

Peer Led Learning Action Cells as Engines of Teacher Influence and Instructional Support

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ABSTRACT

This study explored how peer-led Learning Action Cells functioned as mechanisms of teacher influence and instructional support among teachers, master teachers, school heads, and technical assistance providers involved in LAC implementation within the Schools Division Office of Cagayan. Using a cross-sectional sociometric pathway design, data were gathered from 180 participants through a validated instrument measuring peer-led LAC practices, teacher influence, and instructional support. Partial Least Squares Structural Equation Modeling and Necessary Condition Analysis were employed to determine predictive pathways, mediation effects, and conditions required for stronger instructional support. Results showed high levels of peer-led LAC practices and teacher influence, while instructional support registered a

comparatively moderate level. Peer-led LAC practices significantly predicted teacher influence, and teacher influence significantly predicted instructional support. Mediation analysis further showed that teacher influence partially explained the relationship between peer-led LAC practices and instructional support. Necessary Condition Analysis identified teacher influence as a stronger limiting condition for attaining higher levels of instructional support. Professional consultation patterns also indicated that teachers and master teachers were the most frequently approached sources of instructional assistance. The findings suggest that LAC effectiveness depends not only on collaborative participation but also on whether peer interaction develops into credible professional influence and sustained classroom support. Strengthening peer coaching, demonstration teaching, collaborative problem solving, and follow-through mechanisms may improve the instructional value of LAC implementation.

Keywords: *collaborative professional learning; instructional support; Learning Action Cells; peer leadership; teacher influence; teacher professional development*

INTRODUCTION

Teacher professional learning becomes more meaningful when educators have regular opportunities to discuss classroom concerns, examine their practices, and learn from colleagues who understand the realities of teaching. In Philippine basic education, the Learning Action Cell (LAC) was institutionalized as a school-based continuing professional development strategy intended to improve teaching and learning through collaborative inquiry, reflection, and shared problem solving. The policy positions teachers not simply as recipients of training but as active participants in professional learning that responds to learner needs and school priorities (Department of Education, 2016).

The value of this collaborative structure becomes stronger when leadership and professional influence are shared among peers. Teachers who contribute knowledge, facilitate conversations, demonstrate practices, and encourage colleagues can shape how professional learning is understood and applied within a school. Brodie

(2021) found that teacher agency within professional learning communities is closely connected with purposeful collaboration, sustained inquiry, leadership support, and trust. Such conditions allow professional influence to emerge through collegial relationships rather than through formal position alone. Peer leadership may therefore give experienced teachers and other instructional personnel a stronger role in helping colleagues interpret concerns, consider alternative practices, and make informed instructional decisions.

Professional dialogue, however, becomes useful only when it leads to learning that teachers can carry into their work. De Jong et al. (2022) showed that teacher learning within collaborative groups was strengthened by meaningful dialogue, collective participation, facilitation, and opportunities for colleagues to challenge one another's thinking. Similarly, the development of professional learning communities depends on how collaboration is sustained and supported within the school, with groups showing different patterns of growth according to the conditions surrounding their work (Huijboom et al., 2021). These findings point to the importance of examining not only whether LAC sessions are conducted, but also whether they create meaningful professional influence and practical instructional support.

Against this background, the study *Peer Led Learning Action Cells as Engines of Teacher Influence and Instructional Support* examined how peer-led LAC practices functioned among teachers, master teachers, school heads, and technical assistance providers involved in LAC implementation in the Schools Division Office of Cagayan. It gave particular attention to the capacity of LACs to create teacher-to-teacher influence and provide instructional support that responds to actual professional needs. By examining LACs through these dimensions, the study sought to clarify how collaborative professional learning can move beyond participation in scheduled sessions and become a working structure through which educators support one another and strengthen instructional practice.

Literature Review

Peer Leadership in Teacher Professional Learning

Peer leadership gives teachers opportunities to influence professional practice without relying solely on formal administrative authority. It may be expressed through facilitating discussions, sharing instructional knowledge, mentoring colleagues, and helping groups address common teaching concerns. Schott et al. (2020) described teacher leadership as a process of influencing others and showed that its outcomes may be observed at the individual, team, and organizational levels. Their systematic review further emphasized that teacher leadership is shaped by both personal capacities and school conditions. This perspective is closely related to peer-led Learning Action Cells because the effectiveness of a LAC may depend on whether teachers are able to exercise professional influence within the group rather than simply attend scheduled meetings.

Distributed Influence and Shared Responsibility

Professional learning is strengthened when leadership responsibilities are shared among educators who possess relevant knowledge and experience. Printy and Liu (2021), drawing on data from 32 countries, found that opportunities for teachers to participate in leadership were associated with school cultures supportive of distributed leadership. Their findings suggest that teacher influence becomes more visible when schools provide genuine spaces for educators to contribute to leadership functions. Applied to LAC implementation, this means that master teachers, teachers, school heads, and technical assistance providers may contribute different forms of expertise while maintaining collective responsibility for professional learning. A peer-led structure can therefore serve as a practical means of distributing professional influence across members rather than concentrating it in one designated facilitator.

Peer Coaching and Instructional Support

Instructional support is most useful when it helps teachers examine actual classroom practice and make workable improvements. Peer coaching provides one way of achieving this because teachers receive feedback,

guidance, modeling, and opportunities to reflect on their instructional decisions. Kraft et al. (2018), in a meta-analysis of 60 causal studies, found that teacher coaching produced a substantial positive effect on instructional practice and a smaller but meaningful effect on student achievement. The findings also showed that the effectiveness of coaching may become harder to maintain when programs are expanded without sufficient attention to implementation quality. For peer-led LACs, this suggests that collegial support should extend beyond exchanging ideas and should include focused assistance that teachers can translate into classroom action.

Professional Communities and Instructional Improvement

Collaborative professional development gains value when learning within the group supports changes in instruction. Dogan and Adams (2020) found that the relationship between professional development and effective instruction became stronger when professional communities were present in schools. Their findings indicate that professional learning should not be viewed only as an individual experience because interaction among colleagues can extend and reinforce what teachers gain from development activities. This is particularly relevant to Learning Action Cells, where teachers are expected to work through instructional concerns collectively. Peer-led LACs may therefore function as an important link between professional learning and instructional support when members engage in sustained exchanges that help colleagues interpret knowledge, refine practice, and respond to teaching needs.

METHODS

Research Design

The study used a cross-sectional sociometric pathway design to examine how peer-led Learning Action Cells operated as channels of teacher influence and instructional support. The design combined structured ratings of LAC practices with measures of professional influence and instructional assistance among personnel directly engaged in LAC implementation. Rather than limiting the inquiry to simple associations, the design examined how peer-led LAC practices contributed to teacher influence and how this influence, in turn, supported instructional practice. This structure was appropriate because influence within professional learning groups could arise from facilitation, shared expertise, collegial consultation, and professional trust rather than from formal position alone.

Research Locale

The study was conducted within the Schools Division Office of Cagayan in Region II. The division provided a suitable setting because LAC implementation involved classroom teachers, instructional leaders, school heads, and personnel providing technical assistance across elementary and secondary education. Division and regional records also showed the participation of teachers, master teachers, school leaders, supervisors, and education program personnel in professional development and technical assistance activities within SDO Cagayan. No individual school was identified in the study to preserve institutional confidentiality.

Participants and Sampling Technique

A criterion-stratified sampling procedure was adopted to ensure that participation was limited to personnel with direct experience in LAC implementation. The analytic sample was set at 180 participants, composed of 120 teachers, 30 master teachers, 20 school heads, and 10 technical assistance providers. Teachers formed the largest group because they constituted the principal participants in school-based professional learning, while the other groups represented facilitation, instructional leadership, and technical assistance functions. Eligibility required direct participation in LAC activities during the study period and involvement either as a member, facilitator, instructional leader, or technical assistance provider. Selection within each category was made from authorized LAC implementation records rather than from general personnel lists.

Research Instrument

Data were gathered using the researcher-developed Peer-Led LAC Influence and Instructional Support Scale, which contained 36 statements organized into three 12-item domains: peer-led LAC practices, teacher influence, and instructional support. Responses were recorded using a five-point agreement scale. Four additional sociometric items identified the professional roles commonly approached for instructional advice, clarification of teaching concerns, demonstration of practice, and classroom problem solving. The instrument underwent content validation by five experts in educational leadership, teacher professional development, research, and instructional supervision. The item-level Content Validity Index ranged from .80 to 1.00, while the Scale Content Validity Index using the averaging method was .94. Of the 36 items, 31 obtained an I-CVI of 1.00 and five obtained an I-CVI of .80. No item fell below the acceptable content-validity criterion, although minor revisions in wording were made to four statements based on expert comments.

The revised instrument was pilot tested with 30 LAC-involved education personnel who were excluded from the main study. Cronbach's alpha was .91 for peer-led LAC practices, .92 for teacher influence, and .90 for instructional support. The complete 36-item scale yielded an overall Cronbach's alpha of .95, indicating excellent internal consistency. Corrected item-total correlations ranged from .47 to .79, with all 36 items exceeding the .30 retention criterion. Deletion of individual items did not produce a meaningful improvement in the reliability coefficients. Consequently, all 36 statements were retained for the main data collection. The content-validity and pilot reliability results supported the adequacy of the instrument for measuring peer-led LAC practices, teacher influence, and instructional support.

Data Gathering

Approval to conduct the study was secured from the appropriate division authority before participant recruitment. Eligible respondents were identified through LAC-related records and were invited according to the sampling allocation. Each participant received an informed consent statement explaining the purpose of the research, voluntary participation, confidentiality, and the use of responses solely for scholarly analysis. The validated questionnaire was administered through a controlled electronic form or printed copy when necessary. Completed responses were screened for duplication, substantial missing data, patterned responses, and eligibility before inclusion in the final dataset. Sociometric responses were encoded separately from personally identifying information so that professional influence patterns could be analyzed without revealing individual identities.

Data Analysis

The analysis was conducted in three stages. First, means, standard deviations, and distributional measures summarized responses for peer-led LAC practices, teacher influence, and instructional support. Second, Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to evaluate the measurement and structural models. Indicator loadings, composite reliability, average variance extracted, and heterotrait-monotrait ratios were examined before testing the structural paths. Bootstrapping with 5,000 resamples was used to estimate path significance and confidence intervals. Teacher influence was tested as an intervening mechanism linking peer-led LAC practices with instructional support. PLS-SEM was selected because it permitted simultaneous assessment of latent constructs and predictive relationships in an education model with several interconnected pathways (Hair et al., 2022).

Third, Necessary Condition Analysis (NCA) was applied alongside the structural model. NCA identified whether particular dimensions of peer-led LAC practice represented conditions that had to reach specific levels before high teacher influence or strong instructional support could occur. Effect sizes and bottleneck values were examined rather than relying only on statistical significance. This combination allowed the study to distinguish factors that contributed to stronger outcomes from factors whose absence constrained those outcomes.

Ethical Considerations

The study observed voluntary participation, informed consent, confidentiality, and responsible handling of research data. No respondent was required to disclose information unrelated to LAC implementation, and individual responses were not released to supervisors or participating institutions. Codes replaced names during data processing, and findings were presented only in aggregated form. Participants retained the right to decline participation or withdraw before submission of their responses without consequence.

RESULTS AND DISCUSSION

Table 1. *Descriptive Results for the Major Study Constructs*

Construct	Mean	SD	Interpretation
Peer-Led LAC Practices	3.81	0.49	High
Teacher Influence	3.67	0.56	High
Instructional Support	3.48	0.61	Moderate
Overall	3.65	0.55	High

Table 1 presents the general pattern of responses across the three major constructs. Peer-led LAC practices obtained the highest mean of 3.81, indicating that collaborative discussion, sharing of teaching experiences, and peer participation were regularly observed during LAC activities. Teacher influence also registered a high level at 3.67, suggesting that participants generally recognized colleagues as meaningful sources of professional direction and instructional advice. Instructional support recorded the lowest mean at 3.48. Although still positive, the result showed that the support generated during LAC activities was not consistently translated into concrete classroom assistance. This gap suggested that professional discussion was stronger than the actual follow-through of support into instructional practice. Such a pattern supports the view that teacher leadership becomes more meaningful when professional influence extends from collegial participation to observable changes in practice (Schott et al., 2020).

Table 2. *Professional Roles Approached for Instructional Support*

Type of Support Needed	Teachers	Master Teachers	School Heads	Technical Assistance Providers
Instructional advice	44.4%	33.3%	13.9%	8.4%
Clarification of teaching concerns	41.1%	31.7%	16.1%	11.1%
Demonstration of practice	34.4%	43.3%	12.8%	9.5%
Classroom problem solving	39.4%	30.6%	17.8%	12.2%

Table 2 shows that professional consultation occurred mainly among teachers and master teachers. Teachers were most frequently approached for instructional advice, clarification of teaching concerns, and classroom problem solving, while master teachers were the leading source for demonstrations of instructional practice. School heads and technical assistance providers were consulted less frequently for day-to-day instructional concerns. The pattern indicated that professional influence within LACs was largely horizontal rather than dependent on formal authority. This finding was favorable for peer-led professional learning because it showed that teachers were willing to seek assistance from colleagues whom they considered accessible and professionally credible. It also suggested, however, that technical assistance tended to enter the support process less frequently than peer consultation. Printy and Liu (2021) emphasized that teacher leadership becomes stronger when educators have genuine opportunities to exercise professional influence alongside formal leaders.

Table 3. *Reliability and Convergent Validity of the PLS-SEM Measurement Model*

Construct	Indicator Loading Range	Cronbach's Alpha	Composite Reliability	AVE
Peer-Led LAC Practices	.68–.84	.91	.93	.58
Teacher Influence	.70–.86	.92	.94	.60
Instructional Support	.67–.85	.90	.92	.55

HTMT Ratios

Construct Pair	HTMT
Peer-Led LAC Practices and Teacher Influence	.72
Peer-Led LAC Practices and Instructional Support	.69
Teacher Influence and Instructional Support	.77

Table 3 indicates that the measurement model demonstrated satisfactory reliability and validity. Cronbach's alpha values ranged from .90 to .92, while composite reliability coefficients ranged from .92 to .94. Average variance extracted values were between .55 and .60, showing that each construct explained more than half of the variance represented by its indicators. HTMT ratios ranged from .69 to .77, indicating that peer-led LAC practices, teacher influence, and instructional support remained empirically distinct constructs. These results supported continuation to the structural model because the measures showed adequate internal consistency, convergent validity, and discriminant validity.

Table 4. *PLS-SEM Structural Path Results*

Structural Path	β	t	p	f ²	Decision
Peer-Led LAC Practices → Teacher Influence	.64	11.92	<.001	.69	Significant
Teacher Influence → Instructional Support	.49	7.34	<.001	.31	Significant
Peer-Led LAC Practices → Instructional Support	.26	4.03	<.001	.10	Significant
Endogenous Construct R ² Q ²					
Teacher Influence	.41	.27			
Instructional Support	.50	.34			
Model SRMR = .064					

Table 4 presents a strong positive relationship between peer-led LAC practices and teacher influence, $\beta = .64$, $p < .001$. This was the strongest pathway in the model and showed that greater peer participation in LAC activities was associated with stronger professional influence among educators. Peer-led LAC practices explained 41% of the variance in teacher influence. Teacher influence also had a substantial positive effect on instructional support, $\beta = .49$, $p < .001$. The direct relationship between peer-led LAC practices and instructional support remained significant but was considerably weaker at $\beta = .26$. Together, peer-led practices and teacher influence explained 50% of the variance in instructional support.

The findings showed that conducting collaborative LAC activities alone was not the strongest mechanism for improving instructional support. The more important process involved whether peer interaction actually developed into professional influence. Teachers appeared more likely to receive meaningful instructional support when colleagues were viewed as credible sources of advice, demonstration, and problem solving. This pattern is consistent with findings showing that coaching and professional assistance become more effective when support is focused on actual instructional practice rather than limited to participation in professional development activities (Kraft et al., 2018).

Table 5. *Mediation Analysis for Teacher Influence*

Effect	β	Bootstrapped 95% CI p
Direct Effect: Peer-Led LAC Practices $\rightarrow$ Instructional Support	.260 [.132, .386]	<.001
Indirect Effect through Teacher Influence	.314 [.234, .401]	<.001
Total Effect	.574 [.468, .666]	<.001
Variance Accounted For = 54.7%		

Table 5 shows that teacher influence significantly mediated the relationship between peer-led LAC practices and instructional support. The indirect effect of .314 was statistically significant, with the confidence interval excluding zero. The direct effect also remained significant after teacher influence was entered into the model, indicating partial mediation. Teacher influence accounted for 54.7% of the total relationship between peer-led LAC practices and instructional support.

This finding clarified the mechanism through which LAC participation appeared to become useful for instruction. Peer-led activities contributed to support partly because they strengthened the ability of teachers to influence one another professionally. The remaining direct effect suggested that some benefits of LAC participation also reached instructional support without passing entirely through teacher influence. The result therefore positioned teacher influence as a central mechanism rather than simply another outcome of professional collaboration. This supported the argument that professional communities become more valuable when interaction within the group contributes directly to instructional improvement (Dogan & Adams, 2020).

Table 6. *Necessary Condition Analysis*

Necessary Condition	NCA Effect Size (d)	p	Interpretation
Peer-Led LAC Practices	.18	.002	Small necessary effect
Teacher Influence	.29	<.001	Moderate necessary effect
Bottleneck Levels for Instructional Support			
Desired Level of Instructional Support	Required Peer-Led LAC Practices	Required Teacher Influence	
70%	42%	47%	
80%	55%	61%	
90%	68%	76%	

Table 6 provides a different perspective from the structural model by identifying conditions that constrained the attainment of strong instructional support. Both peer-led LAC practices and teacher influence were necessary conditions, although teacher influence showed the larger necessity effect at $d = .29$. The bottleneck analysis indicated that attaining 80% of the desired level of instructional support required peer-led LAC practices to reach approximately 55% of their observed range and teacher influence to reach 61%. Reaching 90% instructional support required considerably stronger teacher influence at 76%.

These findings indicated that strong LAC implementation could contribute to instructional support, but it could not compensate fully for weak professional influence among teachers. A school could conduct regular and collaborative LAC activities yet still fall short of strong instructional support when teachers did not recognize one another as dependable sources of expertise. The result exposed the central issue of the study: the presence of LAC activity was not sufficient by itself. Its instructional value depended heavily on the professional influence created among peers. Peer-led LACs therefore functioned most effectively as engines of instructional support when collaboration produced trusted professional relationships that moved beyond discussion and resulted in concrete assistance for classroom practice.

Overall, the findings supported the proposed pathway of the study. Peer-led LAC practices strongly strengthened teacher influence, teacher influence substantially improved instructional support, and part of the

contribution of LAC practices operated through this influence mechanism. At the same time, the lower descriptive score for instructional support and the NCA bottleneck results showed that a practical gap remained between professional interaction and classroom-level assistance. This gap provided a clear basis for strengthening follow-through mechanisms, peer coaching opportunities, and structures that enabled professional influence developed during LAC sessions to reach actual instructional practice.

CONCLUSION

Peer-led Learning Action Cells served as meaningful channels of professional influence and instructional support, with teacher influence emerging as a central mechanism linking collaborative LAC practices to classroom assistance. Although peer participation and professional consultation were generally strong, the lower level of instructional support showed that productive discussion did not always translate into sustained classroom-level assistance. The findings further indicated that strong teacher influence was necessary for achieving higher levels of instructional support, suggesting that the effectiveness of LACs depended not only on regular implementation but also on the quality of professional relationships formed among participants. It is therefore recommended that LAC implementation place greater emphasis on structured peer coaching, demonstration teaching, collaborative problem solving, and follow-through activities that connect professional dialogue with actual instructional needs. Master teachers, school heads, and technical assistance providers should strengthen mechanisms that support teacher-to-teacher influence while ensuring that guidance remains accessible and responsive. Future evaluations of LAC implementation should also examine not only attendance and completion of sessions but the extent to which professional learning produces observable instructional support and improvement in teaching practice.

References

- Brodie, K. (2021). Teacher agency in professional learning communities. *Professional Development in Education*, 47(4), 560–573.
- De Jong, L., Meirink, J., & Admiraal, W. (2022). Teacher learning in the context of teacher collaboration: Connecting teacher dialogue to teacher learning. *Research Papers in Education*, 37(6), 1165–1188.
- Department of Education. (2016). *The Learning Action Cell as a K to 12 Basic Education Program school-based continuing professional development strategy for the improvement of teaching and learning* (DepEd Order No. 35, s. 2016).
- Dogan, S., & Adams, A. (2020). Augmenting the effect of professional development on effective instruction through professional communities. *Teachers and Teaching: Theory and Practice*, 26(3–4), 326–349.
- Hair, J. F., Alamer, A. (2022). Partial least squares structural equation modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). SAGE Publications.
- Huijboom, F., Van Meeuwen, P., Rusman, E., & Vermeulen, M. (2021). Professional learning communities (PLCs) as learning environments for teachers: An in-depth examination of the development of seven PLCs and influencing factors. *Learning, Culture and Social Interaction*, 31, 100566.
- Kraft, M. A., Blazar, D., & Hogan, D. (2018). The effect of teacher coaching on instruction and achievement: A meta-analysis of the causal evidence. *Review of Educational Research*, 88(4), 547–588.
- Printy, S., & Liu, Y. (2021). Distributed leadership globally: The interactive nature of principal and teacher leadership in 32 countries. *Educational Administration Quarterly*, 57(2), 290–325.
- Schott, C., van Roekel, H., & Tummers, L. G. (2020). Teacher leadership: A systematic review, methodological quality assessment and conceptual framework. *Educational Research Review*, 31, 100352.