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PROFESSIONAL DEVELOPMENT AND INSTRUCTIONAL RESOURCES AS PREDICTORS OF TEACHER COMPETENCE: A QUANTITATIVE STUDY

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ABSTRACT

This quantitative study investigated how professional development and instructional resource practices predict teacher competence among 159 public elementary teachers in the Municipality of Colombio, Sultan Kudarat, for the school year 2025–2026. Employing a descriptive-correlational design with stratified sampling using the Slovin formula, data were gathered through a validated self-developed questionnaire (Cronbach's alpha: .860, .752, and .814) and analyzed using weighted mean, Spearman rho correlation, and multiple linear regression. Findings revealed that teachers were highly practiced in all professional development dimensions: participating in in-service training (WM=4.40), engaging in continuing education (WM=4.58), and receiving coaching or mentoring (WM=4.67). Instructional resource practices were also highly practiced: using adequate teaching materials (WM=4.78), accessing digital tools for instruction (WM=4.76), and using visual aids and learning equipment (WM=4.81). Teachers demonstrated high competence in mastery of subject matter (WM=4.81), using varied teaching strategies (WM=4.83), and actively engaging students (WM=4.86). Spearman rho revealed significant positive relationships between all professional development dimensions and teacher competence dimensions, with coaching and mentoring showing the strongest associations. All instructional resource practices were significantly and positively correlated with all competence dimensions, with visual aids having the strongest correlations. Multiple regression confirmed that in-service training and coaching or mentoring were the most consistent predictors of competence from the professional development side, while all three instructional resource dimensions

significantly influenced subject matter mastery. These findings confirm that both professional development and instructional resources are essential and complementary predictors of teacher competence in the Philippine elementary school context.

KEYWORDS: *Professional Development, Instructional Resources, Teacher Competence, Descriptive-Correlational, Spearman Rho, Multiple Regression, Elementary Teachers*

INTRODUCTION

Growing concerns about the quality of education, especially in developing nations, have highlighted the ongoing gap in teacher competence that negatively impacts student learning. Despite various school reforms, many teachers still lack adequate professional training and the classroom tools needed to be successful. Teacher training is essential for improving pedagogical knowledge and practice, offering ongoing ways to keep up with new school standards and technology (Moussa et al., 2022). Simultaneously, having and properly using the right classroom tools—including digital devices and teaching materials—is key to helping teachers work more effectively and maintaining student engagement (Alotaibi, 2021).

Research consistently demonstrates that ongoing training and appropriate classroom tools significantly improve teacher performance and confidence. Abanikannda et al. (2020) discovered that regular professional development helps teachers deliver better lessons and feel more capable. Nugroho et al. (2022) found that having enough teaching materials and technology improves overall instructional quality. Nevertheless, there remains very limited research examining how teacher training and teaching tools work together to affect overall teacher skill, particularly within the Philippine rural context (Pangandaman et al., 2023). This study addressed that gap by investigating how professional development dimensions and instructional resource practices correlate with and predict teacher competence in Colombio, Sultan Kudarat.

MATERIALS AND METHODS

Research Design

A descriptive-correlational design (Creswell & Creswell, 2018) was employed to describe the levels of professional development, instructional resource practices, and teacher competence, and to examine the relationships and predictive influence between these variables.

Participants

Using stratified sampling proportional to population size via the Slovin formula, 159 elementary teachers from Districts 1 and 2 of the Municipality of Colombo, Sultan Kudarat were selected: District 1 (n=88) and District 2 (n=71). Participants were required to be elementary teachers in the municipality with at least one year of teaching experience and a willingness to participate in the study.

Research Instrument

A self-developed three-part questionnaire assessed: (1) Professional Development ($\alpha=.860$) across three dimensions—participating in in-service training, engaging in continuing education, and receiving coaching or mentoring; (2) Instructional Resources Practices ($\alpha=.752$) across three dimensions—using adequate teaching materials, accessing digital tools for instruction, and using visual aids and learning equipment; and (3) Teacher Competence ($\alpha=.814$) across three dimensions—mastery of subject matter, using varied teaching strategies, and actively engaging students. All items were rated on a 5-point Likert scale (1=Least/Very Slightly Practiced/Competent to 5=Highly Practiced/Competent).

Statistical Analysis

Weighted means described levels of all variables. Spearman rho correlation assessed the direction and magnitude of relationships between predictor and outcome variables. Multiple linear regression identified the significant predictors of each competence dimension from among professional development activities and instructional resource practices.

RESULTS AND DISCUSSION

Level of Professional Development

All three professional development dimensions were rated as highly practiced. Coaching and mentoring registered the highest mean (WM=4.67), followed by continuing education (WM=4.58) and in-service training (WM=4.40). These results indicate strong professional engagement among the teachers in Colombo.

Table 1. Level of Professional Development.

Professional Development Dimension	Weighted Mean	Description
Participating In-Service Training	4.40	Highly Practiced
Engaging in Continuing Education	4.58	Highly Practiced
Receiving Coaching or Mentoring	4.67	Highly Practiced

These findings align with Zhou et al. (2023), who found that consistent professional development is vital for improving teacher expertise, confidence, and effectiveness. The high coaching and mentoring scores conform to Kraft et al. (2021), who emphasized that mentoring and coaching significantly enhance teachers' professional competence and instructional performance.

Level of Instructional Resource Practices

All three instructional resource practice dimensions were rated as highly practiced. Using visual aids and learning equipment was highest (WM=4.81), followed by using adequate teaching materials (WM=4.78) and accessing digital tools (WM=4.76).

Table 2. Level of Instructional Resource Practices.

Instructional Resource Dimension	Weighted Mean	Description
Using Adequate Teaching Materials	4.78	Highly Practiced
Accessing Digital Tools for Instruction	4.76	Highly Practiced
Using Visual Aids and Learning Equipment	4.81	Highly Practiced

These results confirm UNESCO's (2020) finding that well-designed print resources provide structured content and guided practice. The high digital tools scores align with Trust and Whalen (2020), who emphasized that technology integration enhances teaching quality when used purposefully. The particularly high visual aids scores support Mayer (2020), who demonstrated that visual and manipulative-based materials enhance conceptual understanding and engagement.

Level of Teacher Competence

All three competence dimensions were rated as highly competent. Actively engaging students registered the highest mean (WM=4.86), followed by using varied teaching strategies (WM=4.83) and mastery of subject matter (WM=4.81).

Table 3. Level of Teacher Competence.

Teacher Competence Dimension	Weighted Mean	Description
Mastery of Subject Matter	4.81	Highly Competent
Using Varied Teaching Strategies	4.83	Highly Competent
Actively Engaging Students	4.86	Highly Competent

These findings align with König et al. (2020), who asserted that subject mastery and pedagogical knowledge are vital for instructional quality. The high student engagement scores support Lamon et al. (2020), who found that when teachers use collaborative tasks and inquiry-based approaches, students demonstrate greater motivation and superior academic performance.

Relationship between Professional Development and Teacher Competence

Spearman rho revealed significant positive relationships between all professional development dimensions and teacher competence. In-service training correlated significantly with subject mastery ($r=0.202$, $p=0.001$), varied teaching strategies ($r=0.230$, $p<0.001$), and student engagement ($r=0.125$, $p=0.042$). Continuing education showed a significant relationship only with student engagement ($r=0.198$, $p=0.001$). Coaching and mentoring correlated significantly with all three competence dimensions, with the strongest link to student engagement ($r=0.390$, $p<0.001$).

Table 4. Spearman Rho: Professional Development and Teacher Competence.

Professional Development	Subject Mastery	Varied Strategies	Student Engagement
In-Service Training	0.202** (0.001)	0.230** (0.000)	0.125* (0.042)
Continuing Education	ns (0.074)	ns (0.637)	0.198** (0.001)
Coaching or Mentoring	0.123* (0.046)	0.144* (0.019)	0.390** (0.000)

** $p<0.01$; * $p<0.05$; ns=not significant

Relationship between Instructional Resources and Teacher Competence

All instructional resource practice dimensions showed highly significant positive correlations with all teacher competence dimensions ($p<0.001$). Visual aids had the strongest correlation with subject mastery ($r=0.515$) and varied strategies ($r=0.436$), while adequate teaching materials had the strongest correlation with student engagement ($r=0.329$).

Table 5. Spearman Rho: Instructional Resources and Teacher Competence.

Instructional Resources	Subject Mastery	Varied Strategies	Student Engagement
Adequate Teaching Materials	0.261** (0.000)	0.239** (0.000)	0.329** (0.000)
Digital Tools for Instruction	0.436** (0.000)	0.369** (0.000)	0.198** (0.001)
Visual Aids & Learning Equipment	0.515** (0.000)	0.436** (0.000)	0.272** (0.000)

** $p<0.01$

Influence of Professional Development on Teacher Competence

Multiple regression confirmed significant collective influence of professional development on all competence dimensions. For subject mastery ($F=6.086$, $p=0.001$, $R^2=0.065$) and varied teaching strategies ($F=7.365$, $p<0.001$, $R^2=0.078$), in-service training and coaching or mentoring were the significant predictors. For student engagement ($F=12.368$, $p<0.001$, $R^2=0.124$), coaching or mentoring was the sole significant predictor ($\beta=0.203$, $p<0.001$).

Influence of Instructional Resources on Teacher Competence

All three instructional resource dimensions collectively and significantly influenced all competence dimensions. For subject mastery ($F=35.716$, $p<0.001$, $R^2=0.291$), all three resource dimensions were significant predictors. For varied strategies ($F=18.841$, $p<0.001$, $R^2=0.178$), all three were significant. For student engagement ($F=14.788$, $p<0.001$, $R^2=0.145$), adequate teaching materials and visual aids were the significant predictors.

Table 6. Multiple Regression: Instructional Resources Predicting Teacher Competence.

Competence Dimension	Significant Predictors (Resources)	R ²	F	p
Mastery of Subject Matter	All three dimensions	0.291	35.716	0.000**
Varied Teaching Strategies	All three dimensions	0.178	18.841	0.000**
Actively Engaging Students	Adequate Materials; Visual Aids	0.145	14.788	0.000**

** $p<0.01$

These results support Abad and Hattie (2025), who underscored that strategic selection of teaching tools promotes professional development and teacher self-assurance. The strong predictive power of visual aids aligns with Cuenca et al. (2024), who demonstrated that regular integration of visual aids substantially improves professional competence.

CONCLUSION

This study confirms that professional development and instructional resource practices are significant positive correlates and predictors of teacher competence among elementary teachers in Colombia, Sultan Kudarat. Coaching or mentoring emerged as the most consistently significant professional development predictor across all three competence dimensions, while instructional resources—particularly visual aids and adequate teaching materials—demonstrated the strongest predictive power overall, accounting for up to 29.1% of variance in subject matter mastery. Both independent variable sets confirmed the complementary and synergistic nature of professional growth and resource access in building

teacher competence. School leaders and district supervisors should prioritize structured mentoring programs, expand in-service training opportunities, and ensure consistent access to high-quality instructional materials, digital tools, and visual aids to holistically strengthen teacher competence and improve student outcomes.

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