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INVESTIGATING PROFESSIONAL DEVELOPMENT DIMENSIONS INFLUENCING COMMUNICATIVE LANGUAGE TEACHING AND TECHNOLOGY INTEGRATION: A QUANTITATIVE STUDY OF AFGHAN EFL UNIVERSITY TEACHERS

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Abstract
Professional development (PD) is widely recognized as a critical mechanism for improving teaching quality in higher education; however, existing research often conceptualizes PD as a unified construct, offering limited insight into how specific PD dimensions shape particular pedagogical approaches. This study examines the differential effects of professional development dimensions—pedagogical training, language proficiency enhancement, technology integration, reflective practice, and peer collaboration—on communicative and student-centered English as a Foreign Language (EFL) teaching practices in Afghan universities. Grounded in Desimone's professional development framework and communicative language teaching theory, the study adopts a quantitative research design. Data were collected from university EFL teachers and analyzed using SPSS Version 26 through descriptive statistics, correlation analysis, and multiple regression techniques. The findings indicate that pedagogical training and language proficiency enhancement are the strongest predictors of communicative and student-centered pedagogy, while reflective practice and peer collaboration provide essential supportive conditions for pedagogical change. Technology integration, although positively associated with instructional practices, demonstrates comparatively weaker predictive power. The study contributes to EFL teacher education literature by offering a disaggregated, mechanism-oriented understanding of professional development and provides evidence-based guidance for designing targeted professional development initiatives in fragile higher education contexts.
Keywords: professional development dimensions, communicative language teaching, student-centered pedagogy, EFL teachers, higher education, Afghanistan

INTRODUCTION

Teacher professional development (PD) has been consistently identified as a key driver of instructional improvement and educational quality across higher education systems (Avalos, 2011; Darling-Hammond et al., 2017). In language education, and particularly in English as a Foreign Language (EFL) contexts, PD plays a crucial role in enabling teachers to adopt communicative, learner-centered, and pedagogically innovative approaches that align with contemporary language teaching principles (Borg, 2018). Despite this broad consensus, much of the existing literature treats professional development as a singular or holistic construct, paying insufficient attention to the distinct contributions of specific PD dimensions to particular pedagogical practices (Desimone, 2009).

Communicative Language Teaching (CLT) and student-centered pedagogy are widely regarded as core instructional approaches in effective EFL teaching. CLT emphasizes meaningful interaction, authentic language use, and learner engagement, while student-centered pedagogy foregrounds learner autonomy, collaboration, and active participation in the learning process (Richards, 2006). Successful implementation of these approaches requires more than general exposure to professional development; it depends on teachers' pedagogical knowledge, language proficiency, reflective capacity, and collaborative professional engagement (Borg, 2018; Richards, 2006). Consequently, different dimensions of professional development may exert varying levels of influence on teachers' ability to enact communicative and student-centered instruction (Ali, A. et al., 2024).

This issue is particularly significant in fragile and resource-constrained higher education contexts such as Afghanistan. Afghan university EFL teachers operate within challenging environments characterized by limited institutional support, inconsistent access to sustained professional development, and restricted opportunities for collaborative professional learning (Hayward & Karim, 2019; Shayan, 2015). Although professional development initiatives exist, they often differ in scope, focus, and duration, and their pedagogical impact remains uneven.

Understanding which PD dimensions most strongly influence communicative and student-centered pedagogy is therefore essential for maximizing the effectiveness of professional development within constrained institutional settings (Ali, A. et al., 2024).

Theoretically, this study is grounded in Desimone's (2009) framework of effective professional development, which emphasizes content focus, active learning, coherence, duration, and collective participation as key mechanisms through which PD influences instructional practice. In addition, communicative language teaching theory and teacher cognition perspectives suggest that teacherscTeachers' beliefs, linguistic confidence, and reflective awareness mediate the relationship between professional learning experiences and classroom practice (Borg, 2003; Richards, 2006). From this perspective, professional development does not influence teaching uniformly; rather, its impact is filtered through specific PD dimensions that align with teachers' instructional needs and contextual realities.

Empirical research has demonstrated positive relationships between professional development and EFL teaching effectiveness (Borg, 2018; Darling-Hammond et al., 2017). However, few studies have systematically disaggregated professional development into its constituent dimensions to examine their relative influence on communicative and student-centered pedagogy, particularly in higher education contexts affected by conflict and instability. This lack of fine-grained analysis limits the ability of policymakers and institutional leaders to design targeted professional development programs that prioritize the most impactful components (Desimone, 2009).

Accordingly, the present study seeks to address this gap by examining how distinct professional development dimensions shape communicative and student centered EFL teaching practices among university teachers in Afghanistan. Rather than asking whether professional development matters a question that has been largely settled in the literature—this study asks which aspects of professional development matter most, and how they contribute to pedagogical change in a fragile higher education context. By empirically testing the predictive power of individual PD dimensions, the study provides a nuanced understanding of professional learning pathways and their instructional implications.

The findings of this study have important implications for EFL teacher education, higher education policy, and professional development design. By identifying the most influential professional development dimensions, the study contributes to international scholarship on teacher learning and offers context-sensitive guidance for improving communicative and student cantered EFL pedagogy in Afghan universities. The remainder of the paper is structured as follows: the next section reviews relevant literature on professional development dimensions, communicative language teaching, and student cantered pedagogy; this is followed by the methodology, results, discussion, conclusion, recommendations, suggestions for future research, and references.

LITERATURE REVIE

2.1 Professional Development as a Multidimensional Construct

Professional development (PD) has evolved from being viewed as a one-time training activity to a complex, multidimensional process that supports sustained instructional improvement (Avalos, 2011; Darling-Hammond et al., 2017). Contemporary research emphasizes that PD is most effective when it is content-focused, contextually relevant, and aligned with teachers' instructional goals (Desimone, 2009). Rather than treating PD as a uniform intervention, recent studies argue for disaggregating PD into its constituent dimensions to better understand how different forms of professional learning influence teaching practice (Borko, 2004; Opfer & Pedder, 2011).

Desimone's (2009) framework remains influential in conceptualizing PD effectiveness, highlighting core features such as content focus, active learning, coherence, duration, and collective participation. However, empirical studies increasingly demonstrate that these features interact with specific teacher competencies—such as pedagogical knowledge, language proficiency, and technological skills—to shape instructional outcomes (Darling-Hammond et al., 2017). In EFL contexts, this interaction is particularly salient, as language teachers must simultaneously manage linguistic input, classroom interaction, and pedagogical innovation (Borg, 2018).

2.2 Pedagogical Training and Communicative Language Teaching

Communicative Language Teaching (CLT) is widely recognized as a foundational approach in modern EFL pedagogy, emphasizing meaningful communication, interaction, and authentic language use (Richards, 2006). Despite its prominence in curriculum guidelines, the successful implementation of CLT remains uneven, particularly in contexts where traditional, teacher-centered methods have long dominated instructional practice (Borg, 2018). Research suggests that pedagogical training is a critical PD dimension influencing teachers' ability to adopt CLT principles effectively.

Pedagogical training enhances teachers' understanding of communicative principles, task-based instruction, and interactional strategies, enabling them to design lessons that prioritize learner engagement and language use over rote memorization (Richards, 2006). Empirical studies indicate that teachers who receive sustained pedagogical training demonstrate higher confidence in managing pair and group work, facilitating classroom interaction, and balancing fluency and accuracy (Borg, 2018; Littlewood, 2014). In higher education settings, such training is essential for shifting instructional practices toward communicative and learner-centered paradigms.

In fragile and low-resource contexts, pedagogical training assumes heightened importance. Teachers may have limited exposure to CLT during their initial education and rely heavily on PD opportunities to update their instructional repertoire (Hayward & Karim, 2019). Consequently, examining pedagogical training as a distinct

PD dimension provides valuable insight into how CLT practices emerge and are sustained in challenging environments.

2.3 Language Proficiency Enhancement and Instructional Confidence

Language proficiency enhancement represents another critical dimension of professional development in EFL contexts. Teachers' linguistic competence directly influences their instructional confidence, classroom interaction, and willingness to engage students in communicative activities (Borg, 2003). Research grounded in teacher cognition theory suggests that teachers' beliefs about their own language proficiency shape their pedagogical choices and risk-taking behaviors in the classroom (Borg, 2006).

Empirical studies demonstrate that PD initiatives aimed at improving teachers' academic English, pronunciation, and discourse competence contribute to more effective communicative instruction (Richards, 2006). Enhanced language proficiency reduces reliance on teacher-dominated talk and enables instructors to facilitate extended learner interaction, provide nuanced feedback, and model authentic language use. In higher education EFL settings, where English often serves as the medium of instruction, language proficiency enhancement is therefore integral to CLT implementation (ALI, A, 2023).

In contexts such as Afghanistan, where English is learned as a foreign language and opportunities for immersive exposure are limited, PD-based language enhancement plays a compensatory role (Shayan, 2015). Teachers who lack confidence in their language proficiency may avoid communicative tasks or revert to form-focused instruction, underscoring the importance of this PD dimension for pedagogical transformation.

2.4 Technology Integration and EFL Instruction

Technology integration has become an increasingly prominent aspect of EFL teaching, offering new possibilities for interaction, authentic input, and learner autonomy (Chapelle, 2017). In higher education, digital tools such as learning management systems, multimedia resources, and communication platforms support blended and technology-enhanced instruction. However, effective technology integration depends not only on access to tools but also on teachers' pedagogical understanding of how technology can support language learning (Mishra & Koehler, 2006).

The Technological Pedagogical Content Knowledge (TPACK) framework posits that meaningful technology integration occurs at the intersection of content knowledge, pedagogical knowledge, and technological knowledge (Mishra & Koehler, 2006). Professional development plays a central role in fostering this integrated knowledge base by helping teachers align technological tools with communicative and instructional goals (Koehler et al., 2013). Research indicates that PD focused on pedagogical applications of technology—rather than technical skills alone—leads to more sustained and effective instructional change (Fullan, 2015).

In EFL contexts, technology integration has been shown to enhance learner engagement, support individualized learning, and provide access to authentic language input (Chapelle, 2017). Nevertheless, studies also report uneven implementation, particularly in low-resource environments where infrastructure constraints and limited training restrict pedagogical application (Hayward & Karim, 2019). These findings highlight the need to examine technology integration as a distinct PD dimension influencing instructional practice.

2.5 Reflective Practice, Peer Collaboration, and Instructional Change

Reflective practice and peer collaboration are increasingly recognized as essential mechanisms for translating professional development into classroom practice (Borko, 2004). Reflective practice enables teachers to critically examine their instructional experiences, identify areas for improvement, and adapt pedagogical strategies to contextual needs (Schön, 1983). Peer collaboration, meanwhile, provides opportunities for shared learning, mutual support, and professional dialogue, reinforcing PD outcomes through collective engagement (Desimone, 2009).

Empirical research suggests that teachers who engage in reflective and collaborative PD are more likely to experiment with innovative teaching strategies and sustain instructional change over time (Opfer & Pedder, 2011). In EFL higher education, collaborative lesson planning, peer observation, and professional learning communities have been associated with improved CLT implementation and technology integration (Borg, 2018).

In fragile higher education systems, reflective practice and peer collaboration may serve as particularly valuable PD pathways when formal training opportunities are limited (Arooje & Burridge, 2021). Understanding how these dimensions support CLT and technology-enhanced instruction is therefore critical for designing contextually responsive PD initiatives.

2.6 Research Gap and Conceptual Focus

Despite extensive research on professional development and EFL instruction, significant gaps remain. Most existing studies focus on general teaching effectiveness or treat professional development as a single construct, offering limited insight into how specific PD dimensions influence communicative language teaching and technology integration (Desimone, 2009; Borg, 2018). Moreover, empirical evidence from fragile higher education contexts, particularly Afghanistan, remains scarce.

This study addresses these gaps by adopting a disaggregated approach to professional development and empirically examining how pedagogical training, language proficiency enhancement, technology integration, reflective practice, and peer collaboration influence CLT and technology-enhanced EFL instruction. By focusing on Afghan university teachers, the study contributes context-specific evidence while offering insights relevant to other low-resource and conflict-affected settings.

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METHODOLOGY

Research Design

This study adopted a quantitative, cross-sectional survey research design to examine how specific professional development (PD) dimensions influence communicative language teaching (CLT) and technology integration in English as a Foreign Language (EFL) instruction at the university level. A quantitative approach was considered appropriate because the study sought to test statistically the relative contribution of distinct PD dimensions to specific instructional practices using inferential analysis (Creswell, 2014). Unlike studies that examine professional development as a global construct, this research employed a disaggregated analytical framework, enabling a more nuanced understanding of pedagogical mechanisms underlying instructional change (Dr. Asghar Ali, et al., 2025).

Population and Sample

The target population comprised EFL university teachers employed in public and private universities in Afghanistan. Based on institutional records, the accessible population was estimated at approximately 500 EFL lecturers. From this population, data were obtained from 93 respondents, reflecting the number of valid cases available in the finalized SPSS dataset. This sample size meets minimum statistical requirements for multiple regression analysis involving several predictors and allows for reliable estimation of effect sizes (Tabachnick & Fidell, 2013).

Participants were selected using a systematic random sampling technique, ensuring proportional representation across institutions and academic faculties. The demographic profile of the respondents reflects a predominantly early- to mid-career teaching workforce, consistent with the current structure of Afghan higher education.

Research Instruments

Data were collected using a structured self-administered questionnaire, developed based on established theoretical frameworks and empirical studies related to professional development, communicative language teaching, and technology integration (Desimone, 2009; Borg, 2018; Mishra & Koehler, 2006). All questionnaire items were measured on a five-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The instrument consisted of three main sections:

Professional Development Dimensions (Independent Variables)

This section measured five PD dimensions:

- pedagogical training,
- language proficiency enhancement,
- technology integration training,
- reflective practice, and
- peer collaboration.

These dimensions reflect core aspects of professional learning identified in PD literature and were treated as separate predictors in the regression analyses.

EFL Teaching Practices (Dependent Variables)

Two outcome variables were examined:

- communicative language teaching (CLT), and
- Technology integration in instruction.

These constructs were operationalized through items measuring interaction, learner engagement, communicative task design, digital tool usage, and pedagogical application of technology.

Demographic Information

This section collected background information including age, academic qualification, teaching experience, institutional affiliation, and faculty.

The questionnaire items were reviewed by experts in EFL pedagogy and educational research to ensure **content validity**, clarity, and contextual appropriateness. Minor revisions were made prior to administration.

Data Collection Procedure

Data collection was conducted over a four-month period. Participants were informed about the purpose of the study and assured of confidentiality and voluntary participation. Questionnaires were distributed both electronically and in printed form, depending on institutional access and participant availability. Completed questionnaires were screened for missing data, and only fully completed responses were included in the final analysis.

Reliability and Validity

Internal consistency reliability of the instrument was assessed using Cronbach's alpha. The overall reliability coefficient exceeded .90, indicating excellent internal consistency, see Table the Table 1. Reliability values for individual subscales also met accepted thresholds, supporting the stability of the measurement instrument (Nunnally & Bernstein, 1994).

Construct validity was further supported through factor structure alignment with theoretical constructs underpinning professional development and EFL teaching practices. The clear separation of PD dimensions and instructional outcome variables justified their use in multiple regression modeling.

Table 1. Reliability and Validity of the instrument

Statistic	*Value*
Cronbach's alpha	.942
Cronbach's alpha (standardized items)	.947
N of items	45

Data Analysis

Data were analyzed using SPSS Version 26. Descriptive statistics were computed to summarize respondents' demographic characteristics and to describe central tendencies and dispersion for each construct. Pearson correlation coefficients were calculated to examine preliminary relationships between PD dimensions and instructional practices.

To address the main research objectives, multiple regression analysis was conducted to determine the relative contribution of each professional development dimension to:

1. communicative language teaching, and
2. Technology integration in instruction.

This analytical approach allowed for the identification of unique predictive effects of individual PD dimensions while controlling for intercorrelations among predictors. All statistical tests were conducted at a .05 significance level, consistent with conventions in educational research.

Ethical Considerations

Ethical principles were strictly observed throughout the study. Participation was voluntary, and informed consent was obtained from all respondents. Anonymity and confidentiality were ensured by excluding identifying information from the dataset. Participants were informed of their right to withdraw at any stage without consequence. The study adhered to institutional research ethics guidelines and internationally accepted standards for educational research.

RESULTS

Descriptive Statistics of Professional Development Dimensions

Descriptive statistics for the professional development dimensions are presented in Table 1. As shown in Table 1, respondents reported generally high levels of engagement across all professional development dimensions. Pedagogical training recorded the highest mean score ($M = 4.13$, $SD = 0.74$), followed by peer collaboration ($M = 4.12$, $SD = 0.70$) and reflective practice ($M = 4.06$, $SD = 0.78$). Technology integration training showed comparatively lower variability ($M = 3.96$, $SD = 0.83$), suggesting uneven exposure to technology-focused professional development.

Table 1. *Descriptive Statistics for Professional Development Dimensions (N = 93)*

Professional Development Dimension	***Mean (M)***	***Std. Deviation (SD)***
Pedagogical Training	4.13	0.74
Language Proficiency Enhancement	4.01	0.79
Technology Integration Training	3.96	0.83
Reflective Practice	4.06	0.78
Peer Collaboration	4.12	0.70

Note. Scale ranged from 1 (strongly disagree) to 5 (strongly agree).

Descriptive Statistics of Communicative Language Teaching and Technology Integration

Descriptive statistics for the dependent variables—communicative language teaching and technology integration in instruction—are presented in **Table 2**. As shown in Table 2, communicative language teaching recorded a high mean score ($M = 4.21$, $SD = 0.62$), indicating strong adoption of communicative practices among respondents. Technology integration also showed a high mean ($M = 4.05$, $SD = 0.68$), although with slightly greater dispersion, reflecting variability in pedagogical use of digital tools.

Table 2. *Descriptive Statistics for CLT and Technology Integration (N = 93)*

Instructional Practice	***Mean (M)***	***Std. Deviation (SD)***
Communicative Language Teaching	4.21	0.62
Technology Integration in Instruction	4.05	0.68

Correlation Between Professional Development Dimensions and CLT

Pearson correlation coefficients examining the relationships between professional development dimensions and communicative language teaching are presented in **Table 3**. As shown in Table 3, pedagogical training ($r = .63$, $p < .01$) and language proficiency enhancement ($r = .59$, $p < .01$) demonstrated strong positive correlations with communicative language teaching. Reflective practice ($r = .54$, $p < .01$) and peer collaboration ($r = .51$, $p < .01$) also showed significant associations, while technology integration training exhibited a moderate correlation ($r = .42$, $p < .01$).

Table 3. *Correlations between PD Dimensions and Communicative Language Teaching*

PD Dimension	***CLT***
Pedagogical Training	.63**
Language Proficiency Enhancement	.59**
Technology Integration Training	.42**
Reflective Practice	.54**
Peer Collaboration	.51**

Note. **p** < .01.

Multiple Regression Predicting Communicative Language Teaching

Results of the multiple regression analysis predicting communicative language teaching from professional development dimensions are presented in **Table 4**. As shown in Table 4, the overall regression model was statistically significant, $F(5, 87) = 24.61$, $p < .001$, explaining **58.6% of the variance** in communicative language teaching ($R^2 = .586$).

Pedagogical training emerged as the strongest predictor ($\beta = .36$, $p < .001$), followed by language proficiency enhancement ($\beta = .29$, $p < .01$). Reflective practice also contributed significantly ($\beta = .21$, $p < .05$). Technology integration training and peer collaboration did not retain statistical significance in the full model.

Table 4. *Multiple Regression Predicting Communicative Language Teaching*

Predictor	***B***	***SE B***	***β***	***t***	***p***
Pedagogical Training	0.31	0.06	.36	5.12	< .001
Language Proficiency Enhancement	0.27	0.07	.29	3.84	.001
Technology Integration Training	0.09	0.05	.10	1.62	.109
Reflective Practice	0.18	0.08	.21	2.31	.023
Peer Collaboration	0.07	0.06	.08	1.21	.229

Note. $R = .766$, $R^2 = .586$, Adjusted $R^2 = .561$.

Correlation Between Professional Development Dimensions and Technology Integration

Correlation results for professional development dimensions and technology integration in instruction are presented in **Table 5**. As shown in Table 5, technology integration training demonstrated the strongest correlation ($r = .67$, $p < .01$), followed by pedagogical training ($r = .56$, $p < .01$) and reflective practice ($r = .49$, $p < .01$).

Table 5. *Correlations Between PD Dimensions and Technology Integration*

PD Dimension	***Technology Integration***
Pedagogical Training	.56**
Language Proficiency Enhancement	.44**
Technology Integration Training	.67**
Reflective Practice	.49**
Peer Collaboration	.46**

Note. **p** < .01.

Multiple Regression Predicting Technology Integration

Results of the multiple regression analysis predicting technology integration in instruction are presented in **Table 6**. As shown in Table 6, the model was statistically significant, $F(5, 87) = 27.84$, $p < .001$, accounting for **61.5% of the variance** in technology integration ($R^2 = .615$).

Technology integration training emerged as the strongest predictor ($\beta = .41$, $p < .001$), followed by pedagogical training ($\beta = .24$, $p < .01$) and reflective practice ($\beta = .19$, $p < .05$). Language proficiency enhancement and peer collaboration did not show significant unique effects.

Table 6. *Multiple Regression Predicting Technology Integration in Instruction*

Predictor	***B***	***SE B***	***β***	***t***	***p***
Technology Integration Training	0.38	0.06	.41	6.02	< .001
Pedagogical Training	0.22	0.07	.24	3.18	.002
Reflective Practice	0.17	0.08	.19	2.16	.034
Language Proficiency Enhancement	0.11	0.06	.12	1.71	.091
Peer Collaboration	0.09	0.06	.10	1.48	.143

Note. $R = .784$, $R^2 = .615$, Adjusted $R^2 = .593$.

DISCUSSION

This study investigated how specific professional development (PD) dimensions influence two core aspects of contemporary EFL pedagogy—communicative language teaching (CLT) and technology integration in

instruction—among Afghan university teachers. Rather than treating professional development as a unitary construct, the study adopted a disaggregated approach to identify which PD dimensions exert the strongest influence on distinct instructional practices. The findings provide clear evidence that professional development dimensions do not contribute uniformly to pedagogical change; instead, their influence varies depending on the instructional outcome examined.

Professional Development Dimensions and Communicative Language Teaching

The results indicate that communicative language teaching is most strongly influenced by **pedagogical training**, followed by **language proficiency enhancement** and **reflective practice**. As shown in **Table 4**, pedagogical training emerged as the strongest predictor of CLT ($\beta = .36$, $p < .001$), accounting for a substantial proportion of variance in communicative instructional practices. This finding suggests that pedagogical knowledge—particularly training focused on communicative principles, task-based instruction, and classroom interaction—plays a decisive role in enabling teachers to implement CLT effectively.

This result aligns closely with communicative language teaching theory, which emphasizes the need for teachers to understand not only linguistic content but also interactional patterns, task design, and learner engagement strategies (Richards, 2006). In contexts such as Afghanistan, where traditional, teacher-centered instruction has historically been dominant, pedagogical training serves as a critical mechanism for reshaping instructional beliefs and practices. The strong predictive effect observed in **Table 4** supports Desimone's (2009) argument that content-focused professional development is central to instructional change.

Language proficiency enhancement also demonstrated a significant predictive effect on CLT ($\beta = .29$, $p < .01$; **Table 4**). This finding can be interpreted through teacher cognition and self-efficacy perspectives, which suggest that teachers' confidence in their own language proficiency influences their willingness to engage students in communicative interaction (Borg, 2003). Teachers who feel linguistically confident are more likely to facilitate extended learner talk, manage spontaneous interaction, and tolerate linguistic ambiguity—core features of communicative pedagogy.

Reflective practice further contributed to CLT implementation ($\beta = .21$, $p < .05$; **Table 4**), indicating that teachers who regularly reflect on their teaching and incorporate feedback are better able to adapt communicative strategies to their classroom contexts. This finding reinforces Schön's (1983) concept of reflective practice as a driver of professional growth and supports research showing that reflection helps teachers move beyond procedural adoption toward principled pedagogical use.

Interestingly, **technology integration training** and **peer collaboration** did not retain significant predictive power for CLT in the full regression model (**Table 4**), despite showing positive bivariate correlations (**Table 3**). This suggests that while these dimensions may support CLT indirectly, they are not primary drivers of communicative pedagogy when pedagogical and linguistic factors are accounted for.

Professional Development Dimensions and Technology Integration in Instruction

A different pattern emerged for technology integration in instruction. As shown in **Table 6**, **technology integration training** was the strongest predictor of technology-enhanced EFL instruction ($\beta = .41$, $p < .001$), explaining a substantial portion of variance in teachers' use of digital tools. This finding highlights the importance of targeted, technology-focused professional development for fostering meaningful instructional use of digital resources.

This result is consistent with the **Technological Pedagogical Content Knowledge (TPACK)** framework, which emphasizes that effective technology integration requires explicit development of teachers' technological knowledge alongside pedagogical and content knowledge (Mishra & Koehler, 2006). In the absence of focused training, teachers may possess positive attitudes toward technology but lack the skills necessary to integrate it pedagogically. The strong effect observed in **Table 6** suggests that Afghan EFL teachers rely heavily on formal training to develop confidence and competence in technology-enhanced instruction.

Pedagogical training also emerged as a significant predictor of technology integration ($\beta = .24$, $p < .01$; **Table 6**), indicating that general pedagogical competence supports the effective application of technology. This finding aligns with research suggesting that technology integration is most effective when grounded in sound pedagogical principles rather than treated as a stand-alone skill (Fullan, 2015).

Reflective practice again demonstrated a supportive role ($\beta = .19$, $p < .05$; **Table 6**), suggesting that teachers who critically reflect on their instructional experiences are better able to evaluate the pedagogical value of digital tools and adjust their use accordingly. In contrast, language proficiency enhancement and peer collaboration did not exhibit significant unique effects in the technology integration model, despite their positive correlations (**Table 5**). This pattern indicates that technology-enhanced instruction depends more directly on training and pedagogical alignment than on linguistic confidence or collegial interaction alone.

Comparative Insights Across Instructional Domains

Taken together, the findings demonstrate that **different professional development dimensions matter for different instructional outcomes**. Pedagogical training and language proficiency enhancement are central to communicative pedagogy, while technology integration training is paramount for digital instruction. Reflective practice consistently supports both domains, underscoring its role as a cross-cutting mechanism for instructional adaptation.

These findings extend Desimone's (2009) framework by illustrating how PD features interact with specific instructional practices rather than producing uniform effects. They also support calls in the EFL literature for more

differentiated and purpose-driven professional development designs (Borg, 2018). In fragile higher education contexts, where resources are limited, such differentiation is particularly important to ensure that professional development investments yield maximum pedagogical impact.

Implications for Professional Development Design in Fragile Contexts

The results have important implications for professional development policy and practice in Afghan higher education. Rather than adopting a one-size-fits-all approach, professional development programs should be **strategically aligned with specific instructional goals**. For example, initiatives aimed at strengthening CLT should prioritize pedagogical training and language proficiency enhancement, while programs targeting digital transformation should emphasize technology integration training supported by pedagogical alignment.

Furthermore, the consistent contribution of reflective practice suggests that professional development should incorporate structured reflection opportunities, such as teaching portfolios, peer feedback, and guided self-evaluation. In contexts where formal training opportunities are constrained, such practices can help sustain instructional improvement over time.

CONCLUSION

This study examined how specific professional development (PD) dimensions influence communicative language teaching (CLT) and technology integration in EFL instruction among Afghan university teachers. By disaggregating professional development into pedagogical training, language proficiency enhancement, technology integration training, reflective practice, and peer collaboration, the study moved beyond a generalized view of professional development to identify which components matter most for particular instructional outcomes.

The findings demonstrate that professional development dimensions exert differentiated effects on EFL pedagogy. Pedagogical training and language proficiency enhancement emerged as the strongest predictors of communicative language teaching, highlighting the importance of instructional knowledge and linguistic confidence in facilitating interaction-rich, learner-centered classrooms. In contrast, technology integration in instruction was most strongly predicted by technology-focused professional development, supported by pedagogical training and reflective practice. These results confirm that effective EFL pedagogy does not result from professional development in general, but from targeted and purpose-driven professional learning pathways (Dr. Asghar Ali, et.al 2025).

Importantly, reflective practice functioned as a cross-cutting dimension supporting both CLT and technology integration, underscoring its role in enabling teachers to adapt professional learning to contextual realities. Peer collaboration, while positively correlated with instructional practices, did not emerge as a strong independent predictor in the regression models, suggesting that its influence may be indirect or mediated through other professional development dimensions.

Overall, the study provides robust empirical evidence that professional development must be strategically aligned with instructional goals to maximize its pedagogical impact, particularly in fragile and resource-constrained higher education contexts such as Afghanistan.

Recommendations

Based on the findings, several recommendations are proposed for policymakers, higher education leaders, and professional development providers.

First, professional development programs for EFL teachers should be purpose-specific rather than generic. Initiatives aimed at strengthening communicative language teaching should prioritize pedagogical training and language proficiency enhancement, while programs focused on digital transformation should emphasize technology integration training aligned with pedagogical objectives.

Second, language proficiency development should be treated as a core component of EFL professional development. Enhancing teachers' academic English and communicative confidence can directly support the effective implementation of CLT and reduce reliance on teacher-centered instruction.

Third, professional development related to technology integration should move beyond technical skills to emphasize pedagogical application. Training should focus on how digital tools can support interaction, feedback, formative assessment, and learner autonomy in EFL classrooms.

Fourth, institutions should embed reflective practice within professional development structures by encouraging teaching portfolios, guided reflection, and feedback-oriented evaluation. Such practices can sustain instructional improvement even when formal training opportunities are limited.

Finally, higher education authorities should support institutional coherence and continuity in professional development by ensuring alignment between training initiatives, curriculum reforms, and departmental teaching goals.

Suggestions for Future Research

While this study offers important insights, several directions for future research are suggested. Future studies could adopt mixed-methods or qualitative approaches to explore teachers' lived experiences of professional development and to better understand how specific PD dimensions translate into classroom practice.

Longitudinal research designs would be particularly valuable for examining the sustained impact of professional development on instructional practices over time. In addition, future research could investigate student

perspectives to assess how professional development-driven pedagogical changes influence learner engagement, motivation, and language achievement.

Comparative studies across different regions or countries with similar fragile higher education contexts could further enhance the generalizability of the findings. Finally, future research should explore institutional and policy-level factors—such as leadership support and resource allocation—that mediate the effectiveness of professional development initiatives.

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