning. Teachers' participation in these programs varied as follows:100% (42/42) attended at least two programs, 38% (16/42) attended three programs, 26% (11/42) attended four programs, and 14% (6/42) attended all five programs. The diversity in participation allowed for comparative insights across different program types and delivery modes, further enriching the data.
This diversity enabled an in-depth comparison of delivery modes, content quality, and pedagogical relevance.

Data Collection
The primary method for data generation involved semi-structured interviews with 42 teachers. These interviews provided flexibility to explore participants' experiences, opinions, and challenges with TPD programs. Interviews continued until thematic saturation was reached, ensuring that no additional critical themes emerged after the 38th interview. Interviews explored the participants' views on the design and relevance of the TPD programs, the alignment between training content and classroom needs, teachers' experiences with technology integration, and perceived barriers and support mechanisms.

The interviews allowed for probing emergent issues while maintaining consistency across themes. Participants were encouraged to reflect on both successful and problematic aspects of their TPD experiences.

Data Analysis
The researchers analyzed the collected data using reflexive thematic analysis (RTA) (Braun & Clarke, 2019) to identify patterns, similarities, and differences in teachers' perspectives. This method facilitates an in-depth exploration of teachers' experiences with TPD programs for blended learning. The researchers conducted the data analysis in four stages including familiarization with the data, generating initial and advanced codes, identifying themes, and presenting the findings:

Familiarization
During this stage, The researchers immersed themselves in the data by reading interview transcripts multiple times, taking notes, highlighting key insights and annotating recurring concerns, language patterns, and contextual insights.. These key insights included teachers' comments on the challenges of implementing blended learning, the relevance of TPD content to classroom practice, and gaps in follow-up after the training. This step ensured a structured approach to later coding and theme development.

Coding
The researchers coded the transcripts in two phases: initial coding and advanced coding. The initial codes were short descriptive labels capturing surface-level meanings in the data (Braun & Clarke, 2019). Examples include limited time for practice, unclear training objectives, lack of follow-up after training, need for reliable evaluation procedures, and TPD programs focused only on theory. These codes reflected observable aspects of teachers' experiences with the TPD programs.

In the second phase, the researchers refined, grouped, and merged the codes to capture deeper meanings and relationships (Braun & Clarke, 2019). For example, we combined limited time for practice, and TPD focused only on theory under the code: mismatch between TPD design and teachers' needs', we grouped lack of follow-up after training and need for reliable evaluation procedures under the code insufficient post-training support, TPD programs focused only on the use of digital tools evolved into challenges with teachers' engagement in blended learning. Advanced coding allowed me to begin identifying patterns within the data.

Theme Development
Once the researchers consolidated advanced codes, they grouped them into themes that reflected the core ideas of the study. The themes captured both recurring patterns and unique perspectives related to the teachers' experiences. For example, the key theme practical application versus theoretical instruction emerged from the corresponding codes which were TPD focused only on theory, lack of practical examples, and irrelevant tools introduced in training. Meanwhile, the theme post-training support and sustainability corresponds with the codes of lack of follow-up after training, limited technical support, and difficulty using new tools. In addition, the theme digital divide and differentiated learning needs emerged from the codes of efficiency of face-to-face sessions, efficiency of online programs, and levels of difficulty. Finally, the theme evaluation and feedback mechanisms emerged from the codes of lack of evaluation procedures, and lack of evaluation tools.

Data Presentation
The researchers used the identified themes to structure the results section of the study. They comprised direct quotes from participants to illustrate the themes and ensure the authenticity of teachers' voices. Chat GPT was used to rewrite the conclusion and the discussion to reduce the amount of words required for the journal. These parts have been reviewed afterwards to ensure they align with the research objectives and questions.

Results
This section presents the findings from semi-structured interviews conducted with 42 English language teachers who participated in various face-to-face and online Teacher Professional Development (TPD) programs for blended learning. The goal of the analysis was to explore how these programs influenced teachers' instructional practices, digital integration, and pedagogical strategies, as well as to uncover the key challenges encountered during implementation.

The data were analyzed using reflexive thematic analysis, leading to the identification of four core themes that encapsulate the teachers' experiences and perspectives. These themes reflect both the strengths and limitations of the TPD programs and highlight the contextual

realities of blended learning adoption in Jordanian schools. The themes are presented as follows:

1. Digital Divide and Differentiated Learning Needs
2. Practical Application versus Theoretical Instruction
3. Post-Training Support and Sustainability
4. Evaluation and Feedback Mechanisms

These themes reflect the diverse experiences of English language teachers participating in blended learning TPD programs, and underscore the influence of individual contexts, prior digital experience, and program design. Each theme is supported by direct quotations from participants to ensure authenticity and provide insight into the nuanced dynamics shaping teachers' engagement with blended learning.

Theme 1: Digital Divide and Differentiated Learning Needs
Teachers expressed divergent experiences depending on their prior digital proficiency. Those with lower digital literacy reported substantial gains from basic training sessions.
"I knew nothing about smart boards before the training. Now I use it every day in class." (Teacher #9)
"I learned how to use voting systems and document cameras for the first time. It gave me confidence." (Teacher #15)
In contrast, more digitally experienced teachers perceived the same content as overly simplistic and insufficient.
"The tools were introduced well, but I needed more than the basics. It felt repetitive." (Teacher #17)
"It didn't challenge me. I expected to see how these tools integrate into pedagogy, not just how to click through menus." (Teacher #2)
The uniform structure of the programs failed to accommodate varying levels of teacher preparedness. Teachers suggested that differentiated pathways—basic, intermediate, and advanced—would have made training more meaningful.
"There were teachers who had never used a PC and others who built websites. We were treated the same." (Teacher #6)

Theme 2: Practical Application versus Theoretical Instruction
The mismatch between theory and classroom application was especially evident in online programs. Many teachers described the materials as informative but disconnected from actual teaching practice.
"The Microsoft program was like reading a well-written article. There were no activities or real classroom examples." (Teacher #29)
"The Intel course explained blended learning well, but I still didn't know how to apply it." (Teacher #18)
This lack of application led to frustration and hesitation in using the content in their real teaching contexts.
"We learned the tools, but not the why or how. I still struggle to connect them to lesson objectives." (Teacher #14)
By contrast, the *Blended Learning Strategies and Mechanisms* (BLSM) program was praised for its structured, task-oriented sessions.
"The flow of topics made sense. Each tool was tied to an activity that I could see myself using in class." (Teacher #2)

"It wasn't just tools—it showed us how to redesign our lessons and assess students differently." (Teacher #27)

The inclusion of project-based and collaborative tasks enabled teachers to see the real-world relevance of blended learning strategies.

Theme 3: Post-Training Support and Sustainability

Participants overwhelmingly indicated that the absence of follow-up support hindered the sustained implementation of blended strategies.

"After training, we were left alone. There was no support when problems arose." (Teacher #14)

"The training ended too soon. We needed someone to guide us during the first weeks of implementation." (Teacher #23)

Several teachers highlighted that challenges only became apparent when they attempted to apply their learning independently.

"I faced issues setting up the LMS, but had no one to ask. It delayed my lesson for days." (Teacher #14)

Others expressed that training would be more effective if accompanied by coaching or collaborative follow-up.

"A follow-up session would have made a difference. I wasn't sure if I was doing it right." (Teacher #26)

"Without community or mentorship, blended learning felt isolating at first." (Teacher #18)

This theme reflects the critical role of sustainability in TPD—one-off sessions alone do not guarantee long-term impact without ongoing institutional or peer support.

Theme 4: Evaluation and Feedback Mechanisms

Participants voiced concern over the lack of meaningful evaluation processes. In many cases, learning was assessed through superficial tasks or unmonitored online quizzes.

"There was no assessment, just a few multiple-choice questions. I didn't know if I really understood." (Teacher #26)

"Even when we submitted tasks, we didn't get feedback. I didn't know if what I did was acceptable." (Teacher #31)

This lack of feedback left teachers uncertain about their progress and diminished confidence in classroom implementation.

By contrast, the QRA program stood out for its use of project-based evaluation.

"They asked us to submit a blended lesson and gave us comments. That was helpful." (Teacher #15)

However, even in this case, teachers sought deeper engagement.

"Peer feedback helped, but I wish there had been expert review with model answers." (Teacher #17)

These findings point to the importance of formative and summative assessment mechanisms that not only validate learning but support its refinement and practical application.

Summary

The results highlight significant disparities in the design, delivery, and perceived impact of TPD programs. Teachers valued programs that were well-structured, hands-on, and responsive to their needs. Yet the lack of differentiated instruction, post-training mentorship,

and authentic evaluation mechanisms limited the transformative potential of many TPD initiatives.

"It's not that the training was bad—it's that it didn't reach all of us in the right way." (Teacher #32)

These themes offer concrete direction for developing more inclusive, practice-based, and sustainable TPD frameworks that align with the complex realities of blended teaching.

Summary of Themes and Evidence

Theme	Key Issues Identified	Example Programs Referenced
Digital Divide and Differentiated Needs	Single-level training failed to meet varied digital proficiency levels	All programs (esp. face-to-face)
Theory vs. Practice Gap	Online programs lacked applied tasks and classroom strategies	Microsoft Hybrid Learning vs. BLSM
Post-Training Support and Sustainability	No follow-up, mentorship, or community-based reinforcement	All programs (except partial success in QRA)
Evaluation and Feedback	Weak or absent feedback and assessment mechanisms	Advanced Level vs. QRA Blended Learning

Discussion

This section interprets the findings of the study in relation to the two guiding research questions and situates them within relevant theoretical frameworks and existing literature. The discussion is structured around the four emergent themes from the results section, offering a comprehensive understanding of how TPD programs for blended learning impacted teachers' professional development and the challenges they encountered.

RQ1: How Do TPD Programs Support English Language Teachers in Developing TPACK to Enhance Their Teaching Strategies?

Theme 1: Digital Divide and Differentiated Learning Needs

The findings reveal that teachers' experiences with TPD programs were heavily influenced by their prior digital proficiency. While less experienced teachers reported substantial progress in acquiring basic technological skills, more digitally proficient teachers found the content lacking in depth and relevance. This confirms Fernández-Batanero et al. (2020) assertion that TPD programs must be tailored to accommodate varying digital competencies.

Despite being exposed to the same training, the diversity of skill levels led to unequal learning outcomes. The absence of diagnostic assessments or differentiated instruction pathways limited the programs' effectiveness. These findings support Fairman et al. (2022), who advocate for adaptive professional development frameworks that offer foundational, intermediate, and advanced learning paths. Without such differentiation, the potential of the TPACK model (Mishra & Koehler, 2009) cannot be fully realized.

Theme 2: Practical Application versus Theoretical Instruction

The data also indicate a significant gap between the theoretical orientation of some programs—especially online ones—and practical classroom implementation. Teachers frequently described online sessions as overly abstract, lacking real-world examples or tasks. This disconnect undermines the integration of TPACK, which emphasizes the fusion of technological tools with pedagogical methods and content knowledge.

In contrast, programs such as *Blended Learning Strategies and Mechanisms* were positively reviewed for their hands-on, task-based learning, which enabled teachers to visualize and simulate the blended classroom. This supports the findings of Voogt et al. (2015), who stress the value of active learning and collaborative planning in TPD design. The practical orientation of this program allowed teachers to shift from passive recipients of information to active designers of instruction, making the TPACK framework operational rather than theoretical.

RQ2: What Are the Perceived Benefits and Challenges of Integrating TPACK as a Result of Participating in TPD Programs?

Theme 3: Post-Training Support and Sustainability
Although teachers gained important knowledge during the TPD programs, many found it difficult to sustain implementation due to the lack of follow-up support. This absence of coaching, mentoring, or structured peer collaboration left many participants unsure about how to navigate real-world challenges after training sessions ended.

These findings echo Meyer et al. (2023), who emphasize that the absence of continuous professional development mechanisms limits the impact of initial training. Participants in this study voiced a need for mentoring systems, helpdesks, or Professional Learning Communities (PLCs), in line with Ab Rashid et al. (2016) advocacy for socially-driven, collaborative professional learning environments.

Post-training support is particularly crucial when adopting innovative models like blended learning, which often demand pedagogical shifts toward student-centered, flexible teaching approaches. Without sustainable reinforcement structures, teachers may revert to traditional practices, thereby limiting the long-term impact of TPD efforts.

Theme 4: Evaluation and Feedback Mechanisms
Another key challenge reported was the lack of robust evaluation mechanisms within the TPD programs. Teachers were often left without clear indicators of whether they had mastered the intended skills or how to improve their blended learning practices. The absence of both formative and summative assessments made the learning process feel incomplete.

This finding supports the National Staff Development Council's (2009) emphasis on comprehensive evaluation frameworks in TPD. While programs like *QRA Blended Learning* did include reflective assignments and peer-reviewed projects, such practices were the exception rather than the norm. Participants valued feedback that was specific, structured, and actionable—qualities often missing from other programs.

To ensure alignment with the TPACK framework, evaluation mechanisms must go beyond checking for tool knowledge and assess whether teachers can meaningfully integrate digital tools into pedagogical design and subject instruction.

Synthesis and Theoretical Integration
Collectively, the findings suggest that TPD programs for blended learning are most effective when they:
• Acknowledge and address the digital divide,
• Offer practical, classroom-based applications,

- Provide sustained support beyond initial training,
- Implement multi-level, feedback-rich evaluation mechanisms.

The **TPACK framework** is most impactful when embedded within differentiated, practice-oriented, and continuously supported professional development models. Similarly, the **NSDC's (2009)** standards of comprehensiveness, sustainability, and intensiveness remain highly relevant for evaluating and improving the design of blended learning TPD programs.

Conclusion and Recommendations

This study explored English language teachers' experiences with Teacher Professional Development (TPD) programs for blended learning in Jordan. Drawing on qualitative data from 42 semi-structured interviews, the research uncovered critical insights into the successes and shortcomings of existing TPD practices. While teachers acknowledged the potential of these programs to enhance their technological competencies, many expressed frustration with the lack of differentiation, hands-on practice, post-training support, and robust evaluation.

The findings underscore the urgent need to redesign TPD programs around inclusive, responsive, and evidence-based frameworks—most notably the **TPACK model**. As the digital divide continues to shape teachers' readiness and adoption rates, differentiated content delivery and continuous mentorship must be prioritized. Programs should not only focus on digital tool usage but also embed practical pedagogical strategies that support blended learning in authentic classroom contexts.

Practical Recommendations

Based on the analysis, the following recommendations are proposed for educational policymakers, school administrators, and TPD designers:

1. **Integrate TPACK as a foundational design principle** for TPD programs, ensuring a balanced focus on technology, pedagogy, and subject knowledge.
2. **Conduct digital skills assessments** before training to tailor content according to individual teacher needs.
3. **Adopt active learning methodologies**, including problem-based tasks, collaborative projects, and blended lesson simulations.
4. **Provide ongoing mentorship and post-training support**, such as peer coaching, digital helplines, and online PLCs.
5. **Include formative and summative evaluations**, using performance-based assessments and structured feedback loops to monitor progress and instructional application.
6. **Systematize program reviews** based on teacher feedback, instructional outcomes, and contextual alignment with school realities.

Limitations and Future Research

This study is limited by its reliance on self-reported data and its focus on a specific national context. While rich in qualitative depth, future studies should explore the long-term effects of TPD on student learning outcomes and classroom transformation.

Further research could examine:

- The scalability of differentiated TPD models across diverse educational contexts,
- The effectiveness of hybrid (blended) TPD delivery formats,
- The role of administrative leadership in sustaining professional development initiatives.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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