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Professional Learning Communities and Instructional Innovation in Buddhist Religious Education

Hariyanto Hariyanto

hariyanto@radenwijaya.ac.id

Sekolah Tinggi Agama Buddha Negeri Raden Wijaya

Fiska Ilyasir

Universitas Alma Ata

Francisca Xaveria Diah Kristianingsih

Yogyakarta State University

Intan Nuyulis Naeni Puspitasari

Universitas Islam Negeri Syekh Wasil

Kristi Wardani

University of Sarjanawiyata Tamansiswa

Nur Jannah

PILAR Institute for Research and Training

Rizqona Maharani

Universitas Islam Negeri Sunan Kudus

Satriyo Wibowo

Yogyakarta State University

Article

Keywords: Buddhist Religious Education, institutional support, instructional innovation, professional learning community, reflective practice, teacher self-efficacy

Posted Date: November 24th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10911348/v1

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Additional Declarations: No competing interests reported.

Abstract

Professional teacher forums are expected to support instructional change, yet their contribution depends on whether collaboration is converted into reflection, confidence, and school-enabled action. This study examines how professional learning community participation is associated with instructional innovation among Buddhist Religious Education teachers. Using a cross-sectional survey of 250 teachers, it tests reflective practice and teacher self-efficacy as serial mediators and institutional support as a moderator. The measurement model showed satisfactory validity and reliability. Structural analysis indicated that professional learning community participation was positively associated with reflective practice and instructional innovation. Reflective practice was positively associated with teacher self-efficacy, and teacher self-efficacy was positively associated with instructional innovation. The serial indirect pathway through reflective practice and teacher self-efficacy was significant, indicating that professional forums become innovation-relevant when collaboration is linked to teachers' reflective interpretation of practice and confidence for pedagogical action. Institutional support strengthened the association between professional learning community participation and instructional innovation. The findings advance understanding of educational change by showing that teacher forums are not change mechanisms by attendance alone. In Buddhist Religious Education, instructional innovation is more likely when professional collaboration, reflective practice, self-efficacy, and school-level support operate as an integrated system.

1. Introduction

Teacher professional development is often judged through visible routines: meetings are scheduled, attendance is recorded, topics are delivered, and teachers are expected to improve practice afterward. These indicators are administratively useful, but they do not tell us whether professional learning has occurred. The educational significance of a teacher forum depends on whether participation creates occasions for teachers to examine problems of practice, exchange situated knowledge, and redesign instruction in ways that students can experience. Research on teacher collaboration has increasingly shown that collaborative work is associated with instructional improvement when it involves professional dialogue, shared inquiry, and school conditions that allow professional knowledge to circulate, rather than when it is limited to exchange and coordination (Cravens et al., 2017; Horn & Kane, 2015; Pan et al., 2024; Woodland et al., 2013).

This issue is especially important for Buddhist Religious Education because the subject demands more than the transmission of doctrinal information. Teachers are expected to help students understand ethical concepts, connect religious ideas with lived experience, and cultivate dispositions such as compassion, mindfulness, responsibility, and reflective conduct. Instructional innovation in this subject therefore cannot be reduced to technological novelty or occasional variation in classroom activity. It involves the teacher's capacity to make religious learning intellectually engaging, ethically meaningful, and pedagogically responsive. Studies in religious education more broadly emphasize the need for pedagogies that enable critical religious thinking, contextual interpretation, deep pondering, authentic student choice, and dialogical engagement with religious material (Irwin & Van Oploo, 2026; Wang, 2013; Wedell, 2010; Zembylas et al., 2018).

The literature offers strong reasons to connect teacher collaboration with instructional innovation. Large-scale evidence indicates that school innovativeness is associated with teacher collaboration, innovative classroom practices, and job satisfaction (Blömeke et al., 2021). Studies using TALIS data show that professional collaboration has stronger associations with school innovativeness and innovative teaching than lower-level forms of exchange and coordination (Pan et al., 2024). In Asian educational contexts, distributed leadership has been linked to teacher innovation through collaboration and teacher self-efficacy, suggesting that innovation is embedded in both organizational conditions and teachers' agency (Teng et al., 2024). Research on STEM instructional improvement also identifies teacher collaboration, pedagogical content knowledge, and attention to how students learn as important features of stronger instructional programs (Lynch et al., 2019). In Indonesia, pedagogical innovation and teacher collaboration have also been examined as factors related to student learning success, with results suggesting that teacher collaboration can strengthen the development of innovative learning methods and teacher-student interaction (Budirahayu & Saud, 2023).

At the same time, this literature cautions against assuming that all collaboration produces the same professional learning. Horn and Kane (2015) demonstrated that opportunities for professional learning in teacher workgroup conversations are uneven and depend on the quality of pedagogical problem framing and interaction. Cravens et al. (2017) found that protocol-guided peer groups can strengthen deprivatized practice and instructional collaboration when sufficient support and guidance are present. Woodland and Mazur (2019) showed that formal and informal instructional support networks are shaped by school leaders' organizational design, while Woodland et al. (2021) argued that the diffusion of instructional innovation depends on the structure and connectivity of teacher networks. The central question, then, is not whether teachers collaborate, but what kind of collaboration occurs, what it changes in teachers' professional thinking, and under what institutional conditions it becomes actionable.

The present study begins from that problem. The initial empirical dataset indicated a positive association between teacher forum activity and instructional innovation among Buddhist Religious Education teachers. Yet a direct two-variable model is limited because it treats teacher forum participation as if it moves automatically into classroom renewal. Such a model can show that a relationship exists, but it does not explain how the relationship operates. It also neglects the possibility that school-level support may determine whether ideas generated in a professional forum can be translated into classroom action. This manuscript therefore reconstructs the initial relationship into a more explanatory model: Professional Learning Community Participation is positioned as the enabling professional environment, Reflective Practice and Teacher Self-Efficacy are modeled as serial mediators, and Institutional Support is modeled as a contextual moderator.

Professional Learning Community Participation is conceptualized as more than meeting attendance. It refers to teachers' experience of the forum as a space for collaborative dialogue, joint problem solving, pedagogical resource sharing, and inquiry-oriented professional learning. This definition is consistent with measurement work that operationalizes teacher collaboration through dialogue, decision making, collective action, and evaluation (Woodland et al., 2013), and with evidence that professional collaboration has stronger links to innovative teaching than routine coordination (Pan et al., 2024). In the present context, a

professional forum becomes meaningful when it helps teachers discuss classroom problems, interpret student learning needs, develop instructional resources, and test new pedagogical possibilities.

Reflective Practice is introduced as the first mechanism because teacher learning requires more than exposure to ideas. Teachers must examine the assumptions behind their practice, interpret evidence from students' responses, and revise instructional decisions. Professional development models based on collaborative inquiry and self-regulation indicate that teachers can make important instructional shifts when reflection is embedded in a learning community (Butler et al., 2004). Action research and reflective peer coaching studies also show that structured reflection can expand conceptions of teaching and support formative improvement in practice (Kitchen & Stevens, 2008; Vidmar, 2005). In religious education, reflection is particularly relevant because teachers must interpret not only whether students remember content, but whether learning enables meaning, reasoning, and ethical understanding.

Teacher Self-Efficacy is introduced as the second mechanism because reflection alone does not guarantee innovation. Teachers may know that a lesson needs revision but still hesitate to experiment if they doubt their capacity to manage uncertainty, student engagement, or diverse classroom responses. Research on innovative teaching has repeatedly identified self-efficacy as a key mediator or predictor. Koo and Yoo (2025) identified teacher collaboration, self-efficacy, and supportive school climate as important predictors of team innovativeness. Teng et al. (2024) found that collaboration and teacher self-efficacy form a chain mediating pathway toward teacher innovation. Wang (2025) further showed that teacher self-efficacy mediates the relationship between teacher-student relationships and innovative teaching while teacher collaboration moderates the process.

Instructional Innovation is defined broadly as renewal in lesson design, methods, media, learning resources, assessment, feedback, experimentation, and flexibility. This broad definition is necessary because innovation in religious education may include new forms of dialogical discussion, contextualized moral problems, student reflection, cooperative learning, formative feedback, and varied assessment rather than digital tools alone. Studies on innovative learning environments show that the benefit of innovative spaces depends not simply on physical design but on teachers' capacity to exploit pedagogical affordances through groupings, interaction, and collaboration (Alakoski et al., 2025; Correia & Cavadas, 2024; Fletcher et al., 2025; Nelson & Charteris, 2025).

Institutional Support is included as a moderator because professional learning is enacted within schools. Teachers may gain ideas from professional forums, but implementation requires time, resources, leadership encouragement, professional openness, and policy space. Evidence from school climate studies indicates that teacher collaboration, student relations, and instructional innovation are positively associated with adaptive instruction (Kouhsari et al., 2024). Studies of leadership and innovation similarly suggest that supportive and collaborative school environments empower teachers to innovate (Ma & Zhang, 2025; Teng et al., 2024). In religious education, institutional context can also affect how teachers translate curricular or moral aims into concrete pedagogy, as implementation varies with teacher capacity, local culture, and institutional policy (Arif et al., 2026; Stodolsky et al., 2008).

Three research gaps guide the article. First, although teacher collaboration has been widely examined, much of the strongest evidence comes from general school improvement, mathematics, STEM, or large-scale international datasets. Religious education has received less attention as a site of teacher innovation, even though its pedagogical aims are distinctive. Second, existing studies often connect collaboration with innovation but do not always specify the teacher-level mechanisms that transform collaboration into action. Third, institutional support is frequently discussed as background context, yet it may function as a boundary condition. The same professional forum may have different implications depending on whether schools provide the conditions for experimentation.

On the basis of this logic, eight hypotheses were tested. Professional Learning Community Participation was expected to be positively associated with Instructional Innovation and Reflective Practice. Reflective Practice was expected to be positively associated with Teacher Self-Efficacy, and Teacher Self-Efficacy was expected to be positively associated with Instructional Innovation. Reflective Practice was expected to mediate the association between Professional Learning Community Participation and Teacher Self-Efficacy. Teacher Self-Efficacy was expected to mediate the association between Reflective Practice and Instructional Innovation. The serial pathway from Professional Learning Community Participation to Instructional Innovation through Reflective Practice and Teacher Self-Efficacy was expected to be positive. Finally, Institutional Support was expected to strengthen the association between Professional Learning Community Participation and Instructional Innovation. The conceptual model is shown in Fig. 1.

2. Methods

The study used a quantitative explanatory survey design. This design was appropriate because the research aimed to test theoretically specified relationships among latent constructs using numerical data from teachers. The design was cross-sectional; therefore, the analysis estimates associations among constructs within one measurement period rather than changes across time. The model was not intended to prove temporal causality. It tested whether the hypothesized pattern of direct effects, serial mediation, and moderation was consistent with the observed data.

The study was conducted in Central Java and the Special Region of Yogyakarta, Indonesia, where participating Buddhist Religious Education teachers were recruited through active professional teacher forum networks. The population of interest consisted of Buddhist Religious Education teachers who were actively teaching and involved in professional teacher forums. Because no complete centralized registry of all eligible teachers was available to the research team, a probability sample could not be constructed. A purposive multi-stage sampling logic was therefore applied. First, teacher networks in which professional forums were active were identified. Second, eligible school contexts and forum groups were mapped with the assistance of local professional networks. Third, individual respondents were invited if they met four inclusion criteria: active teaching status in Buddhist Religious Education, at least one year of teaching experience, participation in professional forum activities at least three times during the recent professional cycle, and willingness to complete the questionnaire voluntarily.

The final dataset consisted of 250 complete responses: 190 teachers (76.0%) from Central Java and 60 (24.0%) from the Special Region of Yogyakarta. The study used only complete questionnaires in the final

analysis. Because recruitment was conducted through professional forum networks and the exact number of teachers who received the invitation could not be verified independently, a conventional response rate cannot be calculated. This limitation is reported to prevent overstatement of sampling precision. To maintain participant confidentiality, specific school names and institutional identifiers are not disclosed; regional locations are reported because they are necessary to describe the study setting.

The measurement model consisted of five constructs. Professional Learning Community Participation measured teachers' perception that professional forums provided meaningful collaborative dialogue, joint problem solving, pedagogical resource sharing, and inquiry-oriented meeting culture. Reflective Practice measured teachers' habits of reviewing teaching outcomes, interpreting student learning needs, revising strategies, and using evidence or feedback to improve instruction. Teacher Self-Efficacy measured teachers' confidence in selecting instructional strategies, maintaining student engagement, and adapting teaching to classroom diversity. Instructional Innovation measured renewal in lesson design, methods, media, assessment, feedback, experimentation, and flexibility. Institutional Support measured leadership encouragement, time and resource support, professional climate, and policy encouragement for innovation.

All construct items used a five-point agreement scale ranging from strong disagreement to strong agreement. Negatively worded items were reverse-coded before analysis so that higher scores consistently represented stronger levels of the construct. The instrument was developed from the initial research framework and then refined to distinguish participation quality, reflection, efficacy, innovation, and institutional support. This decision reflects prior measurement work showing that teacher collaboration is multidimensional and should capture dialogue, decision making, action, and evaluation (Woodland et al., 2013). The instrument structure, item counts, dimensions, and sample items are reported in Table 1.

Table 1
Measurement constructs, item structure, and sample questionnaire items.

Construct	Items	Dimensions	Sample item
Professional Learning Community Participation	12	Collaborative dialogue; joint problem solving; pedagogical resource sharing; inquiry-oriented meeting culture	Professional forums give me meaningful opportunities to discuss teaching problems.
Reflective Practice	8	Reflection on teaching outcomes; reflection on student learning needs; revision of lesson strategies; evidence-based pedagogical adjustment	After teaching, I review which parts of the lesson worked well and which did not.
Teacher Self-Efficacy	9	Efficacy in instructional strategies; efficacy in student engagement; efficacy in adaptive teaching	I am confident that I can adapt instruction for students with different abilities.
Instructional Innovation	12	Innovative lesson design; diverse methods and media; experimentation and flexibility; innovative assessment and feedback	I modify learning activities so that they respond more closely to students' needs.
Institutional Support	8	Leadership support; resource and time support; professional climate; policy encouragement	The school provides support when teachers try new instructional strategies.
Note. Negatively worded items were reverse-coded before analysis.			

Content validation was conducted through expert review of construct definitions, item relevance, wording clarity, and contextual appropriateness for Buddhist Religious Education teachers. Pilot testing was used to identify ambiguous wording and to verify that respondents could complete the questionnaire without assistance. The pilot stage also confirmed the need to retain negatively worded items to reduce response patterning, while making sure that reverse coding was conducted before statistical analysis.

Data screening involved checking completeness, response consistency, coding accuracy, and reverse-coded items. The final analytic dataset contained no missing values because incomplete questionnaires were excluded before modeling. Descriptive analysis summarized respondent characteristics and construct means. Measurement model evaluation preceded structural testing because relationships among constructs are interpretable only when the constructs are measured adequately. Convergent validity was evaluated using indicator loading ranges and Average Variance Extracted. Discriminant validity was evaluated using the Fornell-Larcker pattern and the Heterotrait-Monotrait ratio. Reliability was evaluated using Cronbach's alpha and composite reliability.

Structural analysis was conducted using a partial least squares structural equation modeling approach. The procedure tested four direct pathways: Professional Learning Community Participation to Instructional Innovation, Professional Learning Community Participation to Reflective Practice, Reflective Practice to Teacher Self-Efficacy, and Teacher Self-Efficacy to Instructional Innovation. Mediation analysis tested whether Reflective Practice and Teacher Self-Efficacy transmitted the association between Professional

Learning Community Participation and Instructional Innovation. Moderation analysis tested whether Institutional Support strengthened the pathway from Professional Learning Community Participation to Instructional Innovation. The significance of direct, indirect, and interaction effects was assessed using bootstrapping with 5,000 resamples. Model evaluation included path coefficients, standard errors, confidence intervals, p values, R^2, collinearity diagnostics, and effect-size interpretation.

The study treats self-report data with caution. Questionnaire responses provide valuable evidence of teachers' perceptions, but perceptions are not identical to observed classroom practice. For this reason, the analysis does not claim that teachers objectively implemented all forms of innovation at the levels they reported. Instead, the results are interpreted as evidence of perceived professional learning, perceived self-efficacy, and perceived innovation. This interpretive caution is consistent with the cross-sectional survey design and with the need to avoid overstating what the data can establish.

3. Results

The respondent profile indicates a professionally mature sample. Male teachers represented 53.6% of respondents and female teachers 46.4%. The largest age group was 35–44 years, followed by 45–54 years. Most respondents taught at the primary level, while the remainder taught at lower secondary level. Most had more than ten years of teaching experience, suggesting that the dataset largely captured teachers with sustained exposure to classroom practice and professional forums. Participation in professional forums was distributed across low, moderate, and high categories, with the moderate category being the largest. Table 2 reports the respondent profile and construct descriptives.

Table 2
Respondent profile and descriptive statistics of the study constructs.

Panel or variable	Category or statistic	Value
Respondent profile	Total valid responses	250
Gender	Male	134 (53.6%)
Gender	Female	116 (46.4%)
Age group	25–34	47 (18.8%)
Age group	35–44	85 (34.0%)
Age group	45–54	76 (30.4%)
Age group	55 and above	42 (16.8%)
Teaching level	Primary	151 (60.4%)
Teaching level	Lower secondary	99 (39.6%)
Employment status	Civil servant	168 (67.2%)
Employment status	Non-civil servant	82 (32.8%)
Teaching experience	1–5 years	35 (14.0%)
Teaching experience	6–10 years	32 (12.8%)
Teaching experience	More than 10 years	183 (73.2%)
Forum participation	Low	76 (30.4%)
Forum participation	Moderate	93 (37.2%)
Forum participation	High	81 (32.4%)
Region	Central Java	190 (76.0%)
Region	Special Region of Yogyakarta	60 (24.0%)
Construct descriptives	PLC Participation, mean (SD)	4.290 (0.822)
Construct descriptives	Reflective Practice, mean (SD)	4.333 (0.780)
Construct descriptives	Teacher Self-Efficacy, mean (SD)	4.464 (0.694)
Construct descriptives	Instructional Innovation, mean (SD)	4.692 (0.502)
Construct descriptives	Institutional Support, mean (SD)	4.264 (0.822)

Note. Specific school names and institutional identifiers are not reported to preserve participant confidentiality.

Construct descriptives showed generally positive perceptions. Instructional Innovation had the highest mean score, followed by Teacher Self-Efficacy, Reflective Practice, Professional Learning Community Participation, and Institutional Support. The relatively high mean for Instructional Innovation suggests that respondents

perceived themselves as engaging in pedagogical renewal. Institutional Support had the lowest mean among the five constructs, indicating that school-level support may be less consistently experienced than individual willingness, professional reflection, or teacher confidence. Figure 2 visualizes the construct means with standard-deviation bars.

The measurement model showed satisfactory psychometric quality. Average Variance Extracted values were 0.744 for Professional Learning Community Participation, 0.767 for Reflective Practice, 0.712 for Teacher Self-Efficacy, 0.659 for Instructional Innovation, and 0.733 for Institutional Support. These values indicate that the indicators within each construct converged around the latent variable they were intended to measure. The reliability results were also strong, with Cronbach's alpha values ranging from 0.946 to 0.968 and composite reliability values ranging from 0.956 to 0.972. Figure 3 summarizes AVE, Cronbach's alpha, and composite reliability for the five constructs.

Discriminant validity was supported by the Fornell-Larcker pattern and HTMT values. The square roots of AVE exceeded the correlations between each construct and other constructs. HTMT values were below the accepted threshold, with the largest value remaining below 0.85. This result is important because reflective practice, teacher self-efficacy, and instructional innovation are conceptually related but not identical. The model therefore does not merely relabel the same professional tendency across different constructs; it distinguishes reflection, confidence, innovation, collaboration, and institutional support as empirically separable dimensions. Detailed measurement statistics are reported in Table 3 and discriminant-validity evidence is reported in Table 4.

Table 3
Measurement model summary.

Construct	Loading range	AVE	Alpha	CR	Decision
PLC Participation	0.814–0.898	0.744	0.968	0.972	Met
Reflective Practice	0.853–0.911	0.767	0.955	0.963	Met
Teacher Self-Efficacy	0.784–0.888	0.712	0.947	0.957	Met
Instructional Innovation	0.778–0.868	0.659	0.949	0.959	Met
Institutional Support	0.826–0.889	0.733	0.946	0.956	Met

Note. AVE = Average Variance Extracted; CR = Composite Reliability.

Table 4
Discriminant validity: Fornell-Larcker matrix and HTMT summary.

Construct	PLC	RP	TSE	II	IS	HTMT summary
PLC Participation	0.863	0.603	0.384	0.457	0.305	Max HTMT = 0.694
Reflective Practice	0.603	0.876	0.618	0.566	0.148	Max HTMT = 0.726
Teacher Self-Efficacy	0.384	0.618	0.844	0.694	0.069	Max HTMT = 0.726
Instructional Innovation	0.457	0.566	0.694	0.812	0.012	Max HTMT = 0.704
Institutional Support	0.305	0.148	0.069	0.012	0.856	Max HTMT = 0.331

Note. Diagonal values are square roots of AVE. All HTMT values were below the conservative 0.85 threshold.

The structural model supported all hypothesized direct paths. Professional Learning Community Participation was positively associated with Instructional Innovation ($\beta = 0.287$, $p < .001$). This indicates that teachers who experienced professional forums as meaningful collaborative spaces were more likely to report innovative instructional practice. Professional Learning Community Participation also had a strong positive relationship with Reflective Practice ($\beta = 0.603$, $p < .001$), suggesting that professional forums function most clearly as spaces in which teachers examine and refine their teaching.

Reflective Practice was positively associated with Teacher Self-Efficacy ($\beta = 0.618$, $p < .001$). Teachers who reviewed their teaching outcomes, analyzed student needs, and revised instructional strategies tended to report stronger confidence in their professional capacity. Teacher Self-Efficacy was positively associated with Instructional Innovation ($\beta = 0.609$, $p < .001$). The strength of this path indicates that confidence is a central enabler of innovation. Teachers who believe they can adapt strategies and maintain engagement appear more willing to experiment with methods, media, activities, and assessment.

The mediation tests clarified the mechanism. The indirect pathway from Professional Learning Community Participation to Teacher Self-Efficacy through Reflective Practice was significant ($\beta = 0.373$, $p < .001$). The indirect pathway from Reflective Practice to Instructional Innovation through Teacher Self-Efficacy was also significant ($\beta = 0.376$, $p < .001$). Most importantly, the serial pathway from Professional Learning Community Participation to Instructional Innovation through Reflective Practice and Teacher Self-Efficacy was significant ($\beta = 0.227$, $p < .001$). This result is consistent with the argument that professional forums become innovation-relevant when they are associated with teachers' reflection and confidence for pedagogical action.

The moderation test showed that Institutional Support strengthened the relationship between Professional Learning Community Participation and Instructional Innovation ($\beta = 0.192$, $p < .001$). The positive interaction indicates that the association between professional forum participation and innovation is stronger when teachers perceive their schools as supportive of pedagogical change. This finding aligns with research showing that school climate, leadership, collaboration, and supportive institutional conditions are important for adaptive instruction and teacher innovation (Koo & Yoo, 2025; Kouhsari et al., 2024; Ma & Zhang, 2025; Teng et al., 2024).

The model explained a moderate and educationally meaningful proportion of variance. Professional Learning Community Participation explained 36.4% of the variance in Reflective Practice. Reflective Practice explained 38.2% of the variance in Teacher Self-Efficacy. Professional Learning Community Participation, Teacher Self-Efficacy, Institutional Support, and the interaction term together explained 56.7% of the variance in Instructional Innovation. In teacher education research, this level of explained variance is meaningful because instructional behavior is shaped by multiple individual, organizational, curricular, and contextual factors. Table 5 summarizes the structural paths, indirect effects, moderation result, and model diagnostics; Fig. 4 displays the standardized structural coefficients.

Table 5
Structural paths, indirect effects, moderation, and model diagnostics.

Path	β	SE	95% CI	t	p	Test	Decision	VIF	f^2
PLC Participation -> Instructional Innovation	0.287	0.047	[0.194, 0.380]	6.079	< .001	Direct path	Supported	1.32	0.10
PLC Participation -> Reflective Practice	0.603	0.051	[0.504, 0.702]	11.907	< .001	Direct path	Supported	1.00	0.57
Reflective Practice -> Teacher Self-Efficacy	0.618	0.050	[0.520, 0.716]	12.382	< .001	Direct path	Supported	1.00	0.62
Teacher Self-Efficacy -> Instructional Innovation	0.609	0.045	[0.520, 0.698]	13.391	< .001	Direct path	Supported	1.58	0.64
PLC -> RP -> TSE	0.373	0.046	[0.282, 0.464]	8.029	< .001	Indirect path	Supported	—	—
RP -> TSE -> II	0.376	0.044	[0.290, 0.462]	8.540	< .001	Indirect path	Supported	—	—
PLC -> RP -> TSE -> II	0.227	0.032	[0.164, 0.290]	7.013	< .001	Serial indirect path	Supported	—	—
PLC x Institutional Support -> II	0.192	0.039	[0.115, 0.269]	4.899	< .001	Moderation path	Supported	1.21	0.09

Note. Confidence intervals were derived from bootstrapped standard errors. R^2 values were 0.364 for Reflective Practice, 0.382 for Teacher Self-Efficacy, and 0.567 for Instructional Innovation. All inner VIF values were below 3.3.

4. Discussion

The findings provide a more nuanced account of how professional teacher forums relate to instructional innovation. The direct association between Professional Learning Community Participation and Instructional Innovation confirms that professional forums can matter for teachers' classroom renewal. However, the more important contribution is not the direct effect itself. It is the demonstration that the direct relationship is part of a larger professional process. Innovation is not simply an outcome of attending meetings; it is associated with what participation does to teachers' interpretation of practice, their confidence in adapting instruction, and the institutional conditions that allow ideas to be implemented.

The strong path from Professional Learning Community Participation to Reflective Practice suggests that the most immediate value of a professional forum may lie in its capacity to disrupt unexamined routine. A forum that only distributes information may reinforce compliance without improving pedagogy. A forum that asks teachers to analyze student learning difficulties, compare classroom experiences, examine lesson materials, and discuss failed strategies can cultivate a reflective stance. This interpretation is consistent with Butler et al. (2004), who described collaborative inquiry as a professional development model that can support shifts in practice, and with Vidmar's (2005) argument that reflective peer coaching improves teaching through frequent formative conversations about goals and teaching experience.

In Buddhist Religious Education, the reflective function of professional forums is especially significant. Teachers must attend to students' understanding of concepts, but they must also consider how learning shapes ethical reasoning, affective engagement, and conduct. Such outcomes are difficult to improve through routine delivery of content. Studies in religious education show that teachers often need support to foster critical religious thinking, enact interpretive pedagogies, and connect religious material with students' experience (Wang, 2013; Wedell, 2010; Zembylas et al., 2018). The present findings suggest that professional forums can support this work when they become spaces for reflecting on what students actually understand, how they respond, and what forms of instruction make religious learning meaningful.

The link between Reflective Practice and Teacher Self-Efficacy indicates that confidence is associated with the interpretation of experience. This is important because teacher self-efficacy is sometimes treated as an individual psychological characteristic detached from professional learning. In this model, self-efficacy is linked to reflective practice. Teachers who can identify why a lesson worked, why students were disengaged, or how a strategy could be adjusted are more likely to believe that they can manage future instructional challenges. This finding resonates with research showing that self-efficacy is an important predictor of team innovativeness and innovative teaching (Koo & Yoo, 2025; Wang, 2025).

The strong association between Teacher Self-Efficacy and Instructional Innovation confirms that confidence is not peripheral to pedagogical change. Innovation requires teachers to act under uncertainty. They must try unfamiliar methods, manage student responses, adapt materials, and accept the possibility that a strategy may need revision. Teachers with stronger self-efficacy are more likely to interpret these challenges as manageable rather than threatening. This aligns with studies showing that teacher self-efficacy forms part of the pathway through which collaboration and leadership contribute to innovation (Teng et al., 2024; Wang, 2025). In the present study, self-efficacy appears to be the point at which reflection becomes more closely associated with action.

The serial mediation result is the central theoretical contribution of the article. It shows that professional learning community participation is associated with instructional innovation through a sequence: collaboration is linked to reflection, reflection is linked to efficacy, and efficacy is linked to innovation. Each stage responds to a different barrier. Collaboration reduces professional isolation. Reflection addresses unexamined routine. Self-efficacy reduces uncertainty and fear of failure. Innovation becomes more plausible when these conditions align. This process model extends the initial direct association between teacher forums and innovation by explaining why professional forums may generate classroom change in some contexts but remain administratively routine in others.

This process-based interpretation is consistent with studies of teacher collaboration showing that the quality of interaction matters. Horn and Kane (2015) found that opportunities for learning in teacher workgroup conversations are not equally distributed and depend on how teachers frame and discuss pedagogical problems. Pan et al. (2024) distinguished professional collaboration from exchange and coordination, showing that deeper collaboration is more strongly related to school innovativeness and innovative teaching. Cravens et al. (2017) similarly emphasized protocol-guided collaboration that makes practice public and sharable. The present study contributes by showing that in Buddhist Religious Education, collaboration appears to become consequential through reflection and self-efficacy.

The moderation effect of Institutional Support adds a second layer to the interpretation. Professional forums do not operate in isolation from schools. Teachers may develop new ideas through collaborative discussion, but those ideas require implementation conditions. If school leaders discourage experimentation, if schedules leave no time for planning, if resources are unavailable, or if colleagues treat instructional change as disruption, the professional learning generated in forums may remain outside the classroom. The positive moderation finding suggests that institutional support amplifies the association between professional learning community participation and innovation.

This finding aligns with research on school innovativeness and supportive climate. Blömeke et al. (2021) found that innovative schools were associated with better outcomes in teacher collaboration, teaching practices, and job satisfaction. Kouhsari et al. (2024) found positive associations between dimensions of school climate and adaptive instruction. Ma and Zhang (2025) showed that leadership shapes teaching innovation through collaboration and social-emotional beliefs, while Teng et al. (2024) identified collaboration and self-efficacy as mediators of the relationship between distributed leadership and teacher innovation. In the present study, institutional support does not replace teacher collaboration; it strengthens the conditions under which collaboration becomes classroom innovation.

The comparatively lower mean for Institutional Support is also practically important. Teachers reported high levels of innovation, self-efficacy, reflection, and professional learning participation, but institutional support was the lowest of the five constructs. This pattern may indicate that teachers' willingness to innovate is developing faster than the school structures that sustain innovation. If so, professional development policy should not focus only on improving forums. It should also ensure that schools provide protected time, leadership encouragement, access to materials, opportunities for peer observation, and recognition of experimentation as legitimate professional work.

The results have direct implications for the design of professional teacher forums. First, forums should be organized around authentic instructional problems. Teachers should bring lesson cases, student learning difficulties, assessment dilemmas, and examples of instructional materials to the forum. Second, meetings should include structured reflection rather than only presentation. Teachers can compare strategies, identify the assumptions behind their choices, and discuss how student responses should guide revision. Third, forums should create follow-up cycles. Ideas generated in one meeting should be tested in classrooms and then reviewed in later meetings. Evidence from peer coaching and collaborative professional development suggests that repeated cycles of planning, action, reflection, and refinement can support instructional change (Kohler et al., 1997; Vidmar, 2005).

A useful way to translate the findings into practice is to design teacher forums around an explicit theory of change. The first stage is collaborative exposure: teachers encounter alternative strategies, materials, and interpretations of classroom problems. The second stage is reflective processing: teachers examine why a strategy might work, what students need, and how a lesson could be revised. The third stage is efficacy formation: teachers gain confidence through peer feedback, manageable trials, and evidence that change is possible. The fourth stage is instructional enactment: teachers implement innovations in lesson design, interaction, assessment, and feedback. The fifth stage is institutional consolidation: schools protect time, resources, and professional recognition so that innovation can continue.

The model also suggests that professional forums should be evaluated by the quality of professional learning opportunities they create. A forum with many participants but little inquiry may be less effective than a smaller forum that engages deeply with pedagogical evidence. The most valuable meetings are likely to be those in which teachers make practice visible, analyze actual student responses, compare alternatives, and return to later meetings with evidence from implementation. Sustained team-focused professional development is important because collaboration evolves through shared experience and requires ongoing support, particularly when teachers must coordinate roles and develop common understandings of practice (Liebech & Andersen, 2026).

Forum leadership should avoid treating experienced teachers only as speakers. Their role can be redesigned as facilitators of peer inquiry. Productive facilitation requires helping colleagues articulate problems, make practice visible, and examine alternatives. Such facilitation is consistent with the idea of teacher communities as spaces where teachers jointly construct and deepen the meaning of effective teaching (Cravens et al., 2017). It also responds to concerns that professional learning opportunities are unevenly distributed within teacher groups (Horn & Kane, 2015). A forum becomes stronger when it prevents passive attendance and encourages all teachers to participate in inquiry.

The study also has implications for school leaders. Leadership support should not be limited to giving teachers permission to attend forums. It should include building an institutional bridge between forum learning and classroom practice. School leaders can allocate time for collaborative planning, encourage teachers to document classroom experiments, create safe spaces for discussing unsuccessful attempts, and align forum outputs with school improvement planning. Studies of formal and informal networks show that leaders influence the quality of instructional support by designing how teachers connect, seek advice, and participate in teams (Woodland & Mazur, 2019; Woodland et al., 2021). Culturally responsive

professional learning communities can likewise support instructional improvement when they affirm teacher identity and connect pedagogy with the community served by the school (Williams, 2025).

For Buddhist Religious Education teachers, the findings suggest that instructional innovation should remain pedagogically and ethically purposeful. Innovation may involve dialogic exploration of Buddhist values, collaborative interpretation of moral dilemmas, reflective journals, student-led inquiry, project-based engagement with community issues, differentiated assessment, and feedback that helps students connect learning with conduct. Such designs require teachers to move beyond text-centered explanation while still preserving the formative aims of religious education. Related studies in religious education show that pedagogical renewal can involve deep pondering, authentic choice-making, argumentation, contextualization, and teacher collaboration across schools (Hunting et al., 2026; Irwin & Van Oploo, 2026; Wedell, 2010). Productive collaboration also requires a shared vision of good instruction; otherwise, collaborative relationships may not yield meaningful pedagogical improvement (Platt, 1993).

The emotional dimension of collaboration also deserves attention. Teacher collaboration involves professional identity, expectations, vulnerability, and sometimes tension. Weddle et al. (2019) showed that emotions shape and are shaped by teachers' collaborative efforts to improve instruction, while Weddle (2023) emphasized that team emotion changes over time and is mediated by group norms and contextual factors. Although the present model did not measure emotion directly, the moderation effect of institutional support and the role of self-efficacy suggest that professional learning communities need psychologically safe climates. Teachers are more likely to discuss difficulties honestly and try new approaches when collaboration does not threaten their professional identity.

The findings also refine how instructional innovation should be measured. A narrow technology-oriented measure would be insufficient. Studies of innovative learning environments show that the environment itself is not enough; teachers' use of pedagogical affordances, collaboration, flexible groupings, and adaptive teaching are what shape interaction and emotional climate (Alakoski et al., 2025; Correia & Cavadas, 2024; Fletcher et al., 2025). For Buddhist Religious Education, innovation may be low-cost and conceptually rich: a redesigned discussion sequence, a moral dilemma activity, a formative feedback routine, or a reflective student task. Measurement should therefore capture redesign, adaptation, assessment, feedback, and student engagement, not only technology adoption.

At the policy level, professional forums should not be assessed only by meeting frequency, attendance lists, or completion of administrative programs. A stronger evaluation system would examine whether forums generate classroom-oriented outputs: revised lesson plans, peer-reviewed teaching materials, reflective notes, student response evidence, assessment tasks, and documented classroom trials. Woodland et al. (2021) showed that organizational leaders can use network information to strengthen the diffusion of instructional innovation. Similar logic can be applied to professional teacher forums: policy should examine whether knowledge actually travels through professional networks and enters classroom practice.

The study has limitations. The cross-sectional design does not establish temporal causality. The serial model is theoretically meaningful, but longitudinal data would be needed to show how participation leads to later reflection, how reflection builds subsequent self-efficacy, and how self-efficacy produces observed

innovation over time. The study also relies on self-reported perceptions. Teachers may overestimate innovation or report socially desirable responses. Future research should include classroom observation, lesson artifacts, student feedback, and interviews to examine how reported innovation appears in actual teaching.

A further limitation concerns sampling and setting. Participants were recruited purposively through professional forum networks in Central Java and the Special Region of Yogyakarta, and a conventional response rate could not be calculated. The findings therefore should not be treated as statistically representative of all Buddhist Religious Education teachers in Indonesia. Replication with probability-based or broader multi-region samples is needed.

Another limitation concerns the scope of variables. The model explained more than half of the variance in Instructional Innovation, but it did not include all possible influences. Leadership style, curriculum requirements, digital infrastructure, student characteristics, teachers' professional identity, religious community expectations, and assessment policy may also shape innovation. Future studies can extend the model by testing additional mediators and moderators. Comparative studies can examine whether the same serial pathway applies in other forms of religious education, general moral education, or different school levels.

Despite these limitations, the study offers a process account of professional learning and instructional change. Professional learning communities are not valuable simply because they gather teachers. They are valuable when they become reflective systems that build teachers' confidence and connect with institutional support. This model also offers a bridge between teacher collaboration literature and religious education pedagogy. It suggests that instructional innovation in Buddhist Religious Education is associated with the alignment of forum quality, teacher reflection, professional confidence, and school support. When these elements operate together, teacher professional development may be more conducive to meaningful improvement in learning.

5. Conclusion

This study examined how professional learning community participation is associated with instructional innovation among Buddhist Religious Education teachers. By reconstructing a simple direct-effect relationship into a serial mediation and moderation model, the study provides a more explanatory account of teacher professional learning. Professional Learning Community Participation was positively associated with Instructional Innovation, but the relationship was more meaningfully explained through Reflective Practice and Teacher Self-Efficacy. Institutional Support further strengthened the direct relationship between professional learning participation and innovation.

The central conclusion is that professional teacher forums matter when they are associated with teachers' internal professional processes. Meaningful forums encourage collaborative dialogue, joint problem solving, resource exchange, and inquiry-oriented learning. These experiences are linked to reflective practice. Reflection is linked to teacher self-efficacy, and self-efficacy is linked to teachers' willingness to experiment, adapt lessons, diversify methods, and provide more responsive feedback. This sequence provides a

plausible account of why some teacher forums are more strongly associated with instructional renewal while others may remain routine administrative gatherings.

The study also concludes that instructional innovation is both individual and institutional. Teachers need professional communities and personal confidence, but they also need schools that provide leadership encouragement, time, resources, professional openness, and policy support. The practical message is straightforward: improving innovation requires simultaneous attention to the forum, the teacher, and the school. The forum provides professional interaction; the teacher converts interaction into reflection and efficacy; school conditions may shape whether efficacy is translated into action.

For practice, professional forums should be redesigned as reflective, problem-centered, and follow-up-oriented spaces. School leaders should establish the institutional conditions that allow forum learning to enter classroom practice. Teachers should treat participation not as attendance but as an opportunity to examine, test, and refine instruction. For future research, longitudinal and mixed-method designs are needed to observe how professional learning evolves into actual classroom innovation. Overall, the findings suggest that pedagogical innovation in Buddhist Religious Education is associated with the joint presence of professional collaboration, reflective practice, teacher confidence, and institutional support.

Declarations

Informed Consent

Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of participation, and their right to withdraw at any time.

Competing Interests

The authors declare that they have no competing interests.

Funding

The authors declare that no specific funding was received for this research from any public, commercial, or not-for-profit funding agencies.

Author Contribution

Hariyanto: Conceptualization, methodology, formal analysis, investigation, writing—original draft, writing—review and editing, supervision, and project administration. Fiska Ilyasir: Methodology, investigation, data curation, validation, and writing—review and editing.Francisca Xaveria Diah Kristianingsih: Investigation, data curation, validation, and writing—review and editing. Intan Nuyulis Naeni Puspitasari: Investigation, resources, validation, and writing—review and editing. Kristi Wardani: Investigation, resources, and writing—review and editing. Nur Jannah: Investigation, data curation, and writing—review and editing. Rizqona

Maharani: Formal analysis, validation, visualization, and writing—review and editing.Satriyo Wibowo: Supervision, validation, and writing—review and editing. All authors read and approved the final manuscript.

Data Availability

The de-identified dataset supporting the findings of this study, including item-level questionnaire responses, coded and reverse-scored data, construct scores, variable definitions, the full questionnaire, scoring procedures, and supporting analysis documentation, is provided as Supplementary Material for editorial and peer-review purposes. Direct personal identifiers, school names, and institution-specific identifiers are not included in the shared files to protect participant confidentiality.

Ethics Declaration

This study was conducted in accordance with ethical research standards involving human participants and with the principles of the Declaration of Helsinki. Ethical approval was granted by the institutional review process of Yayasan Cipta Sarana Buddhi (YCSB), Wonogiri, Indonesia, on March 25, 2026 (Approval No. 14/YCSB/2026).

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Figures

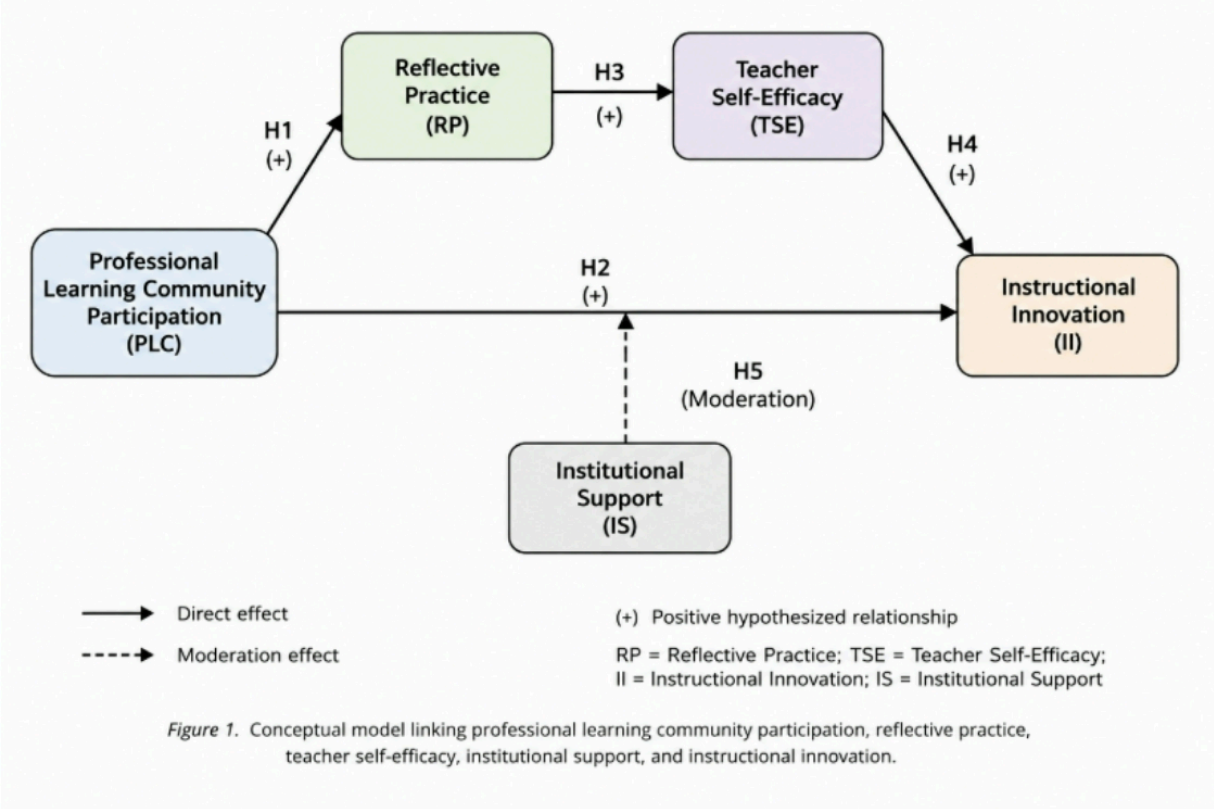

Figure 1. Conceptual model linking professional learning community participation, reflective practice, teacher self-efficacy, institutional support, and instructional innovation.

Figure 1

Conceptual model linking professional learning community participation, reflective practice, teacher self-efficacy, institutional support, and instructional innovation. The dashed arrow represents the moderating role of institutional support.

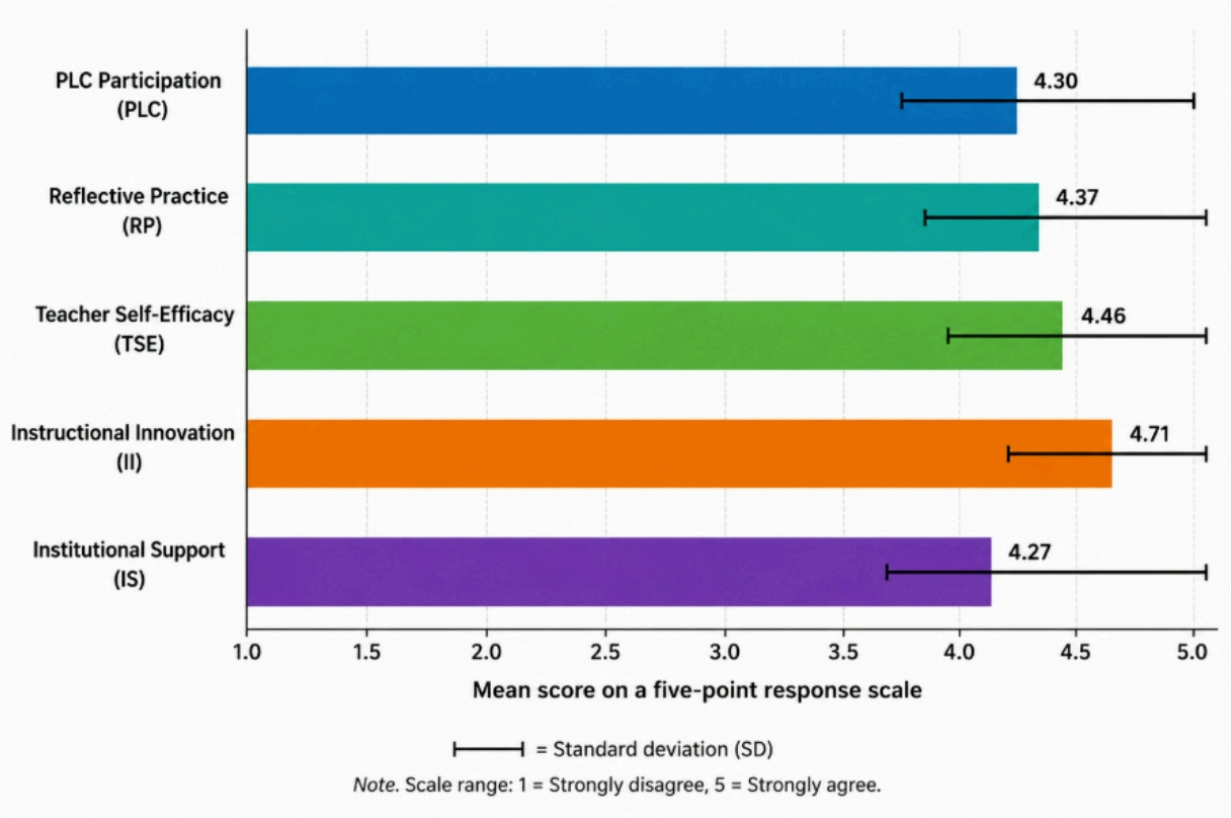

Figure 2

Construct mean scores with standard-deviation bars on a five-point response scale. PLC = Professional Learning Community Participation.

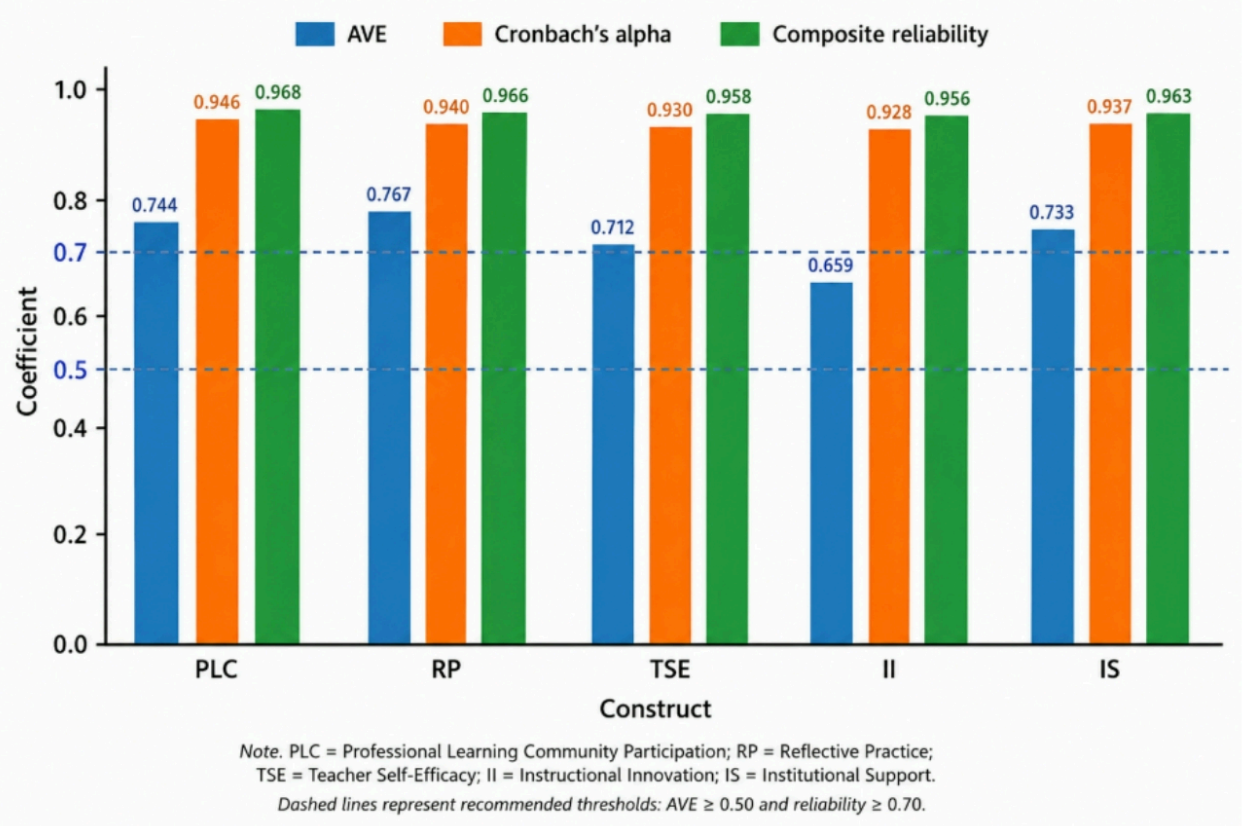

Figure 3

Measurement quality indicators for latent constructs. AVE = Average Variance Extracted; PLC = Professional Learning Community Participation; RP = Reflective Practice; TSE = Teacher Self-Efficacy; II = Instructional Innovation; IS = Institutional Support.

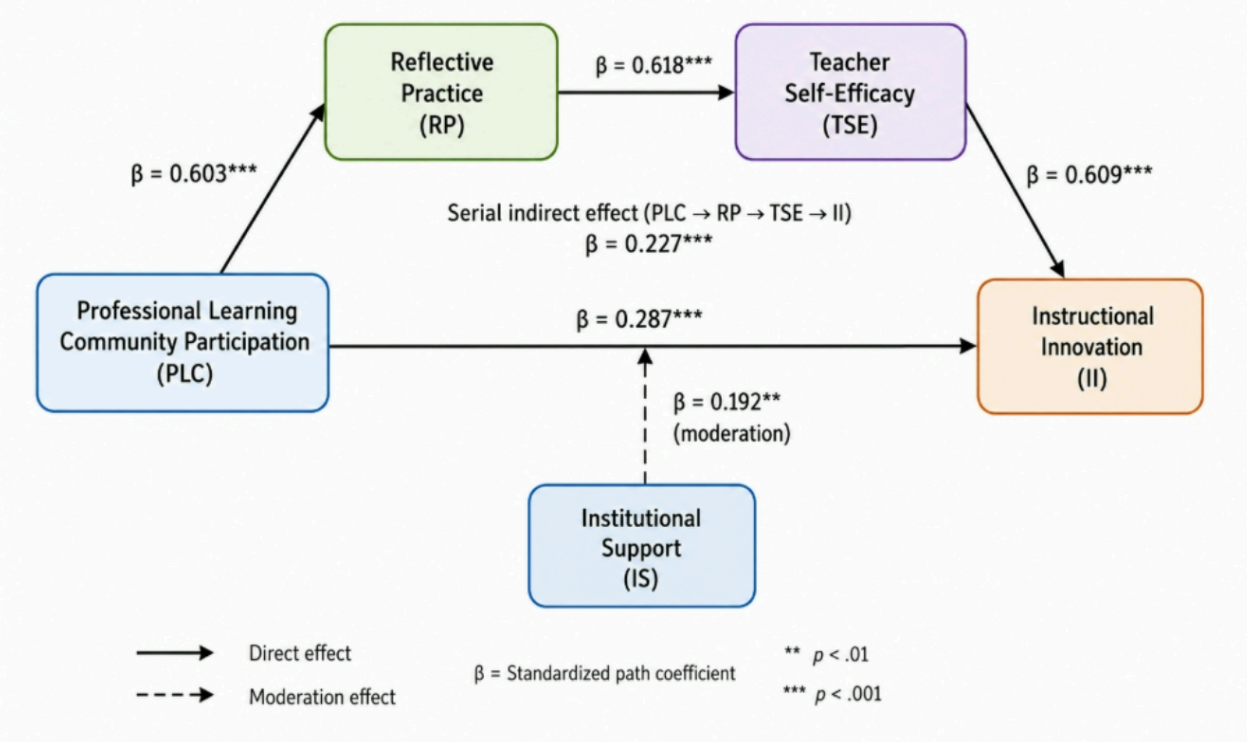

Figure 4

Standardized structural coefficients and serial indirect pathway. The dashed arrow represents the interaction effect of Professional Learning Community Participation and Institutional Support on Instructional Innovation.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryMaterialS2QuestionnaireandCodebook.docx
- SupplementaryMaterialS3AnalysisDocumentation.docx
- SupplementaryMaterialS1DeidentifiedDataandAnalysis.xlsx