

THE MEDIATING ROLE OF TEACHER COLLABORATION IN THE RELATIONSHIP BETWEEN PLCS AND TEACHING EFFECTIVENESS IN THE MALDIVES

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Abstract: *This study thoroughly investigated the mediating role of teacher collaboration within Professional Learning Communities (PLCs) in Maldivian schools. Utilising the Teacher Collaboration Assessment Scale (TCAS) developed by Woodland, Lee, and Randall (2012), key aspects of teacher collaboration, dialogue, decision-making, action, and evaluation (DDAE), were explored. Surveys involving 390 teachers across four provinces provided data analysed using SPSS IBM version 23 and PLS-SEM 3.0. The research unveiled a significant and transformative connection, emphasising the pivotal role of collaborative teacher practices within PLCs in enhancing teaching effectiveness. These findings hold significant implications for educational stakeholders, underscoring the importance of nurturing robust teacher collaboration mechanisms. As Maldivian schools strive for educational excellence, recognising and fostering the mediating influence of teacher collaboration within PLCs emerges as a strategic imperative, ensuring a progressive and empowered educational landscape for educators and students.*

Keywords: *Globalisation, Professional Learning Communities (PLCs), Teaching Effectiveness, Teacher Collaboration, Maldives Education, Educational Challenges*

Educational Evolution and Challenges in the Maldives: An Introduction

In the era of globalization and interconnectedness, nations like the Maldives are experiencing transformative changes, especially in education. This evolution requires adapting to global trends while competing for quality resources on both domestic and international fronts (Perry, 2021; Pashby et al., 2020). Education is now recognized as a crucial driver for economic growth, poverty reduction, and social well-being, encompassing primary and secondary levels to foster a knowledge-based economy (MoE & MHE, 2019).

Despite its geographical challenges, with island dispersion and English as the primary language of instruction in government schools, the Maldives faces concerns about low pass rates in English, especially beyond lower secondary levels. The country has embarked on an ambitious

Education Strategic Action Plan (2021-2025) to provide quality education from preschool to university, addressing challenges in transitioning to higher secondary education (MoE & MHE, 2019; Shareef, 2021). Educational disparities across atolls further complicate curriculum implementation and monitoring.

Acknowledging these challenges, the Maldives is undergoing educational reforms aligned with Sustainable Development Goal 4 (SDG 4), with Professional Learning Communities (PLCs) emerging as a key focus for improving teaching effectiveness and student outcomes (Hord, 1997). This study investigates the dynamics of PLCs, teacher collaboration, and their impact on teaching effectiveness within the distinctive educational landscape of the Maldives.

However, the Maldivian education system faces persistent challenges, particularly at the secondary and tertiary levels, with concerns about aligning education with labor market needs. Despite literacy in Dhivehi and English, some students lack access to education, and only 45% of lower secondary students progress to higher secondary levels (UNICEF, 2021). The study explores the potential of PLCs to enhance teaching effectiveness, focusing on the mediating role of Teacher Collaboration, with the aim of informing Maldivian education practices and policies in the context of ongoing reforms.

Research Objectives

1. To assess and measure the current level of Professional Learning Communities (PLCs), Teacher Collaboration, and Teaching Effectiveness within the educational context of the Maldives.
2. To investigate the role of Teacher Collaboration as a mediating factor in the relationship between PLCs and Teaching Effectiveness in the Maldives.

Research Questions

1. What is the current Professional Learning Communities (PLCs) level in Maldivian schools, and how are they structured and organised?
2. How do teachers in the Maldives engage in collaborative practices, and to what extent does Teacher Collaboration occur within educational institutions?
3. How is Teaching Effectiveness measured and evaluated within the Maldivian educational system, and how do these evaluations relate to student outcomes?
4. Does Teacher Collaboration significantly mediate the relationship between Professional Learning Communities (PLCs) and Teaching Effectiveness in Maldivian schools?

Research Hypothesis

Teacher Collaboration mediates the relationship between PLCs and Teaching Effectiveness, such that PLCs indirectly affect Teaching Effectiveness through Teacher Collaboration.

Significance

This study holds transformative potential for teacher collaboration and professional development in the Maldivian education system. By examining the impact of Professional Learning Communities (PLCs) on Teaching Effectiveness through Teacher Collaboration, it addresses a specific knowledge gap in the Maldives. Policymakers gain valuable insights to enhance educational practices, with a focus on the crucial role of Teacher Collaboration within PLCs, influencing potential policy decisions. Practitioners can anticipate increased support for collaborative efforts, aligning with PLCs' vision for cooperative teaching practices. The study's

findings deepen our understanding of Teacher Collaboration's role in enhancing Teaching Effectiveness, promoting collaboration among educators.

Limitations

This study acknowledges limitations. Data collection relies on teacher survey responses, introducing potential subjectivity that may influence results. The diverse teacher sample, with varying levels of experience, contributes to a broad range of expertise.

LITERATURE REVIEW

This review explores the relationship between Professional Learning Communities (PLCs), Teacher Collaboration, and teaching effectiveness in the Maldivian education system, emphasizing the mediating role of Teacher Collaboration. Grounded in the belief that Teacher Collaboration is pivotal for enhancing teaching effectiveness through PLCs, the study draws on Social Learning Theory and the Community of Practice theory. It addresses challenges in achieving desired learning outcomes in the Maldives, especially at the secondary level, and traces the historical evolution of PLCs and teacher collaboration. The terminological complexities in teacher collaboration are discussed, advocating for refined clarity. The review concludes by introducing a teacher collaboration cycle, emphasizing its dynamic and immersive nature in transformative change for instructional methods and student achievement. Figure 1 visually illustrates the interconnected dimensions of this cycle.

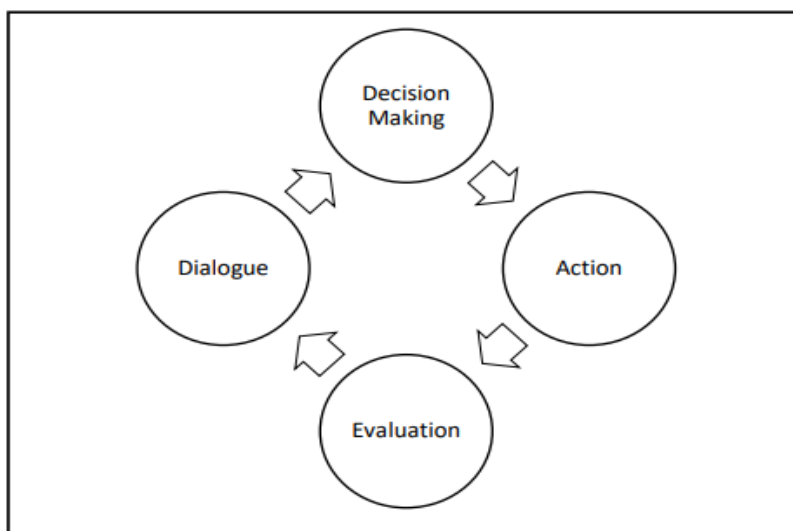


Figure 1: Teacher Collaboration Dimensions

Source: Woodland et al. (2008)

Dialogue: Effective collaborative inquiry relies on constructive dialogue. In low-functioning teams, dialogue may inadvertently reinforce existing practices. High-functioning teams utilize dialogue to navigate disagreements and focus on student learning, fostering continuous reflection and pedagogical refinement. This dynamic exchange encourages a clash of ideas, leading to an evolved understanding that elevates teaching practices and student outcomes.

Decision-Making: Decision-making is pivotal in the teacher team cycle. Five realms of decision-making authority include allocation, security, boundary, assessment, and instructional decisions. Crucially, decisions that address the coherence and effectiveness of learning

activities are central. Collaborative decisions focus on evaluating instructional disparities and charting pathways for improvement, underpinning consistent educational advancement.

Action: Action is a pivotal component of the teacher team's process. Purposeful action, directly aligned with enhancing pedagogical practice, is essential. Actions must go beyond the superficial and address the intricacies of teaching dynamics. Effective action-taking within the collaborative framework impacts instructional methodologies and student learning outcomes. *Evaluation:* A robust teacher-team cycle relies on rigorous evaluation. Ongoing assessment rooted in tangible evidence nurtures knowledge, skills, and perspectives. This process involves systematic collection, examination, and application of data. Skilful teacher teams navigate various indicators, including formative and summative student assessment scores, observations during peer visits, and student work evaluations. This meticulous evaluation guides teacher teams toward evidence-based insights, fostering a foundation for educational enhancements.

Teaching Effectiveness

Teaching effectiveness, a cornerstone in global education, significantly influences student outcomes (Akram & Zepeda, 2015). Despite substantial investments in professional development, the impact on classroom practice is a critical exploration (Sims & Fletcher-Wood, 2018). Effective teaching, shaping student participation, engagement, and achievement, contributes up to 59% to student performance (Han & Yin, 2016). This study emphasizes active learning strategies for diverse student abilities and recognizes contextual factors influencing teaching quality (Scherer et al., 2021).

The Role of Teaching Effectiveness

Teaching effectiveness remains a priority, leading to ongoing teacher-professional learning programs (Avalos, 2011; de Vries et al., 2022). The study underscores the need for robust evidence linking professional development to classroom practice (Grissom & Bartanen, 2019). As two alternative approaches gain traction, one focuses on elevating teaching standards through rigorous selection, and the other on sophisticated evaluation methods (Gore et al., 2017). Prioritizing teacher support and development emerges as an urgent strategy globally (Ogunode & Musa, 2022).

Defining Teaching Effectiveness

Teaching effectiveness, subject to diverse definitions, is often synonymous with teacher effectiveness. It involves achieving instructional objectives, cultivating skills, and creating an optimal learning environment (Akram & Zepeda, 2015; Stronge, 2018). The concept encompasses dynamic interactions between teachers and students, translating knowledge into high-quality education (Topping & Sanders, 2000). Effective teaching is purposeful, aligning objectives, learners, content, and teachers (Forsyth et al., 2019). It goes beyond changing the educational framework alone, emphasizing the importance of altering teaching methods (Bishop et al., 2012). Assessing improvements in student knowledge, motivation, and adaptability is crucial for gauging teaching effectiveness, along with pedagogical skills and meaningful interactions (Chen et al., 2020; Sancar et al., 2021).

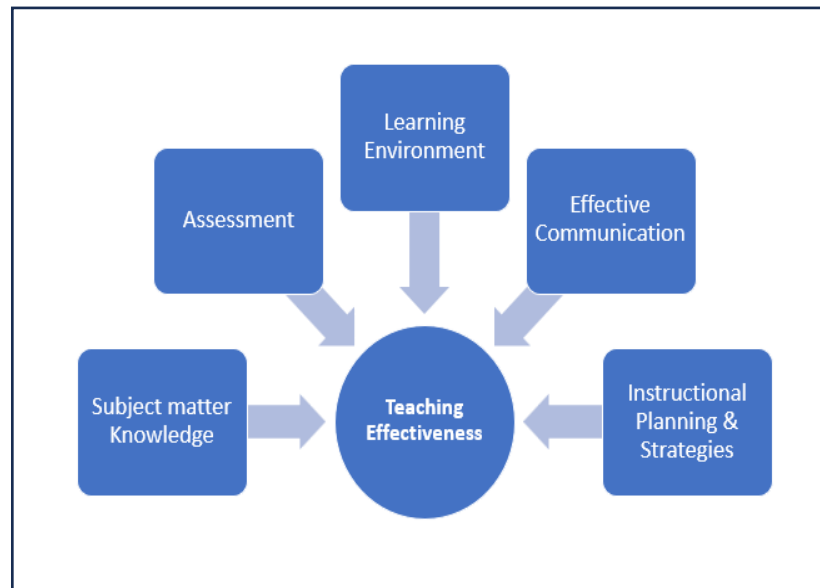


Figure 2: Dimensions of Teaching Effectiveness

Dimensions of Teaching Effectiveness

Addressing teacher education challenges in the Maldives, this study adopts Pakistan's national professional standards for teachers, developed in collaboration with UNESCO in 2008 (Stehle & Peters-Burton, 2019). Utilizing Danielson's framework (2007), the study focuses on five key dimensions:

Subject Matter Knowledge: Importance: Profoundly impacts student learning and achievement.

Components: Depth and organization of knowledge.

Effective Teachers: Align teaching with curriculum standards, incorporate essential components, and foster higher-level thinking skills (Stronge, 2018).

Instructional Planning and Strategies: Importance: Key to optimizing student learning outcomes.

Assessment: Evaluates teachers' ability to engage students and sustain attention.

Research: Highlights the close connection between instructional methods and student learning (Hayes et al., 2021).

Assessment: Importance: Involves collecting, analysing, and utilizing student performance data.

Assessment for Learning: Provides insights into the material and offers diagnostic information about students' readiness.

Positive Influence: Aligned assessment with learning objectives and regular feedback positively influences student learning (Mylopoulos et al., 2016).

Learning Environment: Importance: Involves arranging physical settings, utilizing educational resources, and establishing guidelines for classroom management.

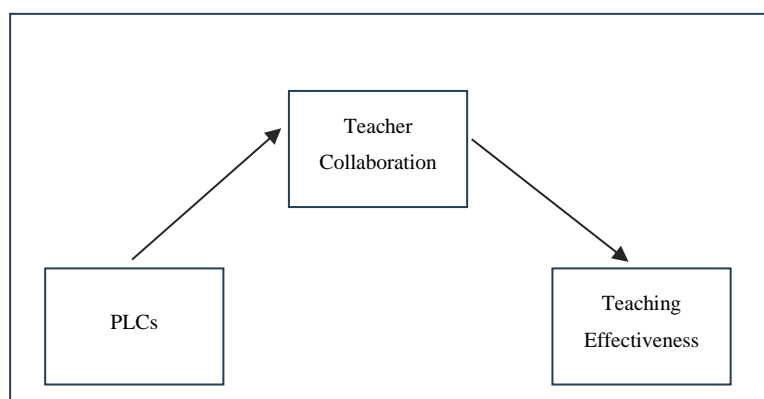
Impact: Positive classroom atmosphere enhances interactions between students and teachers, boosting academic achievements (Al-Marroof et al., 2021).

Effective Communication: Importance: Involves transparent communication, active listening, and maintaining various communication channels.

Tailoring Techniques: Effective teacher's tailor communication techniques to suit students' ages and abilities, collaborating with colleagues to address student issues effectively (Haleem et al., 2022).

In summary, teaching effectiveness in the Maldives is being evaluated based on these five critical dimensions, aiming to enhance teacher performance and improve student outcomes using Pakistan's professional standards for teachers.

Conceptual Framework: This framework delves into the mediating role of teacher collaboration between Professional Learning Communities (PLCs) and Teaching Effectiveness in the Maldives. PLCs are the independent variable, teacher collaboration is the mediating variable, and Teaching Effectiveness is the dependent variable, showcasing how teacher collaboration shapes the impact of PLCs on Teaching Effectiveness.



Hypothesis Development: Amidst the evolving demands of modern education, teacher quality stands out as a critical factor globally. This study posits the following hypothesis:

Research Hypothesis: Teacher Collaboration mediates the relationship between PLCs and Teaching Effectiveness, indicating that PLCs indirectly influence Teaching Effectiveness through shaping Teacher Collaboration.

This hypothesis suggests that PLCs indirectly impact Teaching Effectiveness by influencing the dynamics of Teacher Collaboration. Departing from traditional individual-focused research, this hypothesis explores collaborative dynamics within social settings. Previous studies by Lomas et al. (2021) reveal the benefits of collective inquiry and mutual understanding for teachers' expertise. Research by Hord (1997) and Zheng et al. (2019) emphasizes the positive impact of PLC participation on teaching practices, underscoring the role of PLCs in enhancing Teaching Effectiveness through their influence on collaborative practices among teachers.

Research Methodology

This section outlines the quantitative research design employed to investigate the impact of teacher collaboration on the relationship between Professional Learning Communities (PLCs) and teaching effectiveness in Maldivian schools. Utilizing surveys for data collection ensures objectivity and statistical analysis credibility within a cross-sectional survey design. The

surveys were administered online through Google Forms for confidentiality. The study targeted teachers from public schools in the South Province, North Province, North Central Province, and South-Central Province of the Maldives, with a strategically selected sample of 390 teachers using probability and proportional stratified random sampling for balanced representation (Table 1).

Table 1: Teachers and Schools Count by Provinces

Province	No of School	No of Teachers
South Province	12	928
North Province	45	1764
North Central Province	29	913
South Central Province	26	899
	112	4504

Source: School Statistics 2017 (MoE, Maldives)

Population and Sampling:

The study focused on all teachers in public schools across four Maldivian provinces—South, North, North Central, and South-Central—for their representativeness and practicality (Christensen et al., 2022).

Sampling Methodology

A rigorous sampling approach involved selecting 390 teachers using probability sampling, ensuring equitable representation through proportional stratified random sampling (Hanson et al., 2005). Ten teachers per school were randomly chosen, maintaining diversity in gender, age, and experience. Each teacher participated in three distinct survey questionnaires: SITE II for Teaching Effectiveness, TCAS for Teacher Collaboration, and PLCsA-R for Professional Learning Communities. The surveys, assessing various dimensions, were administered with permission from the Ministry of Education and school heads. Data analysis employed IBM SPSS version 23.0 and PLS-SEM, utilizing descriptive statistics and inferential analysis, including the PLS Algorithm and Bootstrapping Moderation Analysis, to effectively test research hypotheses.

Results

Response Rate:

- Data collection spanned 1.5 months, starting July 24, 2021.
- Out of 405 distributed survey links, 396 were completed.
- After cleansing, 390 questionnaires were suitable for analysis.
- Data Validation:
 - Preprocessing addressed irregularities, missing values, and outliers.
 - Error checking confirmed precise data entry.
 - Outliers were minimal and within acceptable limits.
 - Normality tests affirmed data consistency.
- Sample Characteristics:
 - Examination of means and standard deviations revealed no anomalies.

This thorough data screening ensures the reliability and accuracy of the dataset, forming a robust foundation for subsequent statistical analysis.

Table 4: Findings of Skewness and Kurtosis Values

Variable	N	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
PLCs	390	-0.333	1.135	0.123	0.245
Teacher Collaboration	390	-1.197	1.081	0.123	0.245
Teaching Effectiveness	390	0.018	0.123	1.445	0.245

Hair et al. (2014) suggest that the skewness and kurtosis test considers data normal when study items align closely with the standard deviation. Acceptable skewness values typically range from -3 to +3, and acceptable kurtosis values range from -10 to +10 (Izquierdo et al., 2014). It's important to note that PLS-SEM analysis does not require data to conform to a normal distribution. Table 4 presents the skewness and kurtosis values for the variables: Professional Learning Communities, Teacher Collaboration, and Teaching Effectiveness.

Descriptive Analysis:

This section examines research findings using descriptive statistics to highlight the socio-demographic characteristics of participants.

Socio-Demographic Profile of Respondents: The study gathered demographic data covering school location, gender, educational qualifications, and professional experience.

School Location: Participants were from various locations across the Maldives, with Seenu Atoll (Addu) having the highest representation at 15.2%, followed by Raa Atoll at 12.6%.

Gender: The majority of respondents were female, constituting 59.3%, while males accounted for 40.7%.

Education: Respondents had diverse educational attainments, with 45.7% holding bachelor's degrees, 37.9% possessing master's degrees, 16.2% having diploma-level qualifications, and 0.3% holding a doctorate.

Years of Experience: The majority of respondents (99.2%) reported having more than three years of experience, with only 0.8% indicating less than two years of experience.

Assessing Teacher Collaboration, PLCs, and Teaching Effectiveness in the Maldives:
This analysis evaluates Teacher Empowerment and Teaching Effectiveness levels in the Maldives using mean score analysis, as summarized in Table 6.

Mean Score Interpretation:

Mean scores, classified according to Wiersma's (2000) categorization, provide valuable insights into the findings.

Table 6: Mean Score Interpretation

Mean Score	Interpretation
1.00-2.00	Low
2.01-3.00	Moderate
3.01-4.00	High

Wiersma (2000)

Assessment of Professional Learning Communities (PLCs) in the Maldives

Table 7 provides a comprehensive assessment of Professional Learning Communities (PLCs) in the Maldives. Critical dimensions were evaluated, revealing high levels in Shared and Supportive Leadership (mean 3.05), Shared Values and Vision (mean 3.06), Collective Learning and Application (mean 3.18), and Shared Personal Practice (mean 3.09). Supporting Environment – Relationships showed a moderate level (mean 2.97), while Supporting Environment – Structure scored high (mean 3.08). Overall, the average mean score was 3.07, indicating a high level of PLCs in the Maldivian educational landscape.

Table 7: The Level of PLCs

Dimensions	Mean	Standard Deviation	Level
Shared And Supportive Leadership	3.05	0.66	High
Shared Values and Vision	3.06	0.54	High
Collective Learning and Application	3.18	0.44	High
Shared Personal Practice	3.09	0.43	High
Supporting Environment -Relationships	2.97	0.55	Moderate
Supporting Environment – Structure	3.08	0.42	High
Overall,	3.07	0.39	High

Table 8 examines educators' collaborative practices in the educational context, highlighting moderate levels of dialogue (mean = 2.96, SD = 0.58), indicating communication and idea exchange with individual differences in engagement levels.

Table 8: The Level of Teacher Collaboration

Dimensions	Mean	Standard Deviation	Level
Dialogue	2.96	0.58	Moderate
Decision Making	2.96	0.59	Moderate
Action	2.79	0.59	Moderate
Evaluation	2.95	0.49	Moderate
Overall,	2.89	0.46	Moderate

Dialogue: Dialogue in collaborative decision-making is moderate (mean = 2.96, SD = 0.58), reflecting collective involvement with diverse approaches.

Decision-Making: Collaboration in decision-making is moderate (mean = 2.96, SD = 0.59), reflecting collective involvement with diverse approaches.

Action: Collaborative actions are slightly less prevalent (mean = 2.79, SD = 0.59), suggesting potential areas for improvement in translating discussions into actions.

Evaluation: Moderate collaboration is observed in collectively assessing practices (mean = 2.95, SD = 0.49), with relatively higher consensus.

Overall, Teacher Collaboration: Considering all dimensions, the mean score of 2.89 signifies moderate collaboration. While collaboration exists, there is room for improvement, particularly in translating discussions into concrete actions.

These findings highlight the need for targeted interventions to enhance collaborative practices, ensuring discussions effectively translate into impactful actions. The study establishes a foundation for further exploration and potential strategies to strengthen Teacher Collaboration within the studied context, emphasizing the importance of aligning dialogue, decision-making, and actions for more cohesive and effective collaborative efforts among educators.

Table 9: The Level of Teaching Effectiveness

Dimensions	Mean	Standard Deviation	Level
Subject Matter Knowledge	3.53	0.47	High
Instruction Planning and Strategies	3.50	0.52	High
Assessment	3.54	0.52	High
Learning Environment	3.55	0.61	High
Effective Communication	3.62	0.49	High
Overall	3.55	0.46	High

Teaching Effectiveness: In the analysed educational context (Table 9), educators demonstrate proficiency across critical dimensions.

Subject Matter Knowledge: High proficiency (mean = 3.53, SD = 0.47) signifies a solid grasp of content.

Instruction Planning and Strategies: Notably high (mean = 3.50, SD = 0.52) showcases expertise in structuring classroom practices.

Assessment: Competence in assessing student performance (mean = 3.54, SD = 0.52) reflects proficiency in evaluating learning outcomes.

Learning Environment: Successful establishment of conducive learning environments (mean = 3.55, SD = 0.61), with variability indicating opportunities for consistency.

Effective Communication: Notably high proficiency (mean = 3.62, SD = 0.49) highlights effective communication practices.

Overall Teaching Effectiveness: Collectively, a high level of teaching effectiveness (mean = 3.55, SD = 0.46) reflects overall strength in teaching practices.

These results underscore strengths, especially in subject matter knowledge, planning, and communication. While educators excel in various dimensions, variability in learning environments suggests a need for consistent approaches. These insights guide efforts to sustain and enhance teaching effectiveness, emphasizing ongoing initiatives to foster optimal learning environments.

Measurement Model Assessment: In PLS-SEM analysis, the measurement model evaluates validity and reliability, considering item factor loading, convergent reliability, and construct validity (Hair et al., 2019).

Ensuring Measurement Consistency: Measurement instruments require high internal consistency, assessed through Cronbach's Alpha (values above 0.8) and Composite Reliability (CR values above 0.70). In this study, all Cronbach's Alpha values and CR values exceeded these thresholds, ensuring robust internal consistency (Urbach et al., 2010; Chin, 2010; Hair et al., 2011).

Table 9: Cronbach Alpha and Composite Reliability Values

Variable	Dimension	Cronbach Alpha	CR>0.70
Professional Learning Communities	Shared And Supportive Leadership	0.950	0.674
	Shared Values and Vision	0.934	0.946
	Collective Learning and Application	0.886	0.901
	Shared Personal Practice	0.872	0.899
	Supporting Environment– Relationships	0.869	0.902
	Supporting Environment – Structure	0.869	0.902
Teaching Effectiveness	Subject Matter Knowledge	0.930	0.942
	Instruct Planning and Strategies	0.937	0.949
	Assessment	0.911	0.937
	Learning Environment	0.956	0.966
	Effective Communication	0.870	0.921
Teacher Collaboration	Dialogue	0.938	0.950
	Decision Making	0.938	0.948
	Action	0.941	0.950
	Evaluation	0.939	0.947

Convergent Validity Assessment: Convergent validity, evaluated using indicators such as average variance extracted (AVE) and composite reliability (CR), adhered to Hair et al.'s criteria (2016). AVE values (0.515 to 0.904) and CR values (0.869 to 0.956) exceeded recommended thresholds, confirming convergent validity (Table 10).

Table 10: Convergent Validity Values

Variable	Dimensions	CR >0.70	AVE >0.50
Professional Learning Community	Shared And Supportive Leadership	0.950	0.674
	Shared Values and Vision	0.934	0.515
	Collective Learning and Application	0.886	0.549
	Shared Personal Practice	0.872	0.538
	Supporting Environment– Relationships	0.869	0.651
	Supporting Environment – Structure	0.882	0.904
Teaching Effectiveness	Subject Matter Knowledge	0.930	0.664
	Instructional Planning and Strategies	0.937	0.949
	Assessment	0.911	0.879
	Learning Environment	0.956	0.852
	Effective Communication	0.870	0.786

Teacher Collaboration	Dialogue	0.938	0.950
	Decision Making	0.938	0.948
	Action	0.941	0.950
	Evaluation	0.939	0.947

Structural Model Assessment: Following the establishment of the measurement model, the focus shifts to the structural model, examining variable relationships and hypotheses. This phase involves estimating R^2 values and path coefficients (Sang et al., 2010). Like the measurement model, it assesses latent construct strength, checks for multicollinearity, conducts hypothesis testing, determines the coefficient of determination, evaluates effect size (f^2), and gauges predictive relevance (Q^2). This section specifically addresses collinearity analysis, hypothesis testing, Predictive Accuracy (R^2), Effect Size (f^2), and Predictive Relevance (Q^2) in the refined structural model.

Collinearity Analysis: Collinearity, a common concern, is assessed using the Variance Inflation Factor (VIF), where a VIF below 3.3 indicates no significant problem (Ramayah et al., 2018). Table 10 presents computed VIF values for the variables in the study.

Table 10: Multicollinearity Test

Variable Pairs	(VIF)
PLCs and Teacher Collaboration	1.000
PLCs and Teaching Effectiveness	2.556
Teacher Collaboration and Teaching Effectiveness	2.170

Hypothesis Testing Results

As per Table 11, the findings reveal substantial mediation by Teacher Collaboration in the association between Professional Learning Communities (PLCs) and teaching effectiveness in the Maldives. Supported by a beta value (β) of 0.180, a t-value of 2.852, and a p-value of 0.005, the results indicate crucial statistical significance. The p-value falling below the commonly accepted threshold of 0.05 and the t-value exceeding 1.96 emphasize the significance of the mediation effect (Kock, 2016). In conclusion, the study confirms that Teacher Collaboration plays a significant mediating role in the relationship between PLCs and teaching effectiveness, as demonstrated by the statistical values in Table 10.

Table 11: The Influence of Teacher-Teacher Collaboration as a Mediator in the Relationship between PLCs and Teaching Effectiveness

Hypotheses	Relationship	Beta value (β)	Standard deviation	t-value	p-value	Result
H	PLCs>TC > TEFF	0.180	0.063	2.852	0.005	Supported

Notes: PLCs: Professional Learning Communities, TC: Teacher Collaboration, TEFF: Teaching Effectiveness

Coefficient of Determination (r^2):

The r^2 , gauging an independent variable's impact on dependent ones, follows Cohen's (1992) benchmarks: 0.27 is significant, 0.13 is moderate, and 0.02 is weak. It reveals the variance in performance-dependent variables explained by endogenous latent variables (Hair et al., 2017;

Hair et al., 2013) and the variance in the structural model explained by endogenous variables (Hair Jr et al., 2014b).

Table 12: Predictive Accuracy (R²)

Variable	R Square
Teacher Collaboration	0.537
Teaching Effectiveness	0.293

In Table 4.12, the r² values reveal significant explanatory power. Teacher Collaboration explains 53.7% (r²=0.537) of Professional Learning Communities (PLCs) and 29.3% (r²=0.293) of Teaching Effectiveness. These insights emphasize the substantial impact of Teacher Collaboration on both variables.

Examining Effect Size (f²):

Table 13 indicates a large effect size (1.162) of PLCs on Teacher Collaboration, underscoring their pivotal role in fostering collaboration. However, the minimal effect on Teaching Effectiveness (f²= 0.005) suggests other influential factors. A moderate connection (f²= 0.039) between Teacher Collaboration and Teaching Effectiveness emphasizes the need for a comprehensive approach to enhance educational outcomes.

Table 13: Evaluation of Effect Size for Teacher PLC, Teacher Collaboration and Teaching Effectiveness

Relationship	Effect Size (f ²)	Decision
PLCs-> Teacher Collaboration	1.162	Large
PLCs -> Teaching Effectiveness	0.005	Weak
Teacher Collaboration (TC) -> Teaching Effectiveness (TEF)	0.039	Moderate

Table 14 indicates predictive relevance for Teacher Collaboration (Q²=0.212) and Teaching Effectiveness (Q²=0.157). These values, obtained through SmartPLS blindfolding analysis, signify the proportion of variance predicted by the model's independent variables. Notably, Professional Learning Communities (PLCs) lack a specific Q² value, as they serve as independent variables predicting other factors.

Table 14: Predictive Relevance (Q²) Values

Variables	Q ²
Professional Learning Communities	
Teacher Collaboration	0.212
Teaching Effectiveness	0.157

Discussions and Conclusion

In this section, the study aligns with the Maldives Education Sector Plan, investigating teacher collaboration and teaching effectiveness. It addresses four key questions, emphasizing the mediating role of Teacher Collaboration between Professional Learning Communities (PLCs) and Teaching Effectiveness.

Key Findings

Professional Learning Communities (PLCs): Maldivian schools exhibit high levels of shared leadership, values, vision, collective learning, and structured environments within PLCs. However, interpersonal relationships show moderate levels, indicating room for improvement.

Teacher Collaboration: Collaborative practices demonstrate a moderate level of dialogue, decision-making, action, and evaluation, suggesting opportunities for improvement, particularly in translating discussions into concrete actions.

Teaching Effectiveness: Teaching in the Maldivian context is highly effective, with educators demonstrating proficiency in subject matter knowledge, instructional planning, assessment, creating a positive learning environment, and effective communication.

Mediating Role of Teacher Collaboration: Teacher Collaboration significantly mediates the relationship between PLCs and Teaching Effectiveness, highlighting its transformative potential in enhancing teaching practices.

Implications

The study underscores the need for targeted interventions to enhance collaborative practices among educators, ensuring more effective translation of discussions into impactful actions.

Addressing moderate levels in teacher collaboration can lead to a more cohesive and impactful professional learning community.

The high level of teaching effectiveness indicates a commitment to quality education, fostering a positive and enriching educational experience for students.

The findings emphasize the transformative potential of Teacher Collaboration in Maldivian education, stressing the importance of sustained collaborative initiatives.

Encouraging meaningful collaborations among teachers is pivotal in enriching teaching practices and delivering high-quality education.

Collaborative efforts represent progress in shaping a future where effective teaching practices are central to the educational journey.

This study contributes valuable insights for ongoing efforts to elevate education in the Maldives, aligning with national objectives for economic growth and human capital development.

Research Implications

Theoretical Implications: This study illuminates Teacher Collaboration as a central mediator between Professional Learning Communities (PLCs) and Teaching Effectiveness, providing theoretical clarity on collaborative dynamics within PLCs.

Practical Implications

Policymakers can leverage insights to shape educational policies encouraging the establishment and active participation in PLCs, fostering an environment conducive to effective teaching practices.

Educational leaders can utilize findings to inform leadership strategies, promoting collaborative cultures within schools and empowering teachers to enhance collective teaching effectiveness.

Tailored professional development programs can enhance teachers' collaborative skills within PLCs, focusing on effective communication, collaborative problem-solving, and mutual learning.

Limitations and Recommendations for Future Research

Limitations: Reliance on self-reported data introduces biases like social desirability and response bias, impacting accuracy and reliability.

Focus on teachers' perceptions excludes viewpoints from students and parents, limiting a comprehensive understanding.

Overlooking influential variables like school culture, leadership, and teacher characteristics introduces potential confounding factors.

Cross-sectional design limits establishing causality, suggesting the need for future longitudinal investigations.

Findings are specific to the Maldives, cautioning against generalization to different contexts.

Recommendations for Future Research: Future studies should encompass private institutions, offering a holistic understanding of teacher empowerment's impact on teaching effectiveness.

Expanding samples across all six provinces enhances regional perspectives for more generalizable findings.

Future research should incorporate diverse viewpoints, including those of students, parents, and school leadership.

Employing methodological triangulation with qualitative methods enriches the understanding of teacher empowerment and its implications.

Conclusion

In summary, this study rigorously examined the mediating role of teacher collaboration in Maldivian schools, emphasizing its transformative impact within PLCs and on teaching effectiveness. The findings highlight the importance of recognizing and nurturing collaborative

teacher practices in PLCs for a progressive and empowered educational landscape in the Maldives.

References

- Abdul Hafez, A. H., Tello, A., & Alqaraleh, S. (2022). COLCONF: Collaborative ConvNet Features-based Robust Visual Place Recognition for Varying Environments. *Arabian Journal for Science and Engineering*, 47(2), 2381–2395. <https://doi.org/10.1007/s13369-021-06148-8>.
- Ahmed, R., & Hussain, N. (2022). Problems and challenges of future medical education: current state and development prospects. *Futurity Education*, 31–43. <https://doi.org/10.57125/FED/2022.10.11.32>
- Akiba, M., & Liang, G. (2016). Effects of teacher professional learning activities on student achievement growth. *The Journal of Educational Research*, 109(1), 99–110. <https://doi.org/10.1080/00220671.2014.924470>
- Akram, M., & Zafar, F. (2019). A new approach to compute measures of connectivity in rough fuzzy network models. *Journal of Intelligent & Fuzzy Systems*, 36(1), 449–465. <https://doi.org/10.3233/JIFS-181751>
- Akram, M., & Zepeda, S. J. (2015). Development and Validation of a Teacher Self-assessment Instrument. In *Journal of Research and Reflections* (Vol. 9, Issue 2). <http://www.ue.edu.pk/jrre>
- Al-Habsi, T., Al-Busaidi, S., & Al-Issa, A. (2022). Integrating technology in English language teaching through a community of practice in the Sultanate of Oman: implications for policy implementation. *Educational Research for Policy and Practice*, 21(1), 43–68. <https://doi.org/10.1007/s10671-021-09291-z>
- Al-Marouf, R. S., Alshurideh, M. T., Salloum, S. A., AlHamad, A. Q. M., & Gaber, T. (2021). Acceptance of Google Meet during the Spread of Coronavirus by Arab University Students. *Informatics*, 8(2), 24. <https://doi.org/10.3390/informatics8020024>
- Austin, M. S., & Harkins, D. A. (2008). Assessing change: can organizational learning “work” for schools? *The Learning Organization*, 15(2), 105–125. <https://doi.org/10.1108/09696470810852302>
- Avalos, B. (2011). Teacher professional development in Teaching and Teacher Education over ten years. *Teaching and Teacher Education*, 27(1), 10–20. <https://doi.org/10.1016/j.tate.2010.08.007>
- Ballet, K., Kelchtermans, G., & Loughran, J. (2006). Beyond intensification towards a schotarship of practice: analysing changes in teachers’ work lives. *Teachers and Teaching*, 12(2), 209–229. <https://doi.org/10.1080/13450600500467415>
- Balyer, A., Karatas, H., & Alci, B. (2015). School Principals’ Roles in Establishing Collaborative Professional Learning Communities at Schools. *Procedia - Social and Behavioral Sciences*, 197, 1340–1347. <https://doi.org/10.1016/j.sbspro.2015.07.387>
- Bergdahl, N., & Nouri, J. (2021). Covid-19 and Crisis-Prompted Distance Education in Sweden. *Technology, Knowledge and Learning*, 26(3), 443–459. <https://doi.org/10.1007/s10758-020-09470-6>
- Bishop, A. R., Berryman, M. A., Wearmouth, J. B., & Peter, M. (2012). Developing an effective education reform model for indigenous and other minoritized students. *School Effectiveness and School Improvement*, 23(1), 49–70. <https://doi.org/10.1080/09243453.2011.647921>
- Bissessar, C. (2021). Social learning, collaborative professional learning, professional learning communities and communities of practice: Implications for praxis. In *Teacher Learning and Professional Development* (Vol. 6, Issue 1).
- Black, P., & Wiliam, D. (1998). Assessment and Classroom Learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. <https://doi.org/10.1080/0969595980050102>
- Bongomin, O., Gilibrays Ocen, G., Oyondi Nganyi, E., Musinguzi, A., & Omara, T. (2020). Exponential Disruptive Technologies and the Required Skills of Industry 4.0. *Journal of Engineering*, 2020, 1–17. <https://doi.org/10.1155/2020/4280156>
- Bovbjerg, K. M. (2006). Teams and Collegiality in Educational Culture. *European Educational Research Journal*, 5(3–4). <https://doi.org/10.2304/eerj.2006.5.3.244>

- Bragg, L. A., Walsh, C., & Heyeres, M. (2021). Successful design and delivery of online professional development for teachers: A systematic review of the literature. *Computers & Education*, 166, 104158. <https://doi.org/10.1016/j.compedu.2021.104158>
- Brouwer, P., Brekelmans, M., Nieuwenhuis, L., & Simons, R. (2012). Community development in the school workplace. *International Journal of Educational Management*, 26(4), 403–418. <https://doi.org/10.1108/09513541211227809>
- Carnoy, Martin. (1999). *Globalization and educational reform: what planners need to know*. Unesco, International Institute for Educational Planning.
- Carpenter, D. (2015). School culture and leadership of professional learning communities. *International Journal of Educational Management*, 29(5), 682–694. <https://doi.org/10.1108/IJEM-04-2014-0046>
- Chan, A. K. M., Nickson, C. P., Rudolph, J. W., Lee, A., & Joynt, G. M. (2020). Social media for rapid knowledge dissemination: early experience from the <scp>COVID</scp> -19 pandemic. *Anaesthesia*, 75(12), 1579–1582. <https://doi.org/10.1111/anae.15057>
- Chaseling, M., Boyd, W. E., Robson, K., & Brown, L. (2014). Whatever It Takes! Developing Professional Learning Communities in Primary School Mathematics Education. *Creative Education*, 05(11), 864–876. <https://doi.org/10.4236/ce.2014.511100>
- Chen, T., Peng, L., Yin, X., Rong, J., Yang, J., & Cong, G. (2020). Analysis of User Satisfaction with Online Education Platforms in China during the COVID-19 Pandemic. *Healthcare*, 8(3), 200. <https://doi.org/10.3390/healthcare8030200>
- Chin, W. W. (2010). *Bootstrap Cross-Validation Indices for PLS Path Model Assessment*. Department of Decision and Information Sciences, Bauer College of Business, University of Houston, Houston, TX, USA.
- Christensen, A. I., Lau, C. J., Kristensen, P. L., Johnsen, S. B., Wingstrand, A., Friis, K., Davidsen, M., & Andreassen, A. H. (2022). The Danish National Health Survey: Study design, response rate and respondent characteristics in 2010, 2013 and 2017. *Scandinavian Journal of Public Health*, 50(2), 180–188. <https://doi.org/10.1177/1403494820966534>
- Ciampa, K., & Gallagher, T. L. (2016). Teacher collaborative inquiry in the context of literacy education: examining the effects on teacher self-efficacy, instructional and assessment practices. *Teachers and Teaching*, 22(7), 858–878. <https://doi.org/10.1080/13540602.2016.1185821>
- Cohen, J. (1992). A Power Primer. In *Psychological Bulletin [PsycARTICLES]* (Vol. 112).
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage Publication.
- Creswell, J. W., & Tashakkori, A. (2007). Editorial: Differing Perspectives on Mixed Methods Research. *Journal of Mixed Methods Research*, 1(4), 303–308. <https://doi.org/10.1177/1558689807306132>
- Curry, K. A., Mwavita, M., Holter, A., & Harris, E. (2016). Getting assessment right at the classroom level: using formative assessment for decision making. *Educational Assessment, Evaluation and Accountability*, 28(1), 89–104. <https://doi.org/10.1007/s11092-015-9226-5>
- Danielson, C. (2007). *Enhancing Professional Practice: A Framework for Teaching (Professional Development)* (2nd Edition). Association for Supervision & Curriculum Development.
- Darling-Hammond, L., & McLaughlin, M. W. (2011). Policies That Support Professional Development in an Era of Reform. *Phi Delta Kappan*, 92(6), 81–92. <https://doi.org/10.1177/003172171109200622>
- Datnow, A. (2011). Collaboration and contrived collegiality: Revisiting Hargreaves in the age of accountability. *Journal of Educational Change*, 12(2). <https://doi.org/10.1007/s10833-011-9154-1>
- Davis, L. (2020, February). *Teacher Collaboration: How to Approach It In 2020*. <https://www.schoolology.com/blog/teacher-collaboration>
- De Barba, M., Waits, L. P., Genovesi, P., Randi, E., Chirichella, R., & Cetto, E. (2010). Comparing opportunistic and systematic sampling methods for non-invasive genetic monitoring of a small translocated brown bear population. *Journal of Applied Ecology*, 47(1), 172–181. <https://doi.org/10.1111/j.1365-2664.2009.01752.x>
- de Jong, L., Meirink, J., & Admiraal, W. (2019). School-based teacher collaboration: Different learning opportunities across various contexts. *Teaching and Teacher Education*, 86, 102925. <https://doi.org/10.1016/j.tate.2019.102925>

- de Jong, L., Wilderjans, T., Meirink, J., Schenke, W., Sligte, H., & Admiraal, W. (2021). Teachers' perceptions of their schools changing toward professional learning communities. *Journal of Professional Capital and Community*, 6(4), 336–353. <https://doi.org/10.1108/JPCC-07-2020-0051>
- de Vries, J. A., Dimosthenous, A., Schildkamp, K., & Visscher, A. J. (2022). The impact on student achievement of an assessment for learning teacher professional development program. *Studies in Educational Evaluation*, 74, 101184. <https://doi.org/10.1016/j.stueduc.2022.101184>
- Dewey, J. (1986). Experience and Education. *The Educational Forum*, 50(3), 241–252. <https://doi.org/10.1080/00131728609335764>
- Di Biase, R. (2019). Enabling pedagogic reform in the Maldives: implications for translating policy into teacher practice. *Asia Pacific Journal of Education*, 39(3), 372–390. <https://doi.org/10.1080/02188791.2019.1603101>
- Dignath, C., Rimm-Kaufman, S., van Ewijk, R., & Kunter, M. (2022a). Teachers' Beliefs About Inclusive Education and Insights on What Contributes to Those Beliefs: a Meta-analytical Study. *Educational Psychology Review*, 34(4), 2609–2660. <https://doi.org/10.1007/s10648-022-09695-0>
- Doğan, S., & Adams, A. (2018). Effect of professional learning communities on teachers and students: reporting updated results and raising questions about research design. *School Effectiveness and School Improvement*, 29(4), 634–659. <https://doi.org/10.1080/09243453.2018.1500921>
- Dufour, R., Dufour, R., & Eaker, R. (2008). *Berlin Community School Professional Learning Communities Handbook Adapted from Professional Learning Communities At Work*.
- Dufour, R., Mattos | Dufour, M., & Mattos, R. (2013). How do principals really improve schools? In *Educational Leadership* (Vol. 70, Issue 7).
- DuFour, R., & Reeves, D. (2016). The futility of PLC Lite. *Phi Delta Kappan*, 97(6), 69–71. <https://doi.org/10.1177/0031721716636878>
- Elkhwesky, Z., Abuelhassan, A. E., Elkhwesky, E. F. Y., & Khreis, S. H. A. (2023). Antecedents and consequences of behavioural intention to use virtual reality in tourism: Evidence from Gen-Y and Gen-Z consumers in Egypt. *Tourism and Hospitality Research*, 146735842311705. <https://doi.org/10.1177/14673584231170576>
- Evans, L., Thornton, B., & Usinger, J. (2012). Theoretical Frameworks to Guide School Improvement. *NASSP Bulletin*, 96(2), 154–171. <https://doi.org/10.1177/0192636512444714>
- F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014a). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Farrell Associate Professor, A., Novak Associate Professor, A., Skuce Associate Professor, T., Skyhar Associate Professor, C., Smith Associate Professor, C., Alysha Farrell Associate Professor, R., & Photograph Brent Mabon Ninette, C. (2021). Bumblebee on a Wild Rose BU Journal of Graduate Studies in Education. In *BU Journal of Graduate Studies in Education* (Vol. 13, Issue 1). www.irbu.arcabc.ca
- Firestone, W. A. (2014). Teacher Evaluation Policy and Conflicting Theories of Motivation. *Educational Researcher*, 43(2), 100–107. <https://doi.org/10.3102/0013189X14521864>
- Forsyth, C., Irving, M., Short, S., Tennant, M., & Gilroy, J. (2019). Strengthening Indigenous cultural competence in dentistry and oral health education: Academic perspectives. *European Journal of Dental Education*, 23(1). <https://doi.org/10.1111/eje.12398>
- Fowler-Davis, S., Young, R., Maden-Wilkinson, T., Hameed, W., Dracas, E., Hurrell, E., Bahl, R., Kilcourse, E., Robinson, R., & Copeland, R. (2021). Assessing the Acceptability of a Co-Produced Long COVID Intervention in an Underserved Community in the UK. *International Journal of Environmental Research and Public Health*, 18(24), 13191. <https://doi.org/10.3390/ijerph182413191>
- Franklin, H., & Harrington, I. (2019). A Review into Effective Classroom Management and Strategies for Student Engagement: Teacher and Student Roles in Today's Classrooms. *Journal of Education and Training Studies*, 7(12), 1. <https://doi.org/10.11114/jets.v7i12.4491>
- Gajda, R., & Koliba, C. J. (2008a). Evaluating and Improving the Quality of Teacher Collaboration. *NASSP Bulletin*, 92(2), 133–153. <https://doi.org/10.1177/0192636508320990>
- Gajda, R., & Koliba, C. J. (2008c). Evaluating and Improving the Quality of Teacher Collaboration. *NASSP Bulletin*, 92(2), 133–153. <https://doi.org/10.1177/0192636508320990>

- Gast, I., Schildkamp, K., & van der Veen, J. T. (2017). Team-Based Professional Development Interventions in Higher Education: A Systematic Review. *Review of Educational Research*, 87(4), 736–767. <https://doi.org/10.3102/0034654317704306>
- Geesa, R. L., Stith, K. M., & Teague, G. M. (2021). Integrative STEM Education and Leadership for Student Success. In *The Palgrave Handbook of Educational Leadership and Management Discourse* (pp. 1–20). Springer International Publishing. https://doi.org/10.1007/978-3-030-39666-4_36-1
- Gore, J., Lloyd, A., Smith, M., Bowe, J., Ellis, H., & Lubans, D. (2017). Effects of professional development on the quality of teaching: Results from a randomised controlled trial of Quality Teaching Rounds. *Teaching and Teacher Education*, 68, 99–113. <https://doi.org/10.1016/j.tate.2017.08.007>
- Gore, J., & Rickards, B. (2021). Rejuvenating experienced teachers through Quality Teaching Rounds professional development. *Journal of Educational Change*, 22(3), 335–354. <https://doi.org/10.1007/s10833-020-09386-z>
- Grissom, J. A., & Bartanen, B. (2019). Strategic Retention: Principal Effectiveness and Teacher Turnover in Multiple-Measure Teacher Evaluation Systems. *American Educational Research Journal*, 56(2), 514–555. <https://doi.org/10.3102/0002831218797931>
- Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use ‘PLS-SEM or CB-SEM: updated guidelines on which method to use’. In *Organizational Research Methods, MIS Quarterly, and International Journal* (Vol. 1, Issue 2).
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. In *Long Range Planning* (Vol. 46, Issues 1–2, pp. 1–12). Elsevier Ltd. <https://doi.org/10.1016/j.lrp.2013.01.001>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Han, J., & Yin, H. (2016). Teacher motivation: Definition, research development and implications for teachers. *Cogent Education*, 3(1), 1217819. <https://doi.org/10.1080/2331186X.2016.1217819>
- Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52(2), 224–235. <https://doi.org/10.1037/0022-0167.52.2.224>
- Harris, A., & Jones, M. (2010). Professional learning communities and system improvement. *Improving Schools*, 13(2), 172–181. <https://doi.org/10.1177/1365480210376487>
- Hayes, S. D., Flowers, J., & Williams, S. M. (2021). “Constant Communication”: Rural Principals’ Leadership Practices During a Global Pandemic. *Frontiers in Education*, 5. <https://doi.org/10.3389/educ.2020.618067>
- Hirsh, S., & Hord, SM. (2010). BUILDING HOPE, GIVING AFFIRMATION: LEARNING COMMUNITIES THAT ADDRESS SOCIAL JUSTICE ISSUES BRING EQUITY TO THE CLASSROOM. *Journal of Staff Development*, 31(4).
- Hoare, Z., & Hoe, J. (2013). Understanding quantitative research: part 2. *Nursing Standard*, 27(18), 48–55. <https://doi.org/10.7748/ns2013.01.27.18.48.c9488>
- Hoops, K., Fahimi, J., Khoeur, L., Studenmund, C., Barber, C., Barnhorst, A., Betz, M. E., Crifasi, C. K., Davis, J. A., Dewispelaere, W., Fisher, L., Howard, P. K., Ketterer, A., Marcolini, E., Nestadt, P. S., Rozel, J., Simonetti, J. A., Spitzer, S., Victoroff, M., ... Ranney, M. L. (2022). Consensus-Driven Priorities for Firearm Injury Education Among Medical Professionals. *Academic Medicine*, 97(1), 93–104. <https://doi.org/10.1097/ACM.0000000000004226>
- Hord, M. S. (1997). *PROFESSIONAL LEARNING COMMUNITIES: Communities of Continuous Inquiry and Improvement*.

- Huijboom, F., van Meeuwen, P., Rusman, E., & Vermeulen, M. (2023). Differences and similarities in the development of Professional Learning Communities: A cross-case longitudinal study. *Learning, Culture and Social Interaction*, 42, 100740. <https://doi.org/10.1016/j.lcsi.2023.100740>
- Islamic Development Bank. (2022). *MEMBER COUNTRY PARTNERSHIP STRATEGY FOR THE REPUBLIC OF MALDIVES (2022-2025) A RESILIENT AND SUSTAINABLE LIFE AND DIVERSIFIED ECONOMY FOR MALDIVIANS MAY 2022*.
- Izquierdo, I., Olea, J., & Abad, F. J. (2014). El análisis factorial exploratorio en estudios de validación: Usos y recomendaciones. *Psicothema*, 26(3), 395–400. <https://doi.org/10.7334/psicothema2013.349>
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). Cooperative Learning Returns To College What Evidence Is There That It Works? *Change: The Magazine of Higher Learning*, 30(4), 26–35. <https://doi.org/10.1080/00091389809602629>
- Jones, L., Stall, G., & Yarbrough, D. (2013). The Importance of Professional Learning Communities for School Improvement. *Creative Education*, 04(05), 357–361. <https://doi.org/10.4236/ce.2013.45052>
- Jr., J. F. H., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107. <https://doi.org/10.1504/IJMDA.2017.087624>
- Juma, S., Lehtomäki, E., & Naukkarinen, A. (2017). Scaffolding teachers to foster inclusive pedagogy and presence through collaborative action research. *Educational Action Research*, 25(5), 720–736. <https://doi.org/10.1080/09650792.2016.1266957>
- Kelchtermans, G. (n.d.). Kelchtermans, Geert Teacher collaboration and collegiality as workplace conditions. A review. 2006. <https://doi.org/10.25656/01:4454>
- Kelemen, T. K., Matthews, S. H., & Breevaart, K. (2020). Leading day-to-day: A review of the daily causes and consequences of leadership behaviors. *The Leadership Quarterly*, 31(1), 101344. <https://doi.org/10.1016/j.leaqua.2019.101344>
- Kennedy, M. M. (1998). Education reform and subject matter knowledge. *Journal of Research in Science Teaching*, 35(3), 249–263. [https://doi.org/10.1002/\(SICI\)1098-2736\(199803\)35:3<249::AID-TEA2>3.0.CO;2-R](https://doi.org/10.1002/(SICI)1098-2736(199803)35:3<249::AID-TEA2>3.0.CO;2-R)
- Kock, N. (2016). Hypothesis Testing with Confidence Intervals and P Values in PLS-SEM. *International Journal of E-Collaboration*, 12(3), 1–6. <https://doi.org/10.4018/IJeC.2016070101>
- Kopp, E., & Pesti, C. (2022). Organisational Learning and Resilience in Hungarian Schools During COVID-19 Distance Education – Study of Two Cases. *European Journal of Teacher Education*, 1–20. <https://doi.org/10.1080/02619768.2022.2154205>
- Korthagen, F. (2017). Inconvenient truths about teacher learning: towards professional development 3.0. *Teachers and Teaching: Theory and Practice*, 23(4), 387–405. <https://doi.org/10.1080/13540602.2016.1211523>
- Kulophas, D., & Hallinger, P. (2020). Leadership that matters: creating cultures of academic optimism that support teacher learning in Thailand. *Journal of Educational Administration*, 58(6), 605–627. <https://doi.org/10.1108/JEA-12-2019-0222>
- Lantz-Andersson, A., Lundin, M., & Selwyn, N. (2018). Twenty years of online teacher communities: A systematic review of formally-organized and informally-developed professional learning groups. *Teaching and Teacher Education*, 75, 302–315. <https://doi.org/10.1016/j.tate.2018.07.008>
- Lemoine, G. J., Eva, N., Meuser, J. D., & Falotico, P. (2021). Organizational performance with a broader focus: The case for a stakeholder approach to leadership. *Business Horizons*, 64(4), 401–413. <https://doi.org/10.1016/j.bushor.2020.10.007>
- Lomas, T., Waters, L., Williams, P., Oades, L. G., & Kern, M. L. (2021). Third wave positive psychology: broadening towards complexity. *The Journal of Positive Psychology*, 16(5), 660–674. <https://doi.org/10.1080/17439760.2020.1805501>
- Loughland, T., & Nguyen, H. T. (2020). Using teacher collective efficacy as a conceptual framework for teacher professional learning – A case study. *Australian Journal of Education*, 64(2), 147–160. <https://doi.org/10.1177/0004944120908968>
- L.R. Gay, Geoffrey E. Mills, & Peter Airasian. (2015). *Educational research: competencies for analysis and applications*. Boston.

- Marzano, R. J. (2007). *Special topic/The case for and against homework*.
<https://www.researchgate.net/publication/228819533>
- McPherson, K. E., McAloney-Kocaman, K., McGlinchey, E., Faeth, P., & Armour, C. (2021). Longitudinal analysis of the UK COVID-19 Psychological Wellbeing Study: Trajectories of anxiety, depression and COVID-19-related stress symptomology. *Psychiatry Research*, 304, 114138. <https://doi.org/10.1016/j.psychres.2021.114138>
- Ministry of Education. (2019). *Maldives Education Sector Plan Ministry of Education & Ministry of Higher Education Republic of Maldives Supported by: Global Partnership for Education*.
- Mishra, P., Pandey, C., Singh, U., Keshri, A., & Sabaretnam, M. (2019). Selection of appropriate statistical methods for data analysis. *Annals of Cardiac Anaesthesia*, 22(3), 297–301. https://doi.org/10.4103/aca.ACA_248_18
- MoE. (2019). *Maldives Education Sector Analysis*. https://support.moe.gov.mv/wp-content/uploads/2020/05/EDUCATION-SECTOR-ANALYSIS_ESA.pdf
- Musthfa, H. S. (2022). *The Impact of Covid19 Pandemic on the Higher Education Sector of the Maldives*. <https://www.researchgate.net/publication/364031121>
- Mutambuki, J. M., & Schwartz, R. (2018). We don't get any training: the impact of a professional development model on teaching practices of chemistry and biology graduate teaching assistants. *Chemistry Education Research and Practice*, 19(1), 106–121. <https://doi.org/10.1039/C7RP00133A>
- Mylopoulos, M., Brydges, R., Woods, N. N., Manzone, J., & Schwartz, D. L. (2016). Preparation for future learning: a missing competency in health professions education? *Medical Education*, 50(1), 115–123. <https://doi.org/10.1111/medu.12893>
- Nasir, M., Samy, N. K., & Bhaumik, A. (2022). Maldivian Perspectives: Principals' Leadership, Teachers' Self-efficacy and Obligations to Students. *International Journal of Advanced Research in Education and Society*, 4(2), 7–15. <https://doi.org/10.55057/ijares.2022.4.2.2>
- Nelson, T. H., Deuel, A., Slavitt, D., & Kennedy, A. (2010). Leading Deep Conversations in Collaborative Inquiry Groups. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(5), 175–179. <https://doi.org/10.1080/00098650903505498>
- Odewumi, M. O., Falade, A. A., Adeniran, A. O., Akintola, D. A., Oputa, G. O., & Ogunlowo, S. A. (2019). Acquiring Basic Chemistry Concepts through Virtual learning in Nigerian Senior Secondary Schools. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 2(1), 56–67. <https://doi.org/10.23917/ijolae.v2i1.7832>
- Ogunode, N. J., & Musa, A. (2022). *EMJ C EUROPEAN MULTIDISCIPLINARY JOURNAL OF MODERN SCIENCE* <https://emjms.academicjournal.io/index.php/> Volume:6 20XX European Multidisciplinary Journal of Modern Science Analysis of Factors Responsible for Nigerians' Patronizing of Foreign Higher Education. <https://emjms.academicjournal.io/index.php/>
- Owan, V. J., Emanghe, E. E., Denwigwe, C. P., Etudor-Eyo, E., Usoro, A. A., Ebuara, V. O., Effiong, C., Ogar, J. O., & Bassey, B. A. (2022). Curriculum Management and Graduate Programmes' Viability: The Mediation of Institutional Effectiveness Using PLS-SEM Approach. *Journal of Curriculum and Teaching*, 11(5), 114. <https://doi.org/10.5430/jct.v11n5p114>
- Owen, S. (2014). Teacher professional learning communities: Going beyond contrived collegiality toward challenging debate and collegial learning and professional growth. In *Australian Journal of Adult Learning* (Vol. 54, Issue 2).
- Paletta, A., Basyte Ferrari, E., & Alimehmeti, G. (2020). How Principals Use a New Accountability System to Promote Change in Teacher Practices: Evidence From Italy. *Educational Administration Quarterly*, 56(1), 123–173. <https://doi.org/10.1177/0013161X19840398>
- Pashby, K., da Costa, M., Stein, S., & Andreotti, V. (2020). A meta-review of typologies of global citizenship education. *Comparative Education*, 56(2), 144–164. <https://doi.org/10.1080/03050068.2020.1723352>
- Perry, K. K. (2021). The new 'bond-age', climate crisis and the case for climate reparations: Unpicking old/new colonialities of finance for development within the SDGs. *Geoforum*, 126, 361–371. <https://doi.org/10.1016/j.geoforum.2021.09.003>

- Pianta, R. C., Nimetz, S. L., & Bennett, E. (1997). Mother-child relationships, teacher-child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly, 12*(3), 263–280. [https://doi.org/10.1016/S0885-2006\(97\)90003-X](https://doi.org/10.1016/S0885-2006(97)90003-X)
- Prenger, R., Poortman, C. L., & Handelzalts, A. (2017). Factors influencing teachers' professional development in networked professional learning communities. *Teaching and Teacher Education, 68*, 77–90. <https://doi.org/10.1016/j.tate.2017.08.014>
- Preston, C., Goldring, E., Berends, M., & Cannata, M. (2012). School innovation in district context: Comparing traditional public schools and charter schools. *Economics of Education Review, 31*(2), 318–330. <https://doi.org/10.1016/j.econedurev.2011.07.016>
- Raff, L. J. (1999). Professional Learning Communities at Work: Best Practices for Enhancing Student Achievement. *American Journal of Clinical Pathology, 111*(4), 563–563. <https://doi.org/10.1093/ajcp/111.4.563>
- Ramayah, T. J. F. H., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2018). *Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0. An updated guide and practical guide to statistical analysis*. (2nd Edition). Pearson.
- Redding, C., Booker, L. N., Smith, T. M., & Desimone, L. M. (2019). School administrators' direct and indirect influences on middle school math teachers' turnover. *Journal of Educational Administration, 57*(6), 708–730. <https://doi.org/10.1108/JEA-10-2018-0190>
- Sabol, T. J., & Pianta, R. C. (2012). Recent trends in research on teacher–child relationships. *Attachment & Human Development, 14*(3), 213–231. <https://doi.org/10.1080/14616734.2012.672262>
- Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. *Teaching and Teacher Education, 101*, 103305. <https://doi.org/10.1016/j.tate.2021.103305>
- Sang, S., Lee, J., & Lee, J. (2010). E-government adoption in Cambodia: a partial least squares approach. *Transforming Government: People, Process and Policy, 4*(2), 138–157. <https://doi.org/10.1108/17506161011047370>
- Sato, M., & Loewen, S. (2022). The Research–Practice Dialogue in Second Language Learning and Teaching: Past, Present, and Future. *The Modern Language Journal, 106*(3), 509–527. <https://doi.org/10.1111/modl.12791>
- Scherer, R., Howard, S. K., Tondeur, J., & Siddiq, F. (2021). Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? *Computers in Human Behavior, 118*, 106675. <https://doi.org/10.1016/j.chb.2020.106675>
- Schleifer, D., Rinehart, C., & Yanisch, T. (2017). *A GUIDE TO RESEARCH Teacher Collaboration In Perspective: A Guide to Research 2 Teacher Collaboration In Perspective: A Guide to Research A guide from Public Agenda* by. <http://www.in-perspective.org/pages/teacher-collaboration>
- Seufert, S., Guggemos, J., & Sailer, M. (2021). Technology-related knowledge, skills, and attitudes of pre- and in-service teachers: The current situation and emerging trends. *Computers in Human Behavior, 115*, 106552. <https://doi.org/10.1016/j.chb.2020.106552>
- Shafeeu, I. (n.d.). *Durham E-Theses Relationship Between Principals' Instructional Leadership and School Effectiveness. Does It Make a Deference? Evidence from the Maldives*. <http://etheses.dur.ac.uk/13134/>
- Shareef, J. (2021). Transition Experiences of Maldivian Students: Moving from GCSEs to Advanced Level Studies. *International Journal of Social Research and Innovation, 5*(1), 1–26. <https://doi.org/10.55712/ijrsri.v5i1.28>
- Sidiq, Y., Ishartono, N., Desstya, A., Prayitno, H. J., Anif, S., & Hidayat, M. L. (2021). Improving Elementary School Students' Critical Thinking Skill in Science through HOTS-based Science Questions: A Quasi-Experimental Study. *Jurnal Pendidikan IPA Indonesia, 10*(3), 378–386. <https://doi.org/10.15294/jpii.v10i3.30891>
- Sims, S., & Fletcher-Wood, H. (n.d.). *Characteristics of effective teacher professional development: what we know, what we don't, how we can find out*. <https://doi.org/10.08.18>
- Sodiq, A., & Di Biase, R. (2022a). “We cannot do away with exams: Parents believe in them, so does the wider community”. Reimagining the examination system in the Maldives. *Prospects, 51*(4), 701–719. <https://doi.org/10.1007/s11125-022-09613-w>

- Stehle, S. M., & Peters-Burton, E. E. (2019). Developing student 21st Century skills in selected exemplary inclusive STEM high schools. *International Journal of STEM Education*, 6(1), 39. <https://doi.org/10.1186/s40594-019-0192-1>
- Steinert, Y., Mann, K., Anderson, B., Barnett, B. M., Centeno, A., Naismith, L., Prideaux, D., Spencer, J., Tullo, E., Viggiano, T., Ward, H., & Dolmans, D. (2016). A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. *Medical Teacher*, 38(8), 769–786. <https://doi.org/10.1080/0142159X.2016.1181851>
- Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional Learning Communities: A Review of the Literature. *Journal of Educational Change*, 7(4), 221–258. <https://doi.org/10.1007/s10833-006-0001-8>
- Storberg-Walker, J. (2008). Wenger's Communities of Practice Revisited: A (Failed?) Exercise in Applied Communities of Practice Theory-Building Research. *Advances in Developing Human Resources*, 10(4), 555–577. <https://doi.org/10.1177/1523422308319541>
- Stronge, J. H. (2018). *Qualities of Effective Teachers 3rd Edition* (3rd Edition). ASCD.
- Stronge, J. H., & Xu, X. (2021). *Qualities of Effective Principals, 2nd Edition* (2nd Edition). ASCD.
- Subban, P., Bradford, B., Sharma, U., Loreman, T., Avramidis, E., Kullmann, H., Sahli Lozano, C., Romano, A., & Woodcock, S. (2023). Does it really take a village to raise a child? Reflections on the need for collective responsibility in inclusive education. *European Journal of Special Needs Education*, 38(2), 291–302. <https://doi.org/10.1080/08856257.2022.2059632>
- Supovitz, J. A. (2002). Developing Communities of Instructional Practice. *Teachers College Record: The Voice of Scholarship in Education*, 104(8), 1591–1626. <https://doi.org/10.1111/1467-9620.00214>
- Talvio, M., & Lonka, K. (2021). *International Approaches to Promoting Social and Emotional Learning in Schools*. Routledge. <https://doi.org/10.4324/9781003093053>
- Tam, A. C. F. (2015). The role of a professional learning community in teacher change: a perspective from beliefs and practices. *Teachers and Teaching*, 21(1), 22–43. <https://doi.org/10.1080/13540602.2014.928122>
- Thees, M., Kapp, S., Strzys, M. P., Beil, F., Lukowicz, P., & Kuhn, J. (2020). Effects of augmented reality on learning and cognitive load in university physics laboratory courses. *Computers in Human Behavior*, 108, 106316. <https://doi.org/10.1016/j.chb.2020.106316>
- Thomas, L., Herbert, J., & Teras, M. (2014). A sense of belonging to enhance participation, success and retention in online programs. *The International Journal of the First Year in Higher Education*, 5(2). <https://doi.org/10.5204/intjfyhe.v5i2.233>
- Topping, K. J., & Sanders, W. L. (2000). Teacher Effectiveness and Computer Assessment of Reading Relating Value Added and Learning Information System Data. *School Effectiveness and School Improvement*, 11(3), 305–337. [https://doi.org/10.1076/0924-3453\(200009\)11:3;1-G;FT305](https://doi.org/10.1076/0924-3453(200009)11:3;1-G;FT305)
- Ültanır, E. (2012). *AN EPISTEMOLOGICAL GLANCE AT THE CONSTRUCTIVIST APPROACH: CONSTRUCTIVIST LEARNING IN DEWEY, PIAGET, AND MONTESSORI* (Vol. 5, Issue 2). www.e-iji.net
- UNICEF. (2021). *Situation Analysis of Children and Youth in the Maldives UNICEF Maldives Country Office*. www.greenink.co.uk
- Urbach, N., Smolnik, S., & Riempp, G. (2010). An empirical investigation of employee portal success. *The Journal of Strategic Information Systems*, 19(3), 184–206. <https://doi.org/10.1016/j.jsis.2010.06.002>
- van Leeuwen, A., & Janssen, J. (2019). A systematic review of teacher guidance during collaborative learning in primary and secondary education. *Educational Research Review*, 27, 71–89. <https://doi.org/10.1016/j.edurev.2019.02.001>
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80–91. <https://doi.org/10.1016/j.tate.2007.01.004>
- Wahyudi, A. T., Ramadhan, T., Adam, F. A., Ismail, N., Rivaldi, F., & Effendi, M. R. (2022). On The Design of Object Stamping System Using Electro-Pneumatic Based on PLC OMRON CP1E. *2022 16th International Conference on Telecommunication Systems, Services, and Applications (TSSA)*, 1–5. <https://doi.org/10.1109/TSSA56819.2022.10063896>

- Walsh, J. M. (2012). Co-Teaching as a School System Strategy for Continuous Improvement. *Preventing School Failure: Alternative Education for Children and Youth*, 56(1), 29–36. <https://doi.org/10.1080/1045988X.2011.555792>
- Watson, C. (2014). Effective professional learning communities? The possibilities for teachers as agents of change in schools. *British Educational Research Journal*, 40(1), 18–29. <https://doi.org/10.1002/berj.3025>
- Wiersma, W. (2000). *Research Methods in Education: An Introduction* (7th Edition). Ally & Bacon, Boston, MA.
- Woodland, R. H. (2016). Evaluating PK–12 Professional Learning Communities. *American Journal of Evaluation*, 37(4), 505–521. <https://doi.org/10.1177/1098214016634203>
- Woodland, R. H., & Hutton, M. S. (2012). Evaluating Organizational Collaborations. *American Journal of Evaluation*, 33(3), 366–383. <https://doi.org/10.1177/1098214012440028>
- Woodland, R., Lee, M. K., & Randall, J. (2013a). A validation study of the Teacher Collaboration Assessment Survey. *Educational Research and Evaluation*, 19(5), 442–460. <https://doi.org/10.1080/13803611.2013.795118>
- Woodland, R., Lee, M. K., & Randall, J. (2013b). A validation study of the Teacher Collaboration Assessment Survey. *Educational Research and Evaluation*, 19(5), 442–460. <https://doi.org/10.1080/13803611.2013.795118>
- Woodland, R., Lee, M. K., & Randall, J. (2013c). A validation study of the Teacher Collaboration Assessment Survey. *Educational Research and Evaluation*, 19(5), 442–460. <https://doi.org/10.1080/13803611.2013.795118>
- Yang, X. (2023). A Historical Review of Collaborative Learning and Cooperative Learning. *TechTrends*, 67(4), 718–728. <https://doi.org/10.1007/s11528-022-00823-9>
- Yin, H., & Zheng, X. (2018). Facilitating professional learning communities in China: Do leadership practices and faculty trust matter? *Teaching and Teacher Education*, 76, 140–150. <https://doi.org/10.1016/j.tate.2018.09.002>
- Zheng, X., Yin, H., & Li, Z. (2019). Exploring the relationships among instructional leadership, professional learning communities and teacher self-efficacy in China. *Educational Management Administration & Leadership*, 47(6), 843–859. <https://doi.org/10.1177/1741143218764176>