International Journal of Evaluation and Research in Education (IJERE)
Vol. 14, No. 5, October 2025, pp. 3461~3468
ISSN: 2252-8822, DOI: 10.11591/ijere.v14i5.34392

Empowering professional learning communities: the role of middle leadership and teacher participation in decision-making

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Article Info

Article history:

Received Dec 31, 2024
Revised May 9, 2025
Accepted Jun 17, 2025

Keywords:

Middle leadership
PLCs
PLS-SEM
Secondary school
Teacher participation in decision-making

ABSTRACT

Professional learning communities (PLCs) are essential for fostering collaboration and continuous school improvement. However, their implementation faces significant challenges, including passive teacher attitudes, limited understanding of PLCs, increased workloads, and ineffective execution by school communities. Addressing these challenges requires a supportive organizational structure that enhances PLCs effectiveness. This study aims to examine the effect of middle leadership (MLT) on PLCs. Specifically, this study also examines the mediating effect of teacher participation in decision-making (TM) on the relationship between MLT and PLCs. Data were collected from 284 secondary school teachers in Penang and analyzed using partial least squares structural equation modeling (PLS-SEM). The findings revealed that MLT had a significant effect on PLCs, and TM mediates the relationship between MLT and PLCs. This study provides valuable insights for policymakers and school leaders on fostering a collaborative school culture through effective MLT practices, ultimately strengthening PLCs implementation in Malaysian secondary schools. Furthermore, these findings underscore the significance of empowering teachers participation in decision-making to enhance PLCs effectiveness.

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1. INTRODUCTION

Professional learning communities (PLCs) promote insightful, continuous, and cooperative professional development among teachers [1]. Teachers engaged in PLCs are exposed to innovative ideas and are more likely to implement various teaching strategies that address the varied needs of students, thereby increasing students' engagement and motivation in the learning process. PLCs foster professional growth with teachers working together constantly to enhance teaching strategies and student achievement [2].

According to Chua *et al.* [3], implementation of PLCs faces several challenges, including passive attitudes among teachers, increased workloads, limited understanding of the PLCs concept, unfavorable school environments, and ineffective execution by school communities. Addressing these challenges requires creating a supportive organizational structure that fosters the establishment of conducive conditions for PLCs. Thus, middle leaders play a pivotal role in facilitating effective PLCs implementation.

As formalized positions are situated between senior leadership and teachers, middle leaders act as a bridge to foster relationships and drive shared goals [4]. Their responsibilities include promoting leadership, facilitating professional growth, and mentoring teachers by gathering feedback to inform school decision-making [5]. While middle leaders complement principals in supporting PLCs, their influence, as described by

teachers, is perceived to be moderately impactful, especially in promoting PLCs [6]. Additionally, collaboration between middle leaders and informal teacher leaders improves PLCs by creating opportunities for shared leadership and continuous improvement [7]. Studies have exhibited that PLCs provide a platform for developing informal teacher leadership, often surpassing the influence of principals or middle leadership (MLT) alone [8]. Ultimately, MLT significantly influences PLCs by addressing the diverse needs of teachers and students alike, creating supportive conditions, and promoting shared authority. Furthermore, Pinheiro and Alves [9] found that middle leaders significantly contribute to the development of learning communities by fostering collaborative environments. However, their influence on deepening teacher learning and altering classroom practices needs further strengthening

Teacher participation in decision-making (TM) involves teachers' meaningful engagement in key organizational decisions, particularly in the instructional and managerial domains, including student assessment, curriculum planning, staff development (SD), and school finances [10]. This participative approach emphasizes collective responsibility, a shared mission, and democratic management, fostering an environment where teachers feel appreciated, empowered, and valued. Research highlights that when teachers are actively engaged in decision-making processes, they develop a deeper understanding of school goals and are likely to exhibit behaviors that align with organizational improvement such as in PLCs [11]. As Somech [10] stated, middle leaders foster open communication, create platforms for collaborative decision-making, and encourage teacher input in school governance. Through participative decision-making, teachers can develop a sense of obligation and create a shared understanding of the organizational mission to contribute positively to PLCs initiatives. Therefore, TM acts as a mediator in the relationship between MLT and PLCs. This mediation effect indicates that when teachers are given chances to participate in decision-making, the influence of MLT on the success of PLCs is improved, as teachers are more motivated to participate in professional growth activities [12], [13].

MLT in schools continues to attract interest from researchers worldwide, the empirical base remains relatively limited [14]. This gap is particularly evident in the context of PLCs, which are widely recognized as vital for fostering both teacher and student learning. Despite the importance of PLCs, there is insufficient knowledge of leadership practices and the nature of TM that facilitate learning within these communities. The intersection of MLT and role in shaping effective PLCs thus represents a critical area for further empirical research. Therefore, the study aims to investigate the effect of MLT on PLCs among secondary school teachers in Penang. Specifically, TM mediates the relationship between MLT and PLCs. Figure 1 displays the research model of the study. Thus, this study aims to address the following questions:

- Is there any significant effect of MLT on PLCs?
- Does TM mediate the relationship between MLT and PLCs?

This study offers a novel contribution by shifting the focus from senior leadership to MLT, an often overlooked but crucial layer that directly influences teacher collaboration and professional growth [15]. Unlike previous research that primarily emphasizes top-down leadership approaches, this study explores how TM mediates the relationship between MLT and PLCs effectiveness, reinforcing the significance of leadership within PLCs [16]. Methodologically, this study advances the field by employing PLS-SEM analysis, a robust statistical technique that allows for a more comprehensive examination of complex relationships beyond traditional correlation-based studies [17].

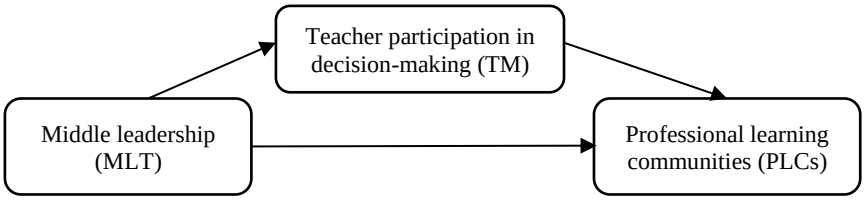

Figure 1. Research model

2. METHOD

2.1. Participants

The study used a quantitative cross-sectional survey design, targeting secondary school teachers in Penang. A convenience sampling method was utilized to gather the data, involving the selection of participants who were easily accessible, geographically proximate, and willing to take part in the study [18]. Approximately 300 online questionnaires were sent via email to the targeted population, and 284 responses were obtained, yielding a high participation rate of 94.7%.

Table 1 shows that the majority of the respondents were female, comprising 78.9%, while male respondents represented only 21.1%. The age distribution of respondents revealed that 42.6% were between 41-50 years old, 31% were aged 31-40, 14.8% were aged 51-60, and 11.6% were aged 21-30. Regarding teaching experience, 27.8% of respondents had over 21 years of experience, 25% had 16-20 years, 22.2% had 11-15 years, 18.7% had five years or less, and 6.3% had six to ten years of experience.

Table 1. Participants demographic profile

Demographic		Number (*n*)	Percentage (%)
Gender	Male	60	21.1
	Female	224	78.9
Age	21–30 years	33	11.6
	31–40 years	88	31.0
	41–50 years	121	42.6
	51–60 years	42	14.8
Teaching experience	5 years and below	53	18.7
	6–10 years	18	6.3
	11–15 years	63	22.2
	16–20 years	71	25.0
	21 years and above	79	27.8

2.2. Instrumentation

We operationalized the role of MLT using De Nobile *et al.* [19] scale with seven dimensions: administration (AN), leading learning and change (LC), managing curriculum (MC), managing students (MS), organizing people (OP), SD, and staff supervision (SS). Cronbach's alpha of these seven dimensions ranged between 0.886 to 0.950. With respect to PLCs, we used the four dimensions by Ho *et al.* [20]. The dimensions included de-privatized practices (DP), organizational learning (OL), reflective dialogue (RD), and shared responsibility (SR). The Cronbach's alpha of these four dimensions ranged between 0.877 to 0.901. In addition, we used the six-item scale by Leithwood and Jantzi [21] to measure TM. The Cronbach's alpha was 0.949. All variables were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

2.3. Data collection and data analysis procedures

The study obtained approval for data collection from the Ministry of Education Malaysia and the Department of State Education. Online questionnaires were distributed using Google Forms. The survey was conducted on a fully voluntary and confidential basis, as indicated on the questionnaire's cover page. In this study, partial least squares structural equation modeling (PLS-SEM) was used to analyze the data with SmartPLS 4.0 software [22]. PLS-SEM offers significant advantages for analyzing direct and indirect relationships among various variables within a structural model [17]. Furthermore, it is well-suited for examining second-order constructs within structural models. The analysis followed a two-stage process, comprising an assessment of the measurement and structural models [17].

3. RESULTS AND DISCUSSION

3.1. Preliminary analysis

To mitigate the potential issue of common method bias (CMB) associated with self-report measures, as highlighted by Podsakoff *et al.* [23], a full collinearity assessment was performed by the guidelines proposed by Kock [24] within the framework of PLS-SEM. Kock [24] suggests that full collinearity variance inflation factors (VIFs) below 3.3 indicate an absence of significant CMB concerns. Table 2 displays all the observed VIF values were 1.000, confirming that CMB was not a problem in this study.

3.2. Assessment of measurement model (first-order construct)

The assessment of the measurement model for the 12 first-order constructs, as summarized in Table 2, reveals that most indicator loadings exceeded the cut-off value of 0.70, except for item SD3. However, the composite reliability (CR) and average variance extracted (AVE) for this item were above the acceptable cut-off value of 0.70 and 0.50, respectively, leading to its retention in the model. Similarly, the other 11 first-order constructs achieved loading values, CR, and AVE that met or surpassed the cut-off values of 0.70, 0.70, and 0.50, respectively. These findings establish the constructs' convergent validity. Furthermore, Table 3 demonstrates that all heterotrait-monotrait (HTMT) ratio values were below the recommended maximum of 0.90 [25], confirming the discriminant validity of the first-order constructs.

Table 2. Measurement model of first-order constructs

Construct and item	Loading	Alpha	CR	AVE	VIF
Staff development		0.938	0.949	0.702	1.000
SD1	0.791				
SD2	0.847				
SD3	0.666				
SD4	0.894				
SD5	0.883				
SD6	0.875				
SD7	0.839				
SD8	0.882				
Managing students		0.936	0.946	0.661	1.000
MS1	0.731				
MS2	0.830				
MS3	0.839				
MS4	0831				
MS5	0.789				
MS6	0.821				
MS7	0.837				
MS8	0.831				
MS9	0.804				
Administration		0.886	0.929	0.814	1.000
AN1	0.900				
AN2	0.934				
AN3	0.872				
Organizing people		0.903	0.939	0.838	1.000
OP1	0.925				
OP2	0.931				
OP3	0.891				
Managing curriculum		0.893	0.949	0.903	1.000
MC1	0.950				
MC2	0.951				
Staff supervision		0.941	0.962	0.894	1.000
SS1	0.945				
SS2	0.963				
SS3	0.928				
Leading learning and change		0.950	0.958	0.742	1.000
LC1	0.821				
LC2	0.810				
LC3	0.857				
LC4	0.886				
LC5	0.866				
LC6	0.873				
LC7	0.905				
LC8	0.871				
Organizing learning		0.901	0.931	0.772	1.000
OL1	0.839				
OL2	0.900				
OL3	0.894				
OL4	0.881				
Shared responsibility		0.899	0.930	0.768	1.000
SR1	0.882				
SR2	0.883				
SR3	0.914				
SR4	0.825				
Reflective dialogue		0.893	0.926	0.758	1.000
RD1	0.863				
RD2	0.840				
RD3	0.904				
RD4	0.874				
De-privatized practices		0.877	0.916	0.730	1.000
DP1	0.856				
DP2	0.870				
DP3	0.847				
DP4	0.846				
Teacher participation in decision-making		0.949	0.959	0.795	1.000
TM1	0.889				
TM2	0.900				
TM3	0.906				
TM4	0.880				
TM5	0.887				
TM6	0.889				

Table 3. Discriminant validity (HTMT) for first-order constructs

	AN	DP	LC	MC	MS	OL	OP	RD	SD	SR	SS	TM
AN												
DP	0.572											
LC	0.688	0.693										
MC	0.691	0.611	0.786									
MS	0.594	0.593	0.718	0.711								
OL	0.559	0.796	0.658	0.619	0.602							
OP	0.643	0.604	0.857	0.711	0.653	0.600						
RD	0.535	0.884	0.642	0.626	0.600	0.846	0.576					
SD	0.588	0.641	0.781	0.771	0.841	0.620	0.640	0.624				
SR	0.558	0.870	0.655	0.582	0.575	0.936	0.598	0.889	0.586			
SS	0.635	0.582	0.844	0.726	0.639	0.607	0.749	0.557	0.723	0.580		
TM	0.573	0.660	0.747	0.728	0.725	0.630	0.677	0.641	0.769	0.608	0.665	

3.3. Assessment of measurement model (second-order construct)

As presented in Table 4, the loadings of the first-order constructs corresponding to their respective second-order constructs exceeded the cut-off value of 0.70. Additionally, the AVE and CR values for the second-order constructs—MLT and PLCs were above the acceptable thresholds of 0.50 and 0.70, respectively. These results confirm that the convergent validity of the two second-order constructs was successfully established. Moreover, Table 5 indicates that the HTMT ratio values were below the recommended limit of 0.90 [25], confirming the discriminant validity of the second-order constructs.

Table 4. Measurement model of second-order constructs

Construct and item	Loading	Alpha	CR	AVE
MLT		0.931	0.945	0.709
SD	0.862			
MS	0.831			
AN	0.749			
OP	0.828			
MC	0.851			
SS	0.851			
LC	0.916			
PLCs		0.934	0.953	0.835
OL	0.908			
SR	0.935			
RD	0.915			
DP	0.897			

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

Table 5. Discriminant validity (HTMT.90) for second-order constructs

	MLT	PLCs	TM
MLT			
PLCs	0.764		
TM	0.827	0.681	

3.4. Assessment of structural model

Figure 2 shows the assessment of structural model. In addition, Table 6 shows the direct effect of MLT on PLCs. Findings showed that it was significant (β=0.544, p=0.000). Thus, H1 was supported. Additionally, TM was a significant mediator in the relationship between MLT and PLCs (β=0.169, p=0.009). Therefore, H2 was supported. Figure 2 illustrates that MLT and TM have contributed about 52.7% of the variance explained on PLCs. Based on the guidelines [17], R^2 values of 0.527 can be considered moderate.

The findings presented that MLT has a significant effect on PLCs. The results corroborated with the previous study [26], [27], which emphasized that middle leaders strengthen PLCs by mentoring teachers, fostering shared leadership, and using teacher feedback to guide decisions. Furthermore, middle leaders have a vital impact in building trust and promoting teamwork, which is critical for the achievement of PLCs. Middle leaders are essential to creating adaptable, student-centered learning communities by facilitating collaboration and trust [28].

In addition, TM mediated the relationship between MLT and PLCs. Middle leaders foster a sense of shared influence and collaboration by involving teachers in key decisions [29]. This indirectly makes teachers feel valued and appreciated, which enhances their commitment to school goals and motivates them to engage in positive behaviors such as PLCs [11]. Furthermore, Sung and Kim [30] expounded that granting

teachers decision-making authority enhances their confidence, equips them to tackle challenges proactively, and fosters innovative thinking as it is the essential trait for the effectiveness of PLCs. By fostering a culture of collective responsibility, professional growth, and shared mission, middle leaders effectively leverage TM to enhance the sustainability and impact of PLCs [12].

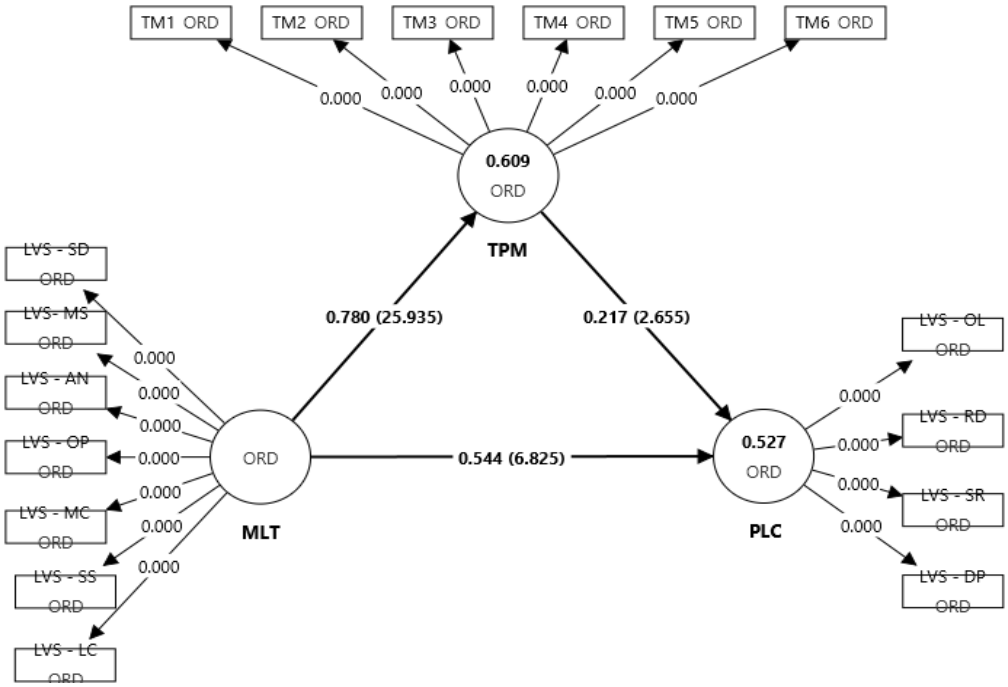

Figure 2. Structural model

Table 6. Results of hypothesis testing

Hypothesis	Beta	SD	*t* value	*p* values	LL	UL	Decision
H1: MLT→PLCs	0.544	0.080	6.825	0.000	0.386	0.695	Supported
H2: MLT→TM→PLCs	0.169	0.065	2.609	0.009	0.040	0.292	Supported

MLT=middle leadership, PLCs=professional learning communities, TM=teacher participation in decision-making, SD=standard deviation, LL=lower limit, UL= upper limit

This study contributes to knowledge of MLT and PLCs, particularly in a centralized education system like Malaysia. By involving teachers in decision-making, middle leaders can enhance engagement and commitment, leading to more effective and sustainable PLCs. The findings offer valuable insights for policymakers and school administrators to design leadership training programs that equip middle leaders with strategies to foster teacher involvement and trust. Additionally, this study enriches leadership and organizational behavior literature by uncovering how middle leaders strengthen PLCs in Malaysian secondary schools. Practically, it highlights the need for middle leaders to empower teachers by aligning their engagement with school goals, while policymakers and administrators should prioritize professional development programs for MLT.

4. CONCLUSION

This study examines the effect of MLT on PLCs among secondary school teachers and the mediating effect of TM between MLT and PLCs. However, the study's dependence on self-reported data and a cross-sectional approach restricts its capacity to determine causality. Future research could address this by adopting a longitudinal approach or examining diverse educational contexts, such as primary or tertiary institutions. Additionally, incorporating qualitative methods could offer deeper insights into the experiences of middle leaders and teachers, further enhancing the study's theoretical and practical contributions.

FUNDING INFORMATION

This research was funded by Universiti Utara Malaysia and supported by the Research Management Centre (SO Code: 21772).

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Sock Beei Yeap	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	
Nurul Jawahir Md Ali	✓			✓			✓			✓	✓	✓	✓	✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors stated no potential conflicts of interest related to the research, authorship, or publication of this paper.

INFORMED CONSENT

Written informed consent to take part in this study was granted by the participants.

ETHICAL APPROVAL

The study involving human participants was evaluated and approved by the Ministry of Education Malaysia [KPM.600-3/2/3-eras (20950)] and the State Education Department [JPNPP.100-12/2/1 Jld.11(11)].

DATA AVAILABILITY

The data supporting this study's findings can be obtained from the corresponding author [SBY], upon request.

REFERENCES

[1] K. Plank, K. L. Sanzo, and J. P. Scribner, "Differences in leading and learning professional learning communities," *Journal of Workplace Learning*, vol. 36, no. 5, pp. 335–347, Jun. 2024, doi: 10.1108/JWL-02-2024-0022.
[2] C. Long, C. Li, G. Huang, and J. Fu, "How to better promote teaching? unveiling the links between professional learning communities and intrinsic motivation among foreign language teachers," *Heliyon*, vol. 10, no. 16, p. e36011, Aug. 2024, doi: 10.1016/j.heliyon.2024.e36011.
[3] W. C. Chua, L. M. Thien, S. Y. Lim, C. S. Tan, and T. E. Guan, "Unveiling the practices and challenges of professional learning community in a Malaysian Chinese Secondary School," *SAGE Open*, vol. 10, no. 2, Apr. 2020, doi: 10.1177/2158244020925516.
[4] J. Willis, P. Churchward, L. Crosswell, R. Spooner-Lane, J. Wise, and S. Jessen, "Recognising the impact of highly accomplished and lead teachers," *The Australian Educational Researcher*, vol. 49, no. 4, pp. 691–709, 2022, doi: 10.1007/s13384-021-00453-9.
[5] K. Lipscombe, S. Tindall-Ford, and P. Grootenboer, "Middle leading and influence in two Australian schools," *Educational Management Administration & Leadership*, vol. 48, no. 6, pp. 1063–1079, Nov. 2020, doi: 10.1177/1741143219880324.
[6] J. B. Huffman, D. F. Olivier, T. Wang, P. Chen, S. Hairon, and N. Pang, "Global conceptualization of the professional learning community process: transitioning from country perspectives to international commonalities," *International Journal of Leadership in Education*, vol. 19, no. 3, pp. 327–351, May 2016, doi: 10.1080/13603124.2015.1020343.
[7] A. Harris and M. Jones, "Middle leaders matter: reflections, recognition, and renaissance," *School Leadership & Management*, vol. 37, no. 3, pp. 213–216, May 2017, doi: 10.1080/13632434.2017.1323398.
[8] D. H. L. Lee and N. K. K. Ip, "The influence of professional learning communities on informal teacher leadership in a Chinese hierarchical school context," *Educational Management Administration & Leadership*, vol. 51, no. 2, pp. 324–344, Mar. 2023, doi: 10.1177/1741143220985159.
[9] G. Pinheiro and J. M. Alves, "Organizational learning within the context of the functioning of educational teams: the progressive emergence of a professional metamorphosis," *Education Sciences*, vol. 14, no. 3, Feb. 2024, doi: 10.3390/educsci14030247.
[10] A. Somech, "Participative decision making in schools: a mediating-moderating analytical framework for understanding school and teacher outcomes," *Educational Administration Quarterly*, vol. 46, no. 2, pp. 174–209, Apr. 2010, doi: 10.1177/1094670510361745.

[11] J. Sarafidou and G. Chatziioannidis, "Teacher participation in decision making and its impact on school and teachers," *International Journal of Educational Management*, vol. 27, no. 2, pp. 170–183, Feb. 2013, doi: 10.1108/09513541311297586.
[12] R. Bogler and A. Somech, "Organizational citizenship behavior in school: how does it relate to participation in decision making?" *Journal of Educational Administration*, vol. 43, no. 5, pp. 420–438, Oct. 2005, doi: 10.1108/09578230510615215.
[13] M. Honingh and E. Hooge, "The effect of school-leader support and participation in decision making on teacher collaboration in Dutch primary and secondary schools," *Educational Management Administration & Leadership*, vol. 42, no. 1, pp. 75–98, Jan. 2014, doi: 10.1177/1741143213499256.
[14] A. Harris, M. Jones, N. Ismail, and D. Nguyen, "Middle leaders and middle leadership in schools: exploring the knowledge base (2003–2017)," *School Leadership & Management*, vol. 39, no. 3–4, pp. 255–277, 2019, doi: 10.1080/13632434.2019.1578738.
[15] D. D. Thomas, "Teacher participation and professional learning communities: a qualitative descriptive study," Franklin University, 2023. [Online]. Available: https://fuse.franklin.edu/docpub/121
[16] H. Woo, G. Letendre, B. Soo-yong, and D. Schussler, "Teacher leadership – collective actions, decision-making and well-being," *International Journal of Teacher Leadership*, vol. 11, no. 1, pp. 29–50, 2022.
[17] J. F. Hair, G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, *Partial least squares structural equation modeling (PLS-SEM) using R*. Cham: Springer International Publishing, 2021, doi: 10.1007/978-3-030-80519-7.
[18] J. W. Creswell, *Educational research: planning, conducting and evaluating quantitative and qualitative research*, 4th ed. Harlow: Pearson, 2014.
[19] J. De Nobile, K. Lipscombe, S. Tindall-Ford, and C. Grice, "Investigating the roles of middle leaders in New South Wales public schools: factor analyses of the middle leadership roles questionnaire," *Educational Management Administration and Leadership*, Mar. 2024, doi: 10.1177/17411432241231871.
[20] D. Ho, M. Lee, and Y. Teng, "Exploring the relationship between school-level teacher qualifications and teachers' perceptions of school-based professional learning community practices," *Teaching and Teacher Education*, vol. 54, pp. 32–43, Feb. 2016, doi: 10.1016/j.tate.2015.11.005.
[21] K. Leithwood and D. Jantzi, "Transformational school leadership effects: a replication," *School Effectiveness and School Improvement*, vol. 10, no. 4, pp. 451–479, Dec. 1999, doi: 10.1076/sesi.10.4.451.3495.
[22] C. M. Ringle, S. Wende, and J. M. Becker, *SmartPLS 4*. Bönningstedt: SmartPLS. [Online]. Available: https://www.smartpls.com
[23] P. M. Podsakoff, S. B. MacKenzie, and N. P. Podsakoff, "Sources of method bias in social science research and recommendations on how to control it," *Annual Review of Psychology*, vol. 63, no. 1, pp. 539–569, Jan. 2012, doi: 10.1146/annurev-psych-120710-100452.
[24] N. Kock, "Common method bias in PLS-SEM: a full collinearity assessment approach," *International Journal of e-Collaboration*, vol. 11, no. 4, pp. 1–10, Oct. 2015, doi: 10.4018/ijec.2015100101.
[25] J. Henseler, C. M. Ringle, and M. Sarstedt, "A new criterion for assessing discriminant validity in variance-based structural equation modeling," *Journal of the Academy of Marketing Science*, vol. 43, no. 1, pp. 115–135, 2015, doi: 10.1007/s11747-014-0403-8.
[26] H. Busher, "Being a middle leader: exploring professional identities," *School Leadership & Management*, vol. 25, no. 2, pp. 137–153, Apr. 2005, doi: 10.1080/13632430500036231.
[27] K. Robinson and L. Aronica, *Creative schools: revolutionizing education from the ground up*. Penguin Books Ltd, 2015.
[28] H. Yin and X. Zheng, "Facilitating professional learning communities in China: do leadership practices and faculty trust matter?" *Teaching and Teacher Education*, vol. 76, pp. 140–150, Nov. 2018, doi: 10.1016/j.tate.2018.09.002.
[29] P. L. Koopman and A. F. M. Wierdsma, "Participative management," in *A Handbook of Work and Organizational Psychology*, 1st ed., D. W. Charles, P. J. D. Drenth, and T. HENK, Eds., London: Taylor & Francis Group, 1999.
[30] W. Sung and C. Kim, "A study on the effect of change management on organizational innovation: focusing on the mediating effect of members' innovative behavior," *Sustainability (Switzerland)*, vol. 13, no. 4, pp. 1–26, 2021, doi: 10.3390/su13042079.

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