Journal of Language and Linguistics in Society
ISSN: 2815-0961
Vol : 03 , No.02, Feb-Mar 2023
http://journal.hmjournals.com/index.php/JLLS
DOI: https://doi.org/10.55529/jlls.32.1.8

Practice Level in the Implementation of Professional Learning Communities in Improving the Quality of Teaching among Mathematics Teachers.

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Received: 19 October 2022 **Accepted:** 30 December 2022 **Published:** 03 February 2023

Abstract: ***This concept paper was conducted with the aim of identifying the extent to which the level of implementation practice of the Professional Learning Community can improve the quality of teaching among Mathematics teachers. This study will be conducted using quantitative methods that is through data collection involving questionnaires. The dimensions in the concept of Professional Learning Community, namely the sharing of mission and vision values, leadership sharing and support, collective learning and application, sharing of individual practices and supportive environment methods are among the focus of the study. It is hoped that this study will help teachers realize that the quality of their teaching can be improved and enhanced through the Professional Learning Community and further maintain a culture of continuous learning in each educator.***

Keywords: ***Professional Learning Community, Mathematics Teachers, Teaching Quality, Learning, Sharing.***

1. INTRODUCTION

The Professional Learning Community (PLC) is one of the activities carried out by the Malaysian Ministry of Education (MoE) under Continuing Professional Development. PLC is a platform where teachers collaborate to discuss effective teaching and learning process to ensure students' outcomes (Teacher Education Department, KPM 2019). PLC under the teacher quality initiative was introduced to continuously strengthen the development of professionalism among teachers. In the Malaysian Education Development Plan (PPPM), 2013 – 2025 through the 4th shift, the Ministry of Education, MoE has emphasized the goal of ensuring that teachers remain quality throughout their service by sharing of best practices through PLC activities.

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PLC plays an important role in improving the quality of teachers to transform the quality Teaching and Learning process (KPM, 2019). Improving the quality of teachers in particular through continuous professional support can directly improve the quality of students.

Background Research

Teachers, as human capital, are a fundamental and important element in transforming the education of a country. They are contributors to cognitive skills (Shamilati, Rahimah, Wan 2015) (Nooriza, Effandi, 2015) such as problem solving, reasoning and creative and innovative thinking causing students to be able to apply knowledge and think creatively out of a context. This achievement can develop future talent (12th Malaysia Plan) which is very important in regenerating the country's economy. The PLC policy provides space for a group of teachers to share experience and expertise professionally in their respective places in improving teaching skills in an effort to improve student achievement (Amin Senin, 2018). Although this sharing is done professionally, this process can be done formally, for example during a workshop or training session or informally, for example when the teacher is in the staff room or in the canteen. Cultivating this practice can identify real problems that occur in schools and during the teaching and learning process, which later then produce solution methods according to real needs and suitability.

Under Standard 4 in SKPM 2010, the focus of learning and teaching is more directed towards the teacher's role in producing and providing a high quality learning and teaching process. The quality of a teacher is said to determine the success of a student. According to a study done by Nur Farhah and Fatimah (2018), what a student learns or gets in school does not depend on the school that they attend but on the teacher who is in the school. Teachers play various roles in the classroom, as facilitators, referents, assessors, educators and also act as facilitators (Eggen & Kauchak 2012). Teachers are individuals who are capable of creating something different in the individual personality of a student. The six aspirations of students that need to be formed and produced are knowledgeable, skilled at thinking, skilled at leading, have high spiritual ethics and have a national identity which will be achieved when teachers are able to carry the challenges and aspirations outlined by the ministry (Normiati & Abdul Said, 2019).

According to Sudarman & Mulawarman (2018), the determination of a teacher whether he is successful or not can be seen from the extent to which the teacher understands and deepens the expertise on the field of expertise that will be taught, appreciates how that knowledge is made and can organize and connect with other knowledge, and thus applying it in real life. A teacher is considered as an individual who always needs to practice continuous learning. PLC practices create learning opportunities (Chauraya, Brodie, 2018), where sharing of knowledge and skills are done, focusing on students' learning and involvement in collaborative culture (Yee, 2019) can be done by teachers.

This PLC sharing session, in turn, can build positive thinking in the process of exchanging ideas, combining new knowledge, giving more motivation and cooperation between teachers and students, which when developed which can improve the quality of teacher teaching and student achievement holistically in line with the goals of PPPM 2013 - 2025.

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Developments and changes in the world of education that are constantly happening due to policy changes, technological developments and so on, causes the need for a teacher to constantly improve his knowledge in general and the quality of teaching in particular to uphold the teachers professionalism. Teachers who work individually will face difficulties in achieving this goal (Dima Mazlina, 2016). Therefore, teachers need continuous professional support that can be met with the implementation of PLC. PLC is an activity that emphasizes collaboration in team cooperation that can have a great impact in improving the skills and subsequently the quality of a teacher's teaching. The concept of learning through PLC was formed from the ideas of Senge (1990) that asserts that learning organizations are important to increase cooperation and changes for an organization. The main pioneer of PLC in the field of education, Hord (1997) modified Serge's idea and built five dimensions in the implementation of PLC. The five dimensions are shared mission and vision values; sharing and leadership support; collective learning and application; individual practice sharing; and supportive environmental conditions. These five dimensions have been incorporated in the context of education in Malaysia by the MoE.

It is an ongoing process in which educators work collaboratively to undertake repeated cycles of collective inquiry and action research to achieve better outcomes for their clients which are the students. PLC operates under the assumption that to improve the learning process for students, learning by educators, especially teachers needs to be continuous (DuFours, Eaker, Many & Mattos, 2016).
A report in the KPM training management system shows that 69.9% of teachers practice PLC in schools (KPM, 2019). According to the report, this shows a positive development in showing the involvement of collaborative practices among teachers. However, the report is an overall report for the implementation of the PLC. It shows the percentage of PLCs that are implemented based on the PLC recommended by the government. This report does not show the extent to which the implementation of this PLC can improve the teaching quality of the teachers involved.
Various programs were introduced by the government to empower education in Malaysia. Among them is the Primary School Literacy and Numeracy Program, PLaN (KPM 2020). Apart from focusing on establishing the baseline of level 1 student mastery in Malay, English and Mathematics based on Classroom Interpretation, PLaN also focuses on improving teachers' skills in focused and differentiated teaching and learning. From the 6 intervention steps in PLaN, one intervention step is the implementation of PLC which focuses on teaching planning. So the implementation of this program and also other programs will only be successful if there is a collaborative sharing practice that can change the culture of teachers in teaching and learning. This collaborative practice needs to happen continuously to improve the professionalism of teachers throughout their service. Directly PLC can support and produce a variety of important new understanding that a teacher should practice (Chauraya, Brodie, 2018)

Sharing Mission Values and Vision
Among the main keys that determine the success of PLC in schools is the sharing of mission and vision to maintain a culture of learning among the ranks of administrators, teachers and students (Hord, 1997). Apart from student learning, the mission and vision of a school is used

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as a benchmark in evaluating the quality of teacher teaching and the effectiveness of student learning.
The sharing of this mission and vision function will unite each individual in the school organization (Sergiovanni & Green, 2015). Parents and the surrounding community are also part of those who are involved in realizing the value of the mission and vision involved in improving the school.

Leadership sharing and support
According to Hord (1997), leadership is a very important dimension factor. There are 6 advantages if this PLC is led by a skilled and capable leader. The first advantage, the leader facilitates the interaction between PLC members; secondly, teachers will tend to support each PLC activity if the leader is actively involved; third, the vision of the school becomes the basis for all actions; fourth, it enhances development for professional practice; fifth, strengthening the PLC if there are difficulties or challenges in practicing it; and sixth, the leader describes the entire PLC in an organization

Collective learning and application
Collective learning helps teachers to improve their expertise in the subjects taught, increases knowledge and also improves skills and good practice. This ensures that the quality of student achievement and subsequently the school is improved.

Individual practice sharing
Teachers in schools should always work together and learn together with colleagues by evaluating the best practices that are being practiced. Based on Musimartin (2014), through sharing practices, teachers voluntary and are open in accepting advice that reflects their own and others' teaching and learning practices. Teachers can reflect by observing the teaching and learning process of other teachers and are able to bring the findings from the observation into the group discussion. This creates a collaborative work culture and support for each other (Buttram & Farley-Ripple, 2016). Through this approach, teachers can identify strengths and weaknesses that will at the same time be corrected or improved through feedback from colleagues.

A supportive environment
Environmental support is defined as interpersonal (human) relationships with physical resources (structural). These two features ensure that PLC can be practiced continuously in schools and not just at a selected time. Interpersonal relationships have 6 characteristics while physical resources consist of 3 main characteristics (Roslizam, Jamilah & Yusuf, 2018)

Teaching Quality
According to Dewan Bahasa & Pustaka (5th Edition) quality is defined as a level of goodness or the value of a high achievement referring to self-excellence. However, according to what is outlined by the MoE through the Malaysian Education Quality Standard (SKPM, 2010), a teacher is said to have quality and effective teaching if he has mastery in terms of teaching planning, teaching implementation, classroom management and has a personality as a teacher.

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From the discussion above, it can be concluded that the implementation of Professional Learning Community, PLC plays a role in improving the quality of teaching among Mathematics teachers. The conceptual framework below summarizes the influence of PLC on the quality of teacher teaching.

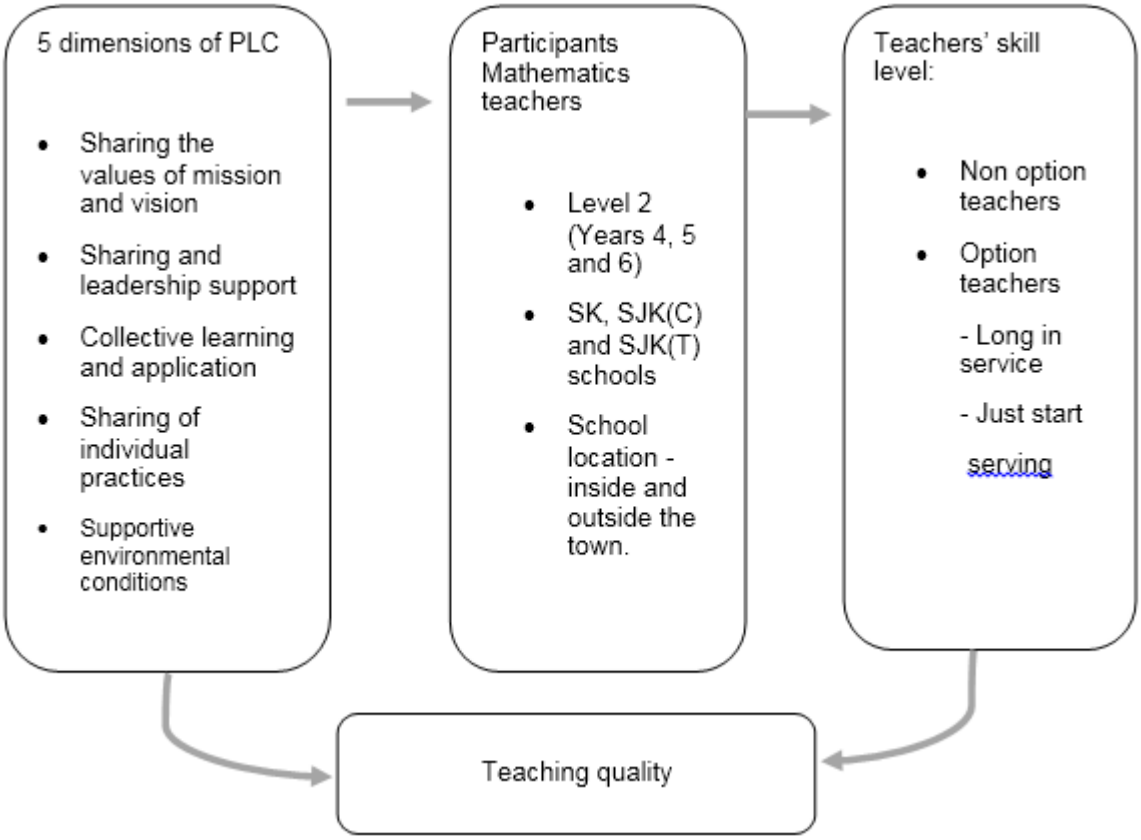


Figure 1: Conceptual Framework of the Study

Purpose of the Study

This study aims to review the PLC practices carried out by mathematics teachers, especially the strategies and elements used and then measure the level of improvement in the quality of teaching among mathematics teachers through the implementation of PLC practices. This study will focus on how PLC practice is able to create a more conducive learning environment in line with the changes that occur in the field of education as a result of the demands and challenges of globalization and the development of information and communication technology.

In addition, this study also aims to review how PLC practices carried out by mathematics teachers, especially in building strategies and building elements, can improve the quality of a teacher's teaching during the teaching and learning process. Next, this study can prove how a learning value done in a collaborative process is a lifelong learning process among mathematics teachers in improving the effectiveness of the learning process. In line with the

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Ministry of Education's and Culture's agenda, teachers must continuously complete and be equipped with the characteristics of professional educators of the 21st century.
The findings of this study will help Mathematics teachers to form and maintain PLC in building the individual development of teachers through learning and collective capacity among mathematics teachers. This study can show that increasing the level of PLC implementation practices will directly improve the ability of a teacher in presenting the teaching and learning process sessions, which in turn has an impact on the quality of teaching.

2. DISCUSSION

This study will use quantitative technique where data collection will be done through questionnaires. The selection of participants for this study focused after studying the background and environment of the participants. The following are the criteria that need to be considered for the selection of participants for this study:
(a) Study is conducted voluntarily, without any coercion or compulsion.
(b) The participants consisted of Mathematics teachers from various grades and had more than 3 years of teaching experience and were involved in the teaching and learning process of level 2 students, i.e. Standard 4, 5 and 6.
(c) Study participants consisted of national and national type of primary school teachers, with urban and rural school categories.
Participants do not need to disclose personal information so that the data collected is not biased. The selection of research participants is very important in producing quality data taking into account the reliability and validity of the data.
The findings of this study are important in reinforcing the importance of continuous learning. This PLC is able to guide:
(a) teachers who are non option to know and understand more deeply about the teaching and learning process such as syllabus content, teaching methods and student assessment methods.
(b) option teachers who have been serving in the school for a long time to understand the new concepts introduced and modern delivery methods, for example the use of ICT.
(c) newly recruited option teachers to better understand their environment including how to deal with problems that arise during teaching and learning process.
Overall, each teacher has different knowledge and skills and this sharing and learning practices of teachers through this PLC can help develop personal potential and further improve the professionalism and quality of a teacher.

Proposal

This study was conducted to get an idea of how the quality of teachers' teaching can be achieved through PLC activities. This study shows how the 5 main dimensions are implemented in the PLC process, namely the sharing of mission and vision values; sharing and leadership recommendations; collective learning and application; individual practice sharing; and supportive environmental conditions, help teachers to influence the quality of teaching in the classroom.
Furthermore, this study can further strengthen existing theories and models that have continuity in proving the importance of research in the implementation of PLC on the teaching quality of Mathematics teachers.

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In general, this study can provide implications to existing studies. Also, the findings from the study can be a basis for future researchers in studying the factors that can affect the teaching quality of a Mathematics teacher more specifically.

Closing

The existence of PLC culture among teachers, in general and Mathematics teachers in particular, will be able to develop a teacher's internal capacity in an effort to encourage these teachers to become experts in their respective subject areas.

The Mathematics teachers' community needs to work as a team and constantly improve to bring out the talents of their students. The sharing of practices and expertise from different generations of communities complement each other's existing strategies and methods that are practiced among educators. PLC practice must be cultivated continuously to develop positive values among teachers. The increase in teaching professionalism must be in line with the increase in the quality of teaching among mathematics teachers.

PLC is a best practice that can unite cooperation among a group of teachers to improve the quality of oneself as an educator. The success of a PLC is highly dependent on the support of various parties, especially school leaders and other colleagues. Without their support, PLC will meet failure.

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