Evaluating the Effectiveness of the Professional Learning Community (PLC) Program on Teaching Quality

Rosikin Saidun and Kamisah Osman

Abstract **– This study evaluates the effectiveness of the Professional Learning Community (PLC) program in enhancing teaching quality among primary and secondary school teachers in Putrajaya. Adopting a quantitative approach, data were collected using a structured questionnaire grounded in Tyler's Evaluation Model. A total of 260 teachers participated, selected through purposive sampling. Descriptive and inferential statistical analyses using SPSS revealed that all PLC sub-constructs achieved high mean scores (M > 4.25), while Pearson correlation analysis indicated a significant positive relationship between PLC effectiveness and teaching quality (r = 0.604, p < 0.01). These findings suggest that structured and well-supported PLC implementation can significantly enhance teacher professionalism and instructional quality. The study advocates for stronger policy support, systematic training, and a collaborative culture to optimize PLC outcomes.**

Keywords **– Professional Learning Community, teaching quality, teacher professional development, Tyler Evaluation Model, teacher collaboration**

I. INTRODUCTION

The Professional Learning Community (PLC) is a professional development approach that emphasizes collaboration, reflection, and continuous improvement in teaching practices. Within the Malaysian educational context, PLC has been introduced as a strategy to enhance teaching quality and the effectiveness of student learning. This initiative aligns with the Malaysian Education Blueprint (2013–2025), which underscores the importance of continuous professional development among educators.

According to DuFour et al. (2006), PLC serves as a structured platform for teachers to share best practices, examine learning data, and collaboratively develop teaching strategies. This approach has been proven to positively impact pedagogical effectiveness and student outcomes. In Malaysia, although PLC initiatives have been implemented widely, their overall effectiveness has yet to be comprehensively and systematically evaluated, particularly regarding their impact on teaching quality.

Teaching quality is a critical factor influencing student achievement. Teachers who employ structured, reflective, and diverse instructional strategies are better able to create effective learning environments. Therefore, it is essential to rigorously evaluate the effectiveness of PLC programs to determine the extent to which they contribute to improvements in teaching quality.

This study employs Tyler's Evaluation Model (1949) as the conceptual framework for assessing the effectiveness of PLC implementation. The model emphasizes four key components: setting objectives, selecting learning experiences, implementing the program, and evaluating outcomes. This model enables researchers to assess the overall effectiveness of PLC implementation in a structured, results-oriented manner.

Given these considerations, this study was conducted to evaluate the level of effectiveness of PLC implementation, identify the key elements that impact teaching quality, and analyse the relationship between PLC practices and teachers' instructional performance. The findings of this study are expected to serve as a foundation for improving PLC implementation and to contribute meaningfully to teacher professional development and educational policy planning.

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II. PROBLEM STATEMENT

Although the implementation of the Professional Learning Community (PLC) has been prioritized as a core component of teacher professional development in Malaysia, the question of its actual effectiveness remains open to debate. There exists a significant gap in the literature concerning the extent to which PLC genuinely contributes to measurable improvements in teaching quality (Pun & Mansor, 2021). Much of the prior research has focused on general implementation without critically analysing specific elements that may have the most substantial impact on instructional practices.

Moreover, many existing studies are based on international contexts, raising concerns about the applicability and relevance of foreign PLC models to the Malaysian education system, which features unique organizational structures, school cultures, and administrative dynamics (Kasule & Linh, 2022). Therefore, there is a pressing need to investigate PLC implementation in a context-sensitive manner, particularly among teachers in Malaysian primary and secondary schools.

Another concern is the frequent absence of structured evaluation models in assessing PLC effectiveness. In many cases, assessments are conducted without referencing a systematic framework, resulting in descriptive rather than analytical insights. This study applies Tyler's Evaluation Model, which allows for a comprehensive examination of PLC effectiveness through the lens of its objectives, learning experiences, implementation, and outcomes. Such an approach enables a more rigorous understanding of how PLC affects the quality of teaching and learning.

Furthermore, there is a lack of empirical data linking specific PLC practices to key dimensions of teaching quality, such as instructional strategy, lesson planning, and professional reflection (Idi et al., 2021). In many cases, PLC activities are conducted in a routine or procedural

manner, with limited monitoring of their actual impact on teacher development.

This study is therefore essential in addressing critical questions regarding the true effectiveness of PLC, identifying the core components that significantly influence teaching practices, and determining how PLC implementation relates to classroom instruction quality. The outcomes of this study are expected to offer empirical justification for school administrators and policymakers to design more targeted and impactful PLC improvement strategies.

III. LITERATURE REVIEW

Concept of the Professional Learning Community (PLC)

The Professional Learning Community (PLC) has emerged as a widely accepted strategy for enhancing teaching and learning quality across educational institutions. A PLC refers to a structured platform where teachers regularly meet, share experiences, and learn from one another with the common goal of improving instructional practices and student outcomes. The foundation of this concept lies in the belief that collaboration and reflection are key to effective professional development among educators (Ismail et al., 2019).

Stoll et al. (2006) describe PLCs as mechanisms through which teachers develop knowledge and skills via sustained interaction and mutual support. PLCs do not focus solely on individual improvement but also promote collective capacity-building across the teaching community. This reinforces the notion that the success of professional learning is determined not just by individual efforts but by the overall collaborative environment within a school (Ismail et al., 2019).

However, effective PLC implementation requires the presence of several essential components. DuFour et al. (2010) highlight the importance of instructional leadership, a culture of collaboration, and commitment to ongoing learning as preconditions for successful PLCs. In the absence of these elements, PLCs risk being reduced to perfunctory activities with minimal impact on instructional improvement (Purba et al., 2023; Zabidi, 2023).

Ismail et al. (2019) found that PLCs have the potential to significantly improve professional collaboration among teachers, ultimately leading to better teaching quality. Their study emphasized the role of shared experience and peer learning in helping teachers refine their practice. Similarly, Mohamed and Maat (2021) discovered that PLCs helped foster a positive learning culture in schools, encouraging teachers to adopt innovative teaching methods through peer support and reflective dialogue (Adha & Parno, 2022).

Nevertheless, PLC implementation is not without challenges. Zabidi (2023) noted that teachers often struggle with time constraints, lack of administrative support, and unclear learning goals—all of which can impede the sustainability and effectiveness of PLCs. These findings point to the importance of addressing structural and cultural barriers to optimize PLC impact.

In summary, the literature suggests that PLCs offer considerable potential for enhancing teaching quality through collaboration and reflection. However, this potential can only be realized if key structural and contextual factors are addressed and supported.

Relationship Between PLC and Teaching Quality

Teaching quality plays a fundamental role in determining student academic achievement and the effectiveness of the learning process. In this study, teaching quality is defined as the teacher's ability to implement effective instruction, assessed through dimensions such as communication, instructional strategy, and classroom management.

According to Darling-Hammond et al. (2017), high-quality instruction is marked by the use of diverse strategies, alignment with students' learning needs, and ongoing professional reflection. PLCs are considered an effective means for supporting this type of growth, especially when teachers actively engage in collaborative and reflective processes.

Ismail and Nor (2016) reported that teachers who actively participated in PLCs experienced significant improvements in pedagogical skills and clarity in instructional objectives. Furthermore, Hilda (2023) found that strong teacher–student relationships were fostered through PLCs, contributing to more positive and productive classroom environments. Similarly, Mohamed and Maat (2021) highlighted that PLC participation among mathematics teachers led to noticeable improvements in planning, delivery, and assessment practices.

While the literature affirms the link between PLC engagement and teaching quality, it also acknowledges the mediating role of effective implementation and supportive school environments (Mukafi et al., 2022; Ahmad et al., 2023).

Tyler's Evaluation Model as a Framework for Assessing PLC

Tyler's Evaluation Model, developed by Ralph W. Tyler (1949), is one of the most influential approaches in curriculum and program evaluation. The model emphasizes four key components: (i) defining educational objectives, (ii) selecting relevant learning experiences, (iii) organizing those experiences logically, and (iv) assessing whether the objectives have been achieved. The systematic nature of this model makes it especially suitable for evaluating the effectiveness of professional development programs such as PLCs (Fauzobihi et al., 2022).

When applied to PLC, Tyler's Model enables a structured analysis of how program objectives are translated into practice through collaborative learning experiences and eventually lead to measurable improvements in instructional outcomes. Rizka and Hardiansyah (2016) found that this model offers a comprehensive lens through which the strengths and weaknesses of training programs can be identified. In this study, the components of PLC—such as evaluation, planning, and implementation—will be analysed in alignment with Tyler's four stages.

Gaps in the Literature

Despite substantial international evidence on the benefits of PLCs, significant gaps remain in the Malaysian context. Many local studies are exploratory in nature and do not provide in-depth empirical analysis of how specific PLC components impact teaching quality (Pun & Mansor, 2021; Idi et al., 2021). Additionally, issues such as the long-term effects of PLCs and disparities in implementation between urban and rural schools are often overlooked.

Trisnuari (2023) emphasized that Malaysia-specific research on PLCs is still limited and often relies on frameworks developed abroad. Saad et al. (2022) noted that while some teachers have adapted well to PLCs, others face substantial implementation challenges—particularly in integrating PLC activities with online and hybrid teaching models during the COVID-19 pandemic.

In light of these limitations, this study aims to fill the research gap by applying Tyler's Model in a structured manner and empirically examining the relationship between PLC effectiveness and teaching quality in Malaysian primary and secondary school settings.

IV. METHODOLOGI

Research Design

This study employed a quantitative research design in the form of a descriptive and correlational survey (Creswell, 2012). This approach was chosen to evaluate teachers' perceptions of the effectiveness of the Professional Learning Community (PLC) program implementation and to examine the relationship between PLC effectiveness and teaching quality. In addition, inferential analysis was applied to identify differences in perception based on demographic factors such as gender and teaching experience.

Location and Sample

The study was conducted in the Federal Territory of Putrajaya, one of the administrative regions in Malaysia. A total of 260 teachers were selected as respondents through purposive sampling criteria, targeting individuals with direct participation in PLC programs. This approach ensured that the selected sample represented the population segment relevant to the study's objectives, allowing for accurate measurement and statistical analysis of the relationship between PLC effectiveness and teaching quality The sample consisted of teachers from various levels of experience and school types to ensure representativeness and diversity of perspectives (Cohen, Manion, & Morrison, 2018).

Research Instrument

The main instrument used in this study was an adapted questionnaire structured according to Tyler's Evaluation Model (1949). The items were adapted from previously validated instruments used in studies by Abdullah and Abdul Ghani (2013) and Mohamed and Maat (2021), ensuring relevance to the Malaysian education context. The adaptation process ensured contextual relevance to Malaysian schools while maintaining the conceptual integrity of the constructs The questionnaire consisted of two sections:

Section A: Collected demographic information such as gender, school type, and teaching experience.

Section B: Included 20 items related to the implementation and effectiveness of PLC and the quality of teaching. These items were grouped into four key sub-constructs:

a) Evaluation of effectiveness in relation to teaching quality
b) Changes in teaching following PLC participation
c) Planning of learning experiences within PLC
d) Implementation of PLC in schools

All items used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The reliability of the instrument was verified through a pilot test involving 50 teachers who were not part of the main sample. The resulting Cronbach's Alpha coefficient was above .80, indicating high internal consistency and reliability.

Data Collection Procedure

Data collection was conducted both online (using Google Forms). Prior to data collection, official ethical approval was obtained from the Educational Planning and Research Division (EPRD) of the Ministry of Education Malaysia (MOE), as well as administrative consent from the Putrajaya Education Department. All respondents were briefed on the study's objectives, the confidentiality of their responses, and their right to withdraw at any time without consequences.

Data Analysis Methods

The collected data were analysed using the Statistical Package for the Social Sciences (SPSS) version 29. The following statistical methods were used:

a) Descriptive statistics (mean and standard deviation) to assess the overall level of PLC effectiveness and teaching quality.
b) Independent t-test to examine differences in perceptions based on gender.
c) One-way ANOVA to assess differences in PLC effectiveness based on years of teaching experience.
d) Pearson correlation to investigate the relationship between PLC effectiveness and teaching quality.

All inferential analyses were conducted using a significance threshold of $p < 0.05$. These analyses served as the basis for answering the research questions and testing the study's hypotheses

V. FINDINGS

Respondents' Demographic Profile

The study involved 260 teachers, comprising 112 male teachers (43.1%) and 148 female teachers (56.9%). In terms of school type, 34.2% of respondents were from primary schools, while 65.8% were from secondary schools. Regarding teaching experience, the majority had

more than 11 years of experience, with 27.7% having 11–15 years, 26.2% more than 20 years, and 20.0% having 16–20 years of experience. These statistics reflect the diversity of the sample and provide essential context for interpreting the results.

TABLE I: DEMOGRAPHIC PROFILE OF STUDY RESPONDENTS

Demographic	Category	Frequency	Percentage (%)
Gender	Male	112	43.1%
	Female	148	56.9%
Type of School	Primary School	89	34.2%
	Secondary School	171	65.8%
Teaching Experience	0–5 years	19	7.3%
	6–10 years	49	18.8%
	11–15 years	72	27.7%
	16–20 years	52	20.0%
	More than 20 years	68	26.2%

Overall Effectiveness of PLC Implementation

The effectiveness of PLC implementation was assessed based on four sub-constructs. All sub-constructs recorded high mean scores (M > 4.25) according to the 5-point Likert scale used:

a) Evaluation of effectiveness on teaching quality: M = 4.39
b) Changes in teaching after participating in PLC: M = 4.52
c) Planning of learning experiences in PLC: M = 4.51
d) Implementation of PLC in schools: M = 4.25

The sub-construct "Changes in teaching after PLC" recorded the highest mean score, indicating that teachers perceived the greatest impact of PLC in improving their instructional practices. On the other hand, the "Implementation" sub-construct recorded the lowest mean among the four, with one item "sufficient time is allocated for PLC" receiving the lowest individual score (M = 3.50). This highlights time constraints as a key challenge in effective PLC execution.

Teaching Quality Level

Teachers also rated their teaching quality highly, with an overall mean score of M = 4.47. The item with the highest rating was "I deliver the lesson content in a structured manner" (M = 4.56), while the lowest was "I monitor students' understanding regularly" (M = 4.35). These findings suggest that teachers view their instructional practices positively in terms of structure, method diversity, reflection, and student engagement.

Key PLC Elements Impacting Teaching Quality

All four main PLC elements demonstrated high effectiveness and a significant impact on teaching practices. The table below summarizes the results:

TABLE II: DESCRIPTIVE STATISTICS OF MAJOR PLC ELEMENTS

PLC Element	Mean	Standard Deviation	Interpretation
Evaluation of effectiveness	4.39	0.52	High
Changes in teaching after PLC	4.52	0.50	High
Planning of learning experiences	4.51	0.49	High
Implementation of PLC in schools	4.25	0.55	High

"Changes in teaching" and "Planning" emerged as the two most dominant elements in terms of perceived impact, indicating that teachers value the collaborative outcomes of PLC in helping them plan, implement, and assess their instructional practices more effectively.

Hypothesis Testing and Inferential Analysis

Hypothesis 1: Difference in PLC Effectiveness Perception by Gender

An independent t-test revealed a significant difference between male and female teachers, with the result: $t(258) = -2.102$, $p = 0.036$. Female teachers reported higher perceptions of PLC effectiveness (M = 4.41) compared to male teachers (M = 4.28), suggesting gender-based differences in engagement or receptiveness to PLC practices.

Hypothesis 2: Difference in PLC Effectiveness Perception by Teaching Experience

A one-way ANOVA showed no statistically significant difference between groups based on teaching experience: $F(4, 255) = 1.698$, $p = 0.151$. This implies that teachers across different levels of teaching experience perceived PLC effectiveness relatively consistently.

Hypothesis 3: Relationship Between PLC Effectiveness and Teaching Quality

Pearson correlation analysis revealed a positive and significant relationship between PLC effectiveness and teaching quality: $r = 0.604$, $p < 0.01$. This indicates that better PLC implementation is associated with higher levels of teaching quality.

VI. DISCUSSION

This section discusses the key findings of the study in relation to its objectives, relevant literature, and the theoretical framework based on Tyler's Evaluation Model (1949). The discussion is structured into three main areas: the overall effectiveness of PLC implementation, the dominant elements influencing teaching quality, and the relationship between PLC effectiveness and instructional performance.

Effectiveness of PLC in Enhancing Teaching Quality

The findings revealed that the overall effectiveness of the Professional Learning Community (PLC) program was

rated highly by teachers (M = 4.41), confirming the study's first objective. Teachers acknowledged the positive impact of PLC on their professional development and teaching practices. The sub-constructs "Changes in teaching after PLC" and "Planning of learning experiences" recorded the highest mean scores, indicating that PLC plays a crucial role in fostering structured, reflective, and improved pedagogy.

These findings are consistent with those of Ahmad and Majid (2010), as well as Abdullah and Abdul Ghani (2013), who found that active engagement in PLC activities enhanced teachers' readiness to plan and deliver lessons more effectively. This aligns with Tyler's principle that the effectiveness of a program is best measured through observed changes in behaviour and outcomes consistent with the program's objectives.

Dominant PLC Elements and Their Implications for Teaching Practice

The study's second objective was to identify the most impactful elements of PLC. The results showed that "Changes in teaching practices" and "Planning of learning experiences" had the greatest influence. Teachers perceived PLC as instrumental in improving their ability to prepare lessons, apply varied strategies, and assess student learning.

This supports the view of Vescio et al. (2008), who emphasized that effective PLCs focus on teacher collaboration, data-driven planning, and student-centered learning. However, the relatively lower score for the "Implementation" sub-construct (M = 4.25), particularly the item concerning time constraints (M = 3.50), indicates that challenges remain in the operationalization of PLC.

These findings align with Brown et al. (2020) and Maashi et al. (2022), who reported that the lack of dedicated time and inconsistent administrative support were key barriers to PLC success. Therefore, school leaders must allocate sufficient time and resources and create conducive environments that enable meaningful and sustained PLC engagement.

Relationship Between PLC Effectiveness and Teaching Quality

The third objective focused on examining the relationship between PLC effectiveness and teaching quality. Pearson correlation analysis showed a significant and positive relationship ($r = 0.604$, $p < 0.01$), affirming that the more effective the PLC implementation, the higher the perceived quality of instruction.

This finding strengthens the theoretical foundation laid by Tyler's Evaluation Model, which asserts that a program's success is reflected in its ability to effect behavioural change aligned with its learning goals. It also echoes prior research by Kim and Lee (2022) and Watson (2020), who found that well-supported PLC initiatives significantly enhance instructional competency.

Moreover, the t-test results indicated a significant gender difference in PLC perception, with female teachers reporting higher scores. This may suggest that female teachers are more engaged or responsive to collaborative practices embedded in PLC. Meanwhile, the absence of significant differences based on teaching experience implies that PLC is equally relevant and beneficial across experience levels, further reinforcing its inclusive and scalable nature

VII. CONCLUSION

This study evaluated the effectiveness of the implementation of the Professional Learning Community (PLC) program on the quality of teaching, focusing on three key aspects: the overall level of effectiveness, the most impactful PLC elements, and the relationship between PLC and teaching practices. Through a quantitative approach involving 260 teachers from both primary and secondary schools, the findings consistently demonstrated that PLC implementation is at a high level and positively contributes to teacher professionalism and instructional quality.

The analysis revealed that "Changes in teaching practices" and "Planning of learning experiences" were the most influential elements in improving teaching. This highlights the transformative potential of PLC sessions in fostering structured, reflective, and effective pedagogy among teachers.

Furthermore, the study confirmed a significant and positive relationship between PLC effectiveness and teaching quality. This reinforces the premise that a well-implemented PLC program—supported by school leadership—can serve as a powerful catalyst for sustained professional development. Teachers who are actively engaged in PLC processes are more likely to demonstrate improved instructional strategies and classroom outcomes.

However, the study also revealed some implementation challenges, particularly with respect to time constraints and inconsistent administrative support across schools. To address these barriers, school leaders and policymakers must adopt a more holistic and strategic approach to strengthen PLC initiatives. This includes allocating sufficient time for collaboration, offering structured training programs, and cultivating a school culture that values collective learning and continuous improvement.

In conclusion, PLC is a relevant and effective mechanism for advancing teaching quality. When implemented systematically and tailored to the local school context, PLCs have the potential to produce more reflective, collaborative, and competent educators. The study provides a solid foundation for both school practice and educational policy by reinforcing the role of PLCs in promoting a culture of professional learning within the teaching community.

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