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I-CReST 2025:069-037 – Strengthening Professional Learning Communities through Middle Leadership in Malaysian Secondary Schools

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ABSTRACT

Professional learning communities are essential for fostering school-wide improvement and instructional effectiveness. Nevertheless, many schools struggle to implement them effectively due to heavy teacher workload, poor understanding, and inconsistent practices. Middle leaders have the potential to support and sustain professional learning communities by encouraging collaboration and guiding teaching practices, but their role is often overlooked. There is still little research on how middle leaders influence the success of professional learning communities, especially in Malaysian schools. Thus, the current research investigates the effect of middle leadership on the professional learning communities. A quantitative, cross-sectional survey was conducted among 284 secondary school teachers in Penang. The data were analysed through partial least squares structural equation modelling (PLS-SEM). The findings indicated a significant direct effect of middle leadership on professional learning communities. This study highlights the strategic role of middle leaders in cultivating effective professional learning communities. The study provides valuable insights for educational leaders and policymakers seeking to enhance the implementation and impact of professional learning communities. Strengthening middle leadership can contribute to more enduring and effective professional learning environments, advancing teaching quality and student outcomes. Middle leadership is especially crucial in addressing challenges such as inconsistent professional learning communities practices and low teacher engagement.

Keywords: Middle leadership; Partial Least Squares Structural Equation Modelling (PLS-SEM); professional learning communities

1. INTRODUCTION

Professional Learning Communities (PLCs) are widely valued for enhancing teaching and learning through collaboration and reflective practice. However, their implementation often faces challenges such as high teacher workload, unclear understanding, and inconsistent application [1]-[2]. Middle leaders have the potential to support PLCs through instructional guidance and collaboration, yet this role is often underutilized in schools [3].

Middle leadership plays a crucial yet complex and relational role in schools, positioned between senior leadership and teachers to foster collaboration, support teacher agency, and enhance student learning [4]. As formal teacher leaders, middle leaders support professional growth that drives school improvement [5]. As [3] stated, middle leaders contribute to creating supportive conditions that strengthen PLCs, particularly through mentoring, shared decision-making, and trust-building among teachers. Therefore, this study aims to examine the effect of middle leadership on PLCs.

2. LITERATURE REVIEW

2.1 Middle Leadership

Middle leadership refers to formally designated or informally enacted leadership roles situated between senior school leaders and frontline teachers, serving as a vital bridge in translating institutional vision into practice [6]. Middle leaders, such as heads of departments, subject coordinators, and associate deans, are responsible for team leadership, relationship management, curriculum implementation, and instructional improvement while also remaining actively involved in teaching [7]-[8]. Their roles extend beyond administrative tasks to include mentoring, fostering collaboration, and driving educational reforms at the classroom level [9].

2.2 Professional Learning Communities (PLCs)

PLCs are collaborative groups of educators who engage in ongoing reflective dialogue, shared practices, and collective inquiry to enhance teaching and student learning [10]-[11]. Key features include shared vision, teacher autonomy, deprivatized practices, and a focus on both student and teacher learning [12]. In Western contexts, PLCs emphasize teacher autonomy, voluntary participation, and professional trust [13], while in Malaysia, varied interpretations and limited understanding of PLCs among stakeholders have affected consistent implementation [14].

2.3 Middle Leadership and Professional Learning Communities (PLCs)

Middle leaders, as designated teacher leaders, play a crucial role in shaping PLCs by guiding teachers in their instructional practices and professional development [5]. Their support is delivered through both structured platforms like departmental meetings and informal interactions [15]. Strengthening PLCs also depends on effective collaboration between formal middle leaders and informal teacher leaders [3]. As noted by [16], middle leaders impact student performance, enhance professional knowledge, and actively support the continuous learning of their peers. Therefore, the following hypothesis is proposed:

H1: Middle leadership has a significant effect on PLCs.

Based on hypothesis development, the research model is shown in Fig. 1.

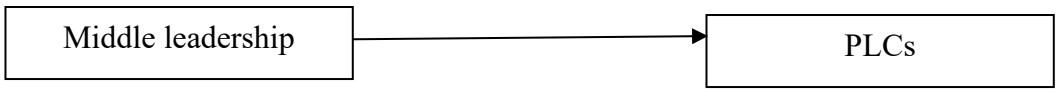

Fig. 1. Research model

3. METHODOLOGY

This study employed a quantitative cross-sectional survey design, targeting a sample of 284 secondary school teachers in Penang. Participants were selected through simple random sampling. The study focused on two main constructs: middle leadership and PLCs, measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The middle leadership scale, adapted from [17], demonstrated high reliability with a Cronbach's alpha of 0.930. The PLCs scale, adapted from [18], showed a Cronbach's alpha of 0.933. Data were analyzed using partial least squares structural equation modelling (PLS-SEM) through a

two-stage process. The first stage assessed the reflective measurement model for convergent and discriminant validity, followed by structural model analysis in the second stage using bootstrapping with 5,000 resamples, as recommended by [19].

4. RESULTS

4.1 Assessment of Measurement Model (First Order Construct)

Table 1 presents the measurement model for the 11 first-order constructs. All item loadings exceeded the recommended cut-off values of 0.70, with the exception of item SD3. However, the construct related to SD3 demonstrated acceptable composite reliability (CR) and average variance extracted (AVE), both surpassing the minimum cut-off values of 0.70 and 0.50, respectively, which supports its inclusion in the model. The remaining 10 first-order constructs also met or exceeded the recommended cut-off values for loadings, CR, and AVE (0.70, 0.70, and 0.50, respectively), confirming the convergent validity of all constructs. Furthermore, as shown in Table 2, the Heterotrait-Monotrait (HTMT) ratio values for all constructs were below the suggested cut-off values of 0.90 [20], indicating adequate discriminant validity among the first-order constructs.

Table 1. Measurement model of first-order constructs

Construct and item	Loading	Alpha	CR	AVE
Staff development (SD)		0.942	0.953	0.744
SD1	0.787			
SD2	0.856			
SD3	0.623			
SD4	0.891			
SD5	0.887			
SD6	0.884			
SD7	0.836			
SD8	0.891			
Managing students (MS)		0.935	0.946	0.659
MS1	0.733			
MS2	0.828			
MS3	0.838			
MS4	0.830			
MS5	0.788			
MS6	0.819			
MS7	0.835			
MS8	0.829			
MS9	0.801			
Administration (AN)		0.885	0.929	0.813
AN1	0.900			
AN2	0.934			
AN3	0.870			
Organising people (OP)		0.902	0.939	0.836
OP1	0.924			
OP2	0.930			
OP3	0.889			
Managing curriculum (MC)		0.892	0.949	0.903
MC1	0.950			

MC2	0.951		
Staff supervision (SS)	0.941	0.962	0.894
SS1	0.945		
SS2	0.963		
SS3	0.928		
Leading learning and change (LC)	0.950	0.958	0.740
LC1	0.820		
LC2	0.806		
LC3	0.856		
LC4	0.885		
LC5	0.865		
LC6	0.872		
LC7	0.904		
LC8	0.870		
Organising learning (OL)	0.900	0.930	0.769
OL1	0.836		
OL2	0.898		
OL3	0.893		
OL4	0.880		
Shared responsibility (SR)	0.898	0.929	0.767
SR1	0.882		
SR2	0.883		
SR3	0.914		
SR4	0.823		
Reflective dialogue (RD)	0.890	0.924	0.752
RD1	0.861		
RD2	0.836		
RD3	0.900		
RD4	0.872		
De-privatized practices (DP)	0.877	0.916	0.730
DP1	0.856		
DP2	0.870		
DP3	0.847		
DP4	0.846		

Table 2. Discriminant validity ($HTMT_{.90}$) for first-order constructs

	AN	DP	LC	MC	MS	OL	OP	RD	SD	SR	SS
AN											
DP	0.570										
LC	0.687	0.690									
MC	0.687	0.603	0.783								
MS	0.591	0.588	0.715	0.709							
OL	0.556	0.793	0.656	0.616	0.599						
OP	0.641	0.600	0.857	0.709	0.651	0.598					
RD	0.531	0.880	0.640	0.624	0.597	0.846	0.574				
SD	0.583	0.633	0.768	0.760	0.828	0.618	0.628	0.615			
SR	0.557	0.869	0.653	0.576	0.571	0.936	0.596	0.886	0.580		
SS	0.631	0.575	0.843	0.724	0.636	0.604	0.747	0.554	0.694	0.575	

Note. AN=administration, DP=de-privatized practices, LC=leading learning and change, MC=managing curriculum, MS=managing students, OL=organization learning, OP=organising people, RD=reflective dialogue, SD=staff development, SR=shared responsibility, SS=staff supervision

4.2 Assessment of Measurement Model (Second Order Construct)

Table 3 presents the measurement model for the two second-order constructs. All loadings, CR, and AVE exceeded the recommended cut-off values of 0.70, 0.70, and 0.50, respectively, indicating strong convergent validity. Furthermore, Table 4 shows that all Heterotrait-Monotrait (HTMT) ratio values were below the suggested cut-off values of 0.90 [20], thus confirming the discriminant validity of the second-order constructs.

Table 3. Measurement model of second-order constructs

Construct an item	Loading	Alpha	CR	AVE
Middle leadership		0.930	0.943	0.705
SD	0.850			
MS	0.826			
AN	0.753			
OP	0.829			
MC	0.849			
SS	0.848			
LC	0.916			
Professional learning communities (PLCs)		0.933	0.952	0.833
OL	0.908			
SR	0.935			
RD	0.912			
DP	0.895			

Note. All the first-order constructs were converted to latent variable scores.

Table 4. Discriminant validity ($HTMT_{.90}$) for second-order constructs

	MLT	PLCs
MLT		
PLCs	0.763	

Note. MLT=middle leadership, PLCs=professional learning communities

4.3 Assessment of Structural Model

Table 5 presents the hypothesis testing results. Middle leadership significantly influenced PLCs (β=0.771, p=0.000), supporting *H1*. Fig. 2 illustrates the structural model assessment, showing that middle leadership and communication together explain approximately 50.6% of the variance in PLCs. Based on [19], an R^2 value of 0.506 is considered moderate.

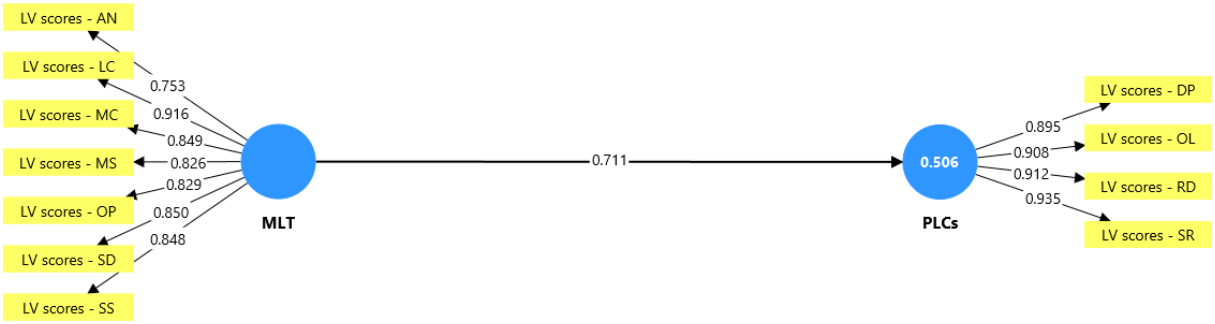

Fig. 2. Structural model

Table 5. Results of hypothesis testing

Hypothesis	Beta	SD	*t* value	*p* values	LL	UL	Decision
H1: MLT → PLC	0.771	0.044	16.127	0.000	0.621	0.794	Supported

Note. MLT=middle leadership, PLC=professional learning communities,

5. DISCUSSION AND CONCLUSION

The findings showed that middle leadership has a significant impact on PLCs. It is similar to the findings by [5], who stated that middle leaders foster collaboration, guide instructional practices, and promote a culture of continuous professional growth. Middle leaders serve as a bridge between senior leadership and classroom teachers, enabling the effective flow of information and support. Furthermore, collaboration between formal middle leaders and informal teacher leaders strengthens the implementation of PLCs, leading to improved teaching practices and student outcomes [3].

This study highlights the pivotal role of middle leadership in shaping and sustaining effective PLCs, emphasizing the importance of fostering collaboration, guiding instructional practices, and promoting continuous professional growth among teachers. Therefore, educational policymakers and school leaders should invest in developing middle leadership through structured training and mentorship programs to enhance PLCs.

However, the study is limited by its focus on secondary schools in Penang, which may affect the generalizability of the results to other regions or educational settings. Additionally, the cross-sectional design limits causal interpretations. Future research should broaden the geographic scope to include other states, adopt longitudinal or mixed-method approaches, and examine additional variables such as school culture or leadership training to gain a deeper and more comprehensive understanding of the impact of middle leadership on PLCs.

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