Leadership and Infrastructure in Implementing Professional Learning Communities in Lahore HEIs: An Interpretive Structural Modeling Approach

Ishaque, Ayesha and Audi, Marc

Department of Education, University of Management Technology Lahore, Pakistan, Abu Dhabi School of Management (ADSM), UAE, University Paris 1 Pantheon Sorbonne, France

2024

Leadership and Infrastructure in Implementing Professional Learning Communities in Lahore HEIs: An Interpretive Structural Modeling Approach

Ayesha Ishaque[1], Marc Audi[2]

Abstract

Professional learning communities (PLCs) are considered vital for teachers' professional development and filling the achievement gaps among students. Implementing PLCs in higher educational institutions (HEIs) may be affected by various factors such as leadership support, infrastructure, environment, and knowledge about its usefulness. Identifying all these key factors is necessary for the HEIs growth and students' outcomes. This study aims to identify such important factors that help implement PLCs in Pakistani universities by utilizing Interpretive Structural Modeling (ISM). The data were collected from fourteen university faculty members. This qualitative study first identified the important factors for the implementation of PLCs from the prior studies then established relationships among these factors and proposed a final model through the ISM approach. The results suggest that leadership support and infrastructure are important factors for the implementation of PLCs in Pakistani HEIs while time constraints, equal participation, workload, working environment trust among stakeholders and vague understanding of PLCs act as mediators. The suggested final model can be used for further empirical investigation and future planning and implementation of the PLCs.

Keywords: Infrastructure, Higher Educational Institutions, Interpretive Structural Modeling, Leadership, Professional Learning Communities

1. Introduction

A professional learning community (PLC) is a group of leaders, teachers and or administrators who share thoughts and collectively work for the improvements of teaching practices and establish a learning environment for students' achievements (Hord 1997 & 2009; Khasawneh et al., 2023; Khan, 2018; Luyten & Bazo 2019). The educational policies and reforms are connected with the true endeavors of leadership and teachers to understand the significance of changes in their teaching practices and students' achievements. (Luyten and Bazo, 2019; Rasheed, 2020). The idea of a PLC has been acquainted to deal with the various issues concerning the achievement gaps among students as it helps to improve teachers' professional development and raises the standards of teaching practices. (Kruse & Johnson, 2017; Qiao et al., 2018; Riaz & Safdar, 2018). The PLCs contains attributes such as shared and supportive leadership, collective work effort, common vision, supporting and conducive working environment, and shared personal practice (Hord, 1997 & 2009; Mahmood & Naz, 2018; Nguyen et al., 2023; Quader, 2024).

The PLC participating teachers' community make them able to participate in professional discussions with others having same expertise which leads them to enhance their pedagogical skills (Kruse & Johnson, 2017; Azhar & Saboor, 2018). Moreover, through active participation in PLCs, teachers generate new philosophies and embrace various effective

[1] Department of Education, University of Management & Technology Lahore, Pakistan
[2] Abu Dhabi School of Management (ADSM), UAE, University Paris 1 Pantheon Sorbonne, France

teaching practices to meet current and diversified needs of students that make them motivated to learn (Stoll et al. 2006; Lee et al. 2011; Afzal, 2018).

Many educational institutions around the globe have started to implement PLCs as one of their strategic plan to support educational reforms and thereby students' achievements (Pang & Wang, 2016; Iqbal & Abbas, 2024). The educational institutions of Pakistan including universities are way behind in the implementation of PLCs. The Higher Education Commission (HEC) of Pakistan making various strategies for the improvements of educational system to help HEIs to fill the students' achievement gaps. Given the limited resources, universities in Pakistan are also taking various initiatives such as infrastructure development, and training programs for the teachers' professional development with the ultimate goal of enhancing students' outcomes. However, practically the culture of PLCs is still lacking behind as compared to the Western educational system due to many reasons such as lack of leadership support, overwhelming workload, time constraints, poor infrastructure, particularly in public sector universities, unconducive working environment, lack of trust and lack of knowledge about PLCs.

This study is an attempt to find out relationships among these key factors in the implementation of PLCs through ISM approach. The prior studies conducted on the education system of Pakistan have rather ignored to explore or search the key factors for the implementation of PLCs in HEIs. The present study contributes in the existing literature by twofold First, this study explores the role of leadership support and infrastructure in the implementation of PLCs in universities located in Lahore. Second, besides these few other important factors as namely time constraints, equal participation, workload, working environment trust among stakeholders and vague understanding of PLCs act as mediators have also been considered which further strengthened the study provide more in depth information concerning the their role as mediating factors in the implementation of PLCs. Third, unlikely the previous studies who utilized conventional qualitative research approaches, this study uses ISM to suggest a theoretical model for future empirical investigations.

2. Literature Review

The prior studies on the challenges and implementation of PLCs remain scant, particularly on the educational system of Pakistan. The contextual setting of any educational system pact a fundamental role in deciding the type (form, structure, and elements) of PLCs in diversified educational setups (Hairon and Dimmock, 2012; Pang and Wang, 2016; Zhang and Pang, 2016). The contextual factor in Pakistan is attributed to the diversified educational culture in different types of universities. The review of the literature showed that research on PLC mostly centers on Western education settings despite the increasing interest in the implementation of PLCs, the research in the Asian context is still scant (Qiao et al., 2018; Zhang and Pang, 2016).

The PLC is generally considered as "a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way" (Stoll et al., 2006). In the education context, PLC alludes to the initiative of a group of educators who are committed and collaborate continuously by making inquiries and doing action research to increase the outcome of students (DuFour et al., 2006). The critical element of PLC is a "collective focus on professional learning" by which teachers ponder their teaching practices and perform as professionals to ad-lib their practices in a positive way (Chauraya & Brodie, 2017). The review of literature and

functioning of PLCs revealed that few factors are crucial for its successful implementation such as leadership support, infrastructure, time constraints, equal participation, workload, working environment trust among stakeholders and knowledge about PLCs.

The educational leadership support is a vital component to bring key changes and the execution of PLCs. In educational, leadership encourage and guide the energies and talents of educators, students, and guardians toward accomplishing common goals of all stakeholders (Mullen, 2009; Mullen & Schunk, 2010). Effective leadership in educational setups assists in promoting an excellent learning environment for staff and students. Moreover, PLC leadership plays an imperative role in educational institutions where it empowers other team members, promote teacher leadership, and believes in collaboration among stakeholders and staff (Mullen, 2009; Hord, 2004 & 2009; Mullen & Schunk, 2010; Wang 2016). PLC leaders create an environment for transforming schools into cooperative learning societies by utilizing their energy and time (Mullen and Hutinger, 2008; Mullen & Schunk, 2010). Through such endeavors, teachers lay out networks for investigating educational issues, fulfilling the needs of new teachers, encouraging multidisciplinary educational plans, and carrying communities to schools.

The effectiveness of leadership in PLCs is possible if the required infrastructure and resources are available to accomplish common targeted objectives (Hopkins, Spillane, & Shirrell, 2018). The educational infrastructure supports collaboration among the team members of PLCs as well as helps to formulate strategic planning for the teacher learning and students' achievements (Stoll et al. 2006; Mullen, 2009).

Besides the educational leadership and infrastructure, the overall educational institutional environment also matters significantly. It may include time constraints, equal participation, workload, working environment trust among stakeholders and understanding of PLCs. Zhang et al. (2017) discussed various components which impact the implementation of PLC like time constraints, unsupportive leadership, lack of collaboration, and negative working culture. The overwhelming workload can be a cause of demotivation among the team members of PLCs as they are burnt out (Capers, 2004; Chua et al. 2020; Hairon & Tan, 2017; Zhang et al., 2017). As shown by Hairon and Tan (2017), teaching workload and vague understanding of the implementation lack PLC. Studies on PLCs emphasize the important role of institutional culture. Deal and Peterson (2009) suggest these factors as a shared sense of purpose, teachers' shared empowerment in various matters, and collaboration in teaching practices. The team members of PLCs can work together in culturally diversified educational institutions that share school improvement and social change as a vision and help with building their capacity for change (Chua et al. 2020).

3. Methodology

3.1. Sample and Data Description

This qualitative study first identify the important factors for the implementation of PLCs from the survey literature then build interrelationships among identified factors and proposes a final model through ISM approach for future empirical investigation. The study collected data from fourteen university (located in Lahore) faculty members (questionnaire provided in Appendix). In this research, the relationship of nine factors in the implementation of PLCs was identified through the technique of ISM. All participants were experienced and most of them have PhD qualification (Table 1).

These specialists were well familiar with the problems of their universities and they are able to make the judgments more trustworthy and consistent about PLCs. It was asked to the experts to put the values of V, A, X, and O in the questionnaire to evaluate the relationship between the factors.

Table 1: Demographics of Participants

Sr. No.	Gender	Qualification	Designation	Experience
1.	Male	PhD	Associate Professor	10
2.	Male	PhD	Assistant Professor	13
3.	Male	PhD	Assistant Professor	8
4.	Female	PhD	Assistant Professor	8
5.	Male	PhD	Assistant Professor	5
6.	Male	PhD	Assistant Professor	5
7.	Male	PhD	Assistant Professor	5
8.	Male	PhD	Assistant Professor	5
9.	Female	PhD	Assistant Professor	4
10.	Female	PhD	Assistant Professor	2
11.	Male	MPhil/MS/MBA	Lecturer	12
12.	Male	MPhil/MS/MBA	Lecturer	12
13.	Male	MPhil/MS/MBA	Lecturer	10
14.	Male	MPhil/MS/MBA	Lecturer	3

Source: Author's compilation

Make the ratings to each decision problem for each criterion

- Pairwise Comparison Matrix
- Normalizing & averaging the values in each row to obtain consistent rating
- Computing and inspection the consisting ratio (CR)
- Computing the weighted average rating for each decision problem with the peak score

3.2. Interpretive Structural Modelling (ISM)

The ISM is an all-purpose examination and decision support procedure. It was invented by John N. Warfield in 1973. It is well structured method to deal with complex relationships. A variety of problems may be connected to a problem under consideration. Though, the related and unrelated associations among the issues explain the condition far more exactly than distinct factors taken into the isolation. The benefits of the ISM process are to identify the factors, the description of their interrelationships and the imposition of level order and way to clarify the difficult problems from a system viewpoint.

ISM technique has following six steps: (1) Identify the system factors set: In my thesis, susceptibility factors are identified, and there is a high needed to focus on these factors for NGOs' growth. (2) Construct the Structural Self Interaction Matrix (SSIM): After the completion of first step, the symbols (V, A, X, O) are placed in SSIM from the filled questionnaire. The SSIM symbols are written by taking the mode of respondents' values. (3) Step 3: Reachability Matrix: 0 and 1 values are derived from SSIM. In the reachability matrix, the values of SSIM are denoted as 0 and 1. (4) Final Reachability Matrix: After the initial reachability matrix, a final matrix is established to check the transitivity. Transitivity is an assumption-based step in ISM. It can be biased also. (5) Diverse levels from Final Reachability Matrix: After the completion of the 4th step, the final reachability matrix is partitioned into diverse levels. (6) Diagraph: All the resulting relationships of factors are linked through a diagraph. Through the replacement of variable nodes, the digraph is transformed into ISM with statements (if required).

4. Results

4.1. Structural Self-Interaction Matrix (SSIM):

A panel having 14 experts is recruited to fill out the questionnaire of ISM. The connection between the susceptibility factors is developed in SSIM. Four ciphers (V, A, X, O) are used to represent the direction of the relationship between the variables (*i* and *j*).

V- variable *i* will support to attain variable *j*;

A- variable *j* will support attaining variable *i*;

X- variable *i* and *j* will support each other; and

O- variable *i* and *j* are dissimilar

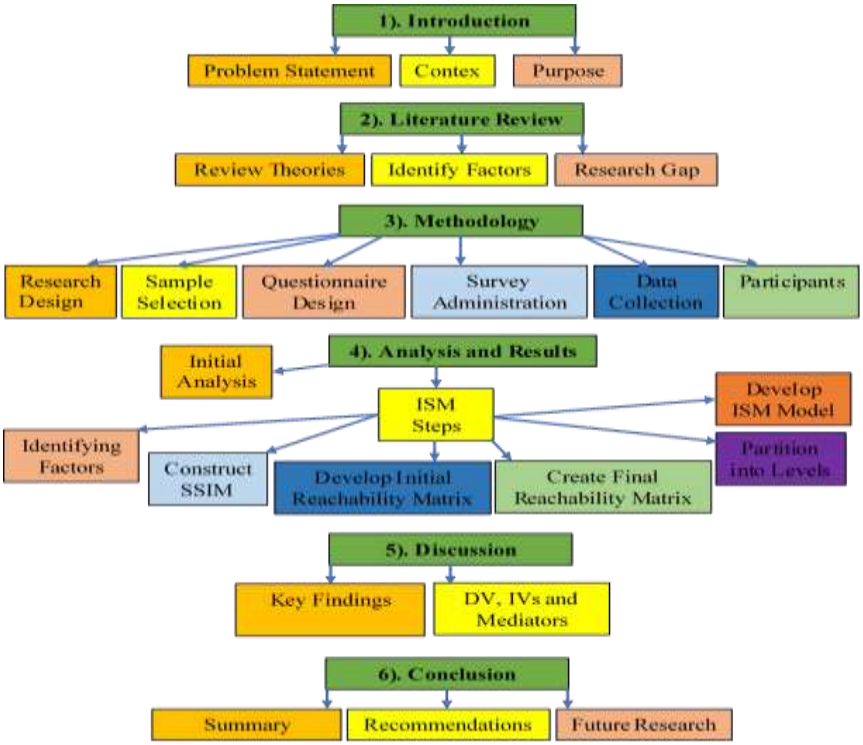

Figure 1: Methodological Steps – Flow Chart

The SSIM (Table 2) is used to describe the relationship between the codes V, A, X, and O. It is a binary matrix system. If a column influences the row, it is denoted as A. For example, in the SSIM, Leadership Support influences Time Constraints, it is written as A (2, 3). If the row influences the column e.g., factor 4 (Infrastructure) leads to factor 5 (Equal Participation), it is written as V (4, 5). Workload and Work Environment leads to each other (7, 8), it is written as symbol X. O denoted as there is no relationship between the factors, Infrastructure and Trust among Stakeholders has no relationship. Cell (4, 8) is denoted as O. The ISM questionnaire is attached in the appendix.

Table 2: Structural Self-Interaction Matrix (SSIM)

	Variables	1	2	3	4	5	6	7	8	9
1	Implementation of PLCs		V	V	V	V	V	V	X	V
2	Leadership Support			A	X	A	A	A	X	O
3	Time Constraints				V	X	X	X	V	O
4	Infrastructure					A	O	A	O	O
5	Equal Participation						X	X	X	X
6	Workload							X	X	X
7	Working Environment								X	X
8	Trust among Stakeholders									X
9	Vague Understanding of PLCs									

Source: Author's

4.2. Initial Reachability Matrix

The rules of applying 0 and 1 are as follows in the initial reachability matrix: in the SSIM (*i, j*) value is denoted as V, in the initial reachability matrix, 1 is the value of (*i, j*) and 0 is the value of (*j, i*); 1 has been written in cell (1, 11) for V and 0 in cell (11, 1) in initial reachability matrix. In the SSIM, (*i, j*) value is written as A, the (*i, j*) value in the initial reachability matrix is placed as 0 and (*i, j*) value as 1; for A (1, 8) in SSIM, 0 has been given in cell (1, 8) and 1 in cell (8, 1) in initial reachability matrix. In the SSIM (*i, j*) value is sited as X, then (*i, j*) value in the initial reachability matrix is written as 1 and (*i, j*) value is also written as 1; for X. (9, 14) in SSIM, 1 has been given in cell (9, 14) and 1 is also placed in cell (14, 9) in initial reachability matrix. In the SSIM (*i, j*) value is denoted as O, (*i, j*) value in the initial reachability matrix is 0 and (*i, j*) value is also 0; for O (1, 2) in SSIM, 0 has been given in cell (1, 2) and 0 in cell (2, 1) in initial reachability matrix.

4.3. Final Reachability Matrix

The final reachability matrix is attained from the initial reachability matrix by integrating the transitivity. The factors have 0 relationships, their one side denoted as 1 in the final reachability matrix (Table 3).

Table 3: Reachability Matrix (RM)

Variables	1	2	3	4	5	6	7	8	9	Driving Power
Implementation of PLCs	1	1	1	1	1	1	1	1	1	9
Leadership Support	0	1	0	1	0	0	0	1	0	3
Time Constraints	0	1	1	1	1	1	1	1	0	7
Infrastructure	0	1	0	1	0	0	0	0	0	2
Equal Participation	0	1	1	1	1	1	1	1	1	8
Workload	0	1	1	0	1	1	1	1	1	7
Working Environment	0	1	1	1	1	1	1	1	1	8
Trust among Stakeholders	1	1	0	0	1	1	1	1	1	7
Vague Understanding of PLCs	0	0	0	0	1	1	1	1	1	5
Dependence Power	2	8	5	6	7	7	7	8	6	

Source: Author's

Table 4: Level Partitioning(LP)

Elements (M_i)	Reachability Set R(M_i)	Antecedent Set A(N_i)	Intersection Set R(M_i)∩A(N_i)	Level
1	1, 2, 3, 4, 5, 6, 7, 8, 9,	1, 8,	1, 8	3
2	2, 4, 8	1, 2, 3, 4, 5, 6, 7, 8,	2, 4, 8,	1
3	2, 3, 4, 5, 6, 7, 8,	1, 3, 5, 6, 7,	3, 5, 6, 7,	2
4	2, 4	1, 2, 3, 4, 5, 7,	2, 4	1
5	2, 3, 4, 5, 6, 7, 8, 9,	1, 3, 5, 6, 7, 8, 9,	3, 5, 6, 7, 8, 9,	2
6	2, 3, 5, 6, 7, 8, 9,	1, 3, 5, 6, 7, 8, 9,	3, 5, 6, 7, 8, 9,	2
7	2, 3, 4, 5, 6, 7, 8, 9,	1, 3, 5, 6, 7, 8, 9,	3, 5, 6, 7, 8, 9,	2
8	1, 2, 5, 6, 7, 8, 9,	1, 2, 3, 5, 6, 7, 8, 9,	1, 2, 5, 6, 7, 8, 9,	2
9	5, 6, 7, 8, 9,	1, 5, 6, 7, 8, 9,	5, 6, 7, 8, 9,	2

Source: Author's

4.4. Level Partitioning and developing of ISM Model

After the evaluation of final reachability matrix, the reachability set and antecedent set (Warfield, 1974) for each variable have been found. Intersection set have been resulting from combinations of factors in reachability and antecedent set. The same factors from the intersection set have been given the top-level variable in the ISM hierarchy. The same factors are categorized from the reachability set and antecedent set (Table 4). At level 1, leadership support (C2) and infrastructure (C4) are listed. The factors which are listed at level two are time constraints, equal participation, workload, working environment, trust among stakeholders, and vague understanding of PLCs. While implementation of PLCs is listed at level three. Based on this partitioning, the final ISM model is depicted in Figure 2. The working of ISM approach

indicates that leadership support and infrastructure are important factors for the implementation of PLCs in Pakistani HEIs which is consistent with prior studies (Mullen, 2009; Mullen & Schunk, 2010). The leadership support and its role create such a culture that helps to implement PLCs effectively and also promotes an excellent learning environment for staff and students outcomes (Mullen, 2009; Hord, 2004 & 2009; Mullen & Schunk, 2010; Wang 2016).

However, other variables (time constraints, equal participation, workload, working environment trust among stakeholders, and vague understanding of PLCs) are at level two and playing the role of mediating factors between leadership support and the implementation of PLCs, and infrastructure and the implementation of PLCs. The suggested final model can be used for further empirical investigation and future planning and implementation of the PLCs. These factors are the helping hands for the effective leadership support and infrastructure for the implementation of PLCs.

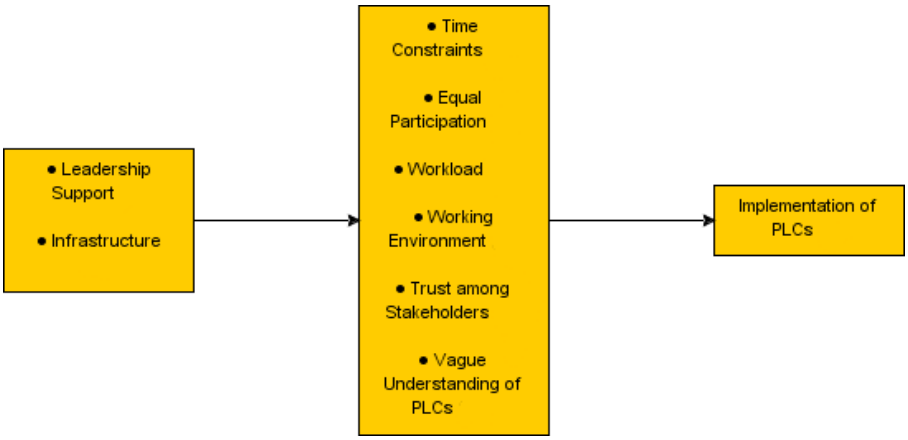

Figure 2: Final Structural Model

5. Discussion

The current study investigated the PLCs in Pakistani HEIs by identifying and analyzing the key factors influencing their establishment. Using ISM, the findings identified leadership support and infrastructure as critical factors for the successful implementation of PLCs. Additionally, several mediating factors such as time constraints, equal participation, workload, working environment, trust among stakeholders, and a vague understanding of PLCs were highlighted.

5.1. Leadership Support and PLC Implementation

The findings indicate that leadership support is a foundational element for the effective implementation of PLCs. This aligns with the Resource-Based View (RBV) theory, which emphasizes that the unique resources and capabilities, such as strong leadership, are crucial for gaining and sustaining a competitive advantage (Barney, 1991). Leadership support provides the necessary vision, resources, and motivation for faculty members to engage in PLC activities. Previous studies have also underscored the role of leadership in fostering a collaborative culture and facilitating professional development (Fullan, 2006; Louis et al., 2010). Effective leadership in HEIs can promote a culture of continuous learning and collaboration, which is essential for the success of PLCs.

5.2. Infrastructure and PLC Implementation

Infrastructure is another critical factor identified in this study. Adequate infrastructure, including technological resources and physical spaces conducive to collaborative work, is vital for the smooth functioning of PLCs. This finding is

consistent with the findings of Bolam et al. (2005), who highlighted that appropriate infrastructure supports the logistical aspects of PLC activities, enabling regular meetings and resource sharing among faculty members. Moreover, the availability of modern technological tools facilitates the dissemination and exchange of knowledge, thereby enhancing the overall effectiveness of PLCs.

5.3. Mediating Factors

The study also revealed several mediating factors that can influence the implementation of PLCs.

- **Time Constraints**: Time constraints emerged as a significant barrier, consistent with the findings of DuFour and Eaker (1998), who noted that insufficient time for collaboration is a common challenge in the implementation of PLCs. Time management strategies and institutional policies that allocate dedicated time for PLC activities can mitigate this issue.
- **Equal Participation**: Ensuring equal participation among faculty members is crucial for the success of PLCs. This factor aligns with the principles of social exchange theory, which posits that equitable participation fosters trust and commitment among members (Blau, 2017). Promoting inclusive practices and encouraging all members to contribute can enhance the collaborative environment within PLCs.
- **Workload**: High workload is another mediating factor that can impede the active participation of faculty members in PLCs. This finding resonates with the study by Hargreaves (2001), which highlighted that excessive workload can detract from teachers' ability to engage in professional development activities. Institutions need to balance teaching and administrative responsibilities to allow faculty members to participate in PLCs effectively.
- **Working Environment**: A supportive working environment that fosters trust among stakeholders is essential for the successful implementation of PLCs. Trust is a critical component of social capital theory, which emphasizes the importance of relational networks and trust in fostering collaborative activities (Putnam, 2000). Building a positive working environment through transparent communication and mutual respect can strengthen the effectiveness of PLCs.
- **Understanding of PLCs**: A clear and shared understanding of the concept and benefits of PLCs is necessary for their successful implementation. This finding is in line with the work of Stoll et al. (2006), who argued that a common understanding among participants about the goals and processes of PLCs is crucial for their effectiveness. Providing professional development and training on PLC concepts can address this issue.

5.4. Proposed Model and Implications

The proposed ISM model delineates the hierarchical relationships among the identified factors, highlighting the foundational role of leadership support and infrastructure, with mediating factors influencing the overall implementation process. The model serves as a strategic framework for HEIs in Pakistan to design and implement effective PLCs. By focusing on enhancing leadership support and infrastructure while addressing mediating factors, institutions can create a conducive environment for professional learning and collaboration.

Future research could empirically test the proposed model across different regions and contexts to validate its applicability. Additionally, integrating qualitative insights through interviews or case studies could provide a richer understanding of the dynamics involved in PLC implementation.

6. Conclusion

This study aimed to identify and analyze the key factors influencing the implementation of PLCs in Pakistani HEIs of Lahore district using ISM. The findings reveal that leadership support and infrastructure are pivotal for successful PLC implementation. Additionally, factors such as time constraints, equal participation, workload, working environment, trust among stakeholders, and a vague understanding of PLCs were identified as mediating variables that can either facilitate or hinder the implementation process.

To enhance the effectiveness of PLCs, it is crucial for HEIs to develop strong leadership that champions the cause of PLCs. Leadership training programs should be designed to equip leaders with the skills necessary to foster a collaborative culture and provide the required resources for PLC activities. By doing so, leaders can create an environment that encourages continuous professional development and collective learning among faculty members. Investment in infrastructure, including physical spaces and technological tools, is essential for the smooth functioning of PLCs. HEIs should ensure that faculty members have access to the necessary facilities that support regular meetings and collaborative work. This investment not only facilitates the logistical aspects of PLC activities but also enhances the overall effectiveness of the collaboration process. Time constraints emerged as a significant barrier to the implementation of PLCs. Institutions should develop strategies to manage these constraints, such as allocating dedicated time for PLC activities within the academic schedule. By prioritizing time for collaboration, HEIs can ensure that faculty members have sufficient opportunities to engage in professional learning without feeling overburdened by their regular workload. Ensuring equal participation among faculty members is also crucial for the success of PLCs. Promoting inclusive practices and encouraging all members to contribute can foster a sense of ownership and commitment within the PLC. This approach aligns with the principles of social exchange theory, which posits that equitable participation fosters trust and collaboration among members.

The working environment and trust among stakeholders play a vital role in the effectiveness of PLCs. HEIs should focus on building a positive working environment through transparent communication and mutual respect. Trust is a critical component of social capital theory, and its presence can significantly enhance the collaborative efforts within PLCs. Institutions should work towards creating a culture of trust where faculty members feel valued and supported.

A clear and shared understanding of the concept and benefits of PLCs is necessary for their successful implementation. Providing professional development and training on PLC concepts can address any misunderstandings and ensure that all faculty members are aligned with the goals and processes of the PLC. This clarity will help in achieving the desired outcomes of professional learning and development.

There are also limitations of the study that need to be acknowledged. The sample size, though adequate, is limited to faculty members from universities in Pakistan, which may affect the generalizability of the findings to other contexts. Future research should consider expanding the sample to include a more diverse range of institutions and regions.

Additionally, while this study employed a qualitative approach, integrating quantitative methods could provide a more comprehensive understanding of the factors influencing PLC implementation. Future research could also explore the specific mechanisms through which DAC and FMA drive innovation and performance. Conducting a comparative analysis with firms from different regions or industries could provide additional insights and strengthen the findings' applicability across diverse contexts. Supplementing the quantitative analysis with qualitative insights from interviews or case studies could offer a richer, more comprehensive understanding of the phenomena studied.

References

Afzal, M. (2018). Challenges and Anxieties in English Language Learning: A Study of Urdu EFL Learners in Intermediate Level Pakistan. *Journal of Policy Options*, *1*(1), 7-13.

Azhar, F., & Saboor, A. A. (2018). Exploring the Relationship Between Pronunciation Awareness and Oral Communication Enhancement Among Urdu EFL Learner. *Journal of Policy Options*, *1*(1), 1-6.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.

Blau, P. (2017). *Exchange and power in social life*. Routledge.

Bolam, R., McMahon, A., Stoll, L., Thomas, S., & Wallace, M. (2005). *Creating and sustaining effective professional learning communities*. Research report No. 637, Department for Education and Skills, General Teaching Council for England, UK.

Capers, M. (2004). Epilogue: Teaching and shared professional practice—A history of resistance; a future dependent on its embrace. In Hord, S. M. (Ed.), *Learning together, leading together: Changing schools through professional learning communities* (pp. 151–162). Teachers College Press.

Chauraya, M., Brodie, K. (2017). Learning in professional learning communities: Shifts in mathematics teachers' practices. *African Journal of Research in Mathematics, Science and Technology Education*, 21(3), 223–233.

Chua, W. C., Thien, L. M., Lim, S. Y., Tan, C. S., & Guan, T. E. (2020). Unveiling the practices and challenges of professional learning community in a Malaysian Chinese secondary school. *Sage Open*, 10(2), 2158244020925516.

DuFour, R., DuFour, R., Eaker, R., Many, T. (2006). *Learning by doing: A handbook for professional learning communities at work*. Teachers College Press.

DuFour, R., Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement*. National Educational Service.

Fullan, M. (2006). Leading Professional Learning. *The School Administrator*, 63(10), 10-14.

Hairon, S., & Tan, C. (2017). Professional learning communities in Singapore and Shanghai: Implications for teacher collaboration. *Compare: A Journal of Comparative and International Education*, *47*(1), 91-104.

Hairon, S., Dimmock, C. (2012). Singapore schools and professional learning communities: Teacher professional development and school leadership in an Asian hierarchical system. *Educational Review*, 64(4), 405–424.

Hargreaves, A. (2001). *Changing Teachers, Changing Times*. 1–290.

Hopkins, M., Spillane, J. P., & Shirrell, M. (2018). Designing educational infrastructures for improvement: Instructional coaching and professional learning communities. In Networked by design (pp. 174-195). Routledge.

Hord, S. M. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Southwest Educational Development Laboratory, Austin, TX, USA

Hord, S. M. (2004). Learning together, leading together: Changing schools through professional learning communities. Teachers College Press.

Hord, S. M. (2009). Professional learning communities. *Journal of staff development*, *30*(1), 40-43.

Iqbal, M., & Abbas, W. (2024). Determinants of Expected Service Quality: A Comparative Study in Pakistani Banking Sector. *Journal of Policy Options*, *7*(1), 27-35.

Iqbal, T., & Nasir, S. (2018). Integrating National Professional Standards with Islamic Teachings: A Path to Educational Excellence in Pakistan. *Journal of Policy Options*, *1*(4), 90-96.

Khan, A. (2018). Driving Economic Growth Through Vocational Education: Empirical Evidences from Pakistan. *Journal of Policy Options*, *1*(4), 112-119.

Khasawneh, Y., Alsarayreh, R., Ajlouni, A., Eyadat, H., Ayasrah, M., & Khasawneh, M. (2023). An examination of teacher collaboration in professional learning communities and collaborative teaching practices. *Journal of Education and e-Learning Research*. https://doi.org/10.20448/jeelr.v10i3.4841

Lee, J. C., Zhang, Z., Yin, H. (2011). A multilevel analysis of the impact of a professional learning community, faculty trust in colleagues and collective efficacy on teacher commitment to students. *Teaching and Teacher Education*, 27(5), 820–830.

Louis, K. S., Leithwood, K., Wahlstrom, K. L., & Anderson, S. E. (2010). Investigating the links to improved student learning. *The Wallace Foundation*, 2023-09.

Luyten, H., Bazo, M. (2019). Transformational leadership, professional learning communities, teaching learning and learner centered teaching practices: Evidence on their interrelations in Mozambican primary education. *Studies in Educational Evaluation*, 60(1), 14–31.

Mahmood, T., & Naz, G. (2018). Teachers' Attitudes and the Communicative Approach in EFL Classrooms: A Study in Pakistan. *Journal of Policy Options*, *1*(3), 66-73.

Mullen, C., & Schunk, D. (2010). A view of professional learning communities through three frames: Leadership, organization, and culture. *McGill Journal of Education/Revue des sciences de l'éducation de McGill*, 45(2), 185-203.

Nguyen, D., Boeren, E., Maitra, S., & Cabus, S. (2023). A review of the empirical research literature on PLCs for teachers in the Global South: evidence, implications, and directions. *Professional Development in Education*, 50, 91 - 107.

Pang, N. S.-K., Wang, T. (2016). Professional learning communities: Research and practices across six educational systems in the Asia-Pacific region. *Asia Pacific Journal of Education*, 36(2), 193–201.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.

Qiao, X., Yu, S., Zhang, L. (2018). A review of research on professional learning communities in mainland China (2006–2015). *Educational Management Administration & Leadership*, 46(5), 713–728.

Quader, M. (2024). Exploring Human Resource Management Practices and Employee Satisfaction in Bangladesh's Private Banking Sector. *Journal of Policy Options, 7*(1), 36-45.

Rasheed, L. (2020). The Role of Social Support and Work Engagement in Enhancing Job Performance among Secondary School Teachers: A Quantitative Study in Lahore District. *Journal of Policy Options, 3*(4), 124-129.

Riaz, M., & Safdar, M. (2018). Exploring Teachers' Concerns: Student Enrollment and Absenteeism in Primary Schools of Punjab Province. *Journal of Policy Options*, *1*(3), 84-89.

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.

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.

Wang, T. (2016). School leadership and professional learning community: Case study of two senior high schools in Northeast China. *Asia Pacific Journal of Education*, 36(2), 202–216.

Warfield, J.D. (1973). Assault on Complexity, Battelle Monograph Number 3; Battelle Memorial Institute: Columbus, OH, USA, pp. 13–14.

Zhang, J., Pang, N. S.-K. (2016). Exploring the characteristics of professional learning communities in China: A mixed-method study. *Asia Pacific Education Review*, 25(1), 11–21.

Zhang, J., Yuan, R., Yu, S. (2017). What impedes the development of professional learning communities in China? Perceptions from leaders and frontline teachers in three schools in Shanghai. *Educational Management Administration & Leadership*, 45(2), 219–237.

Appendix
Questionnaire

A professional learning community (PLC) is a group of educators that meets regularly, shares expertise, and works collaboratively to improve teaching skills and the academic performance of students. This questionnaire will use Interpretive Structural Modeling approach of qualitative research to find out factors important for the implementation of professional learning communities (PLCs). It will take a few minutes to complete this survey. Your responses will only be used for the research purpose and will be kept confidential. Thus, your participation means a lot to us.
Thank you for your time

1. Gender:	**Male**	**Female**

2. Age: _____

3. Teaching Experience: _____

4. University:	**Private**	**Public**

5. Email (optional): _____

6. Contextual Relationship = leads to
What to enter in the white cells?
Enter **V** when the row influences the column
Enter **A** when the column influences the row
Enter **O** when there is no relation between the row and the column
Enter **X** when row and column influence each other

	Implementation of PLCs	Leadership Support	Time Constraints	Infrastructure	Equal Participation	Workload	Working Environment	Trust among Stakeholders	Vague Understanding of
Implementation of PLCs									
Leadership Support									
Time Constraints									
Infrastructure									
Equal Participation									
Workload									
Working Environment									
Trust among Stakeholders									
Vague Understanding of PLCs									