

Causal Relationship Among Professional Learning Communities and Teaching Self-Efficacy: A Study Among Teaching Staff in Betong, Sarawak

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Abstract

The Professional Learning Community (PLC) serves as a platform where teaching staff collaboratively create learning opportunities to enhance the overall teaching and learning process in classrooms. In the developing world, educators play a crucial role in driving development through education, making PLCs particularly relevant. By participating in PLCs, teachers can boost their self-esteem, gain insights into effective teaching methods, and acquire valuable knowledge to improve student performance. Additionally, this program fosters a cooperative culture among teachers and supports continuous lifelong learning. PLC's benefits have garnered international recognition, including in Malaysia. To delve into the perceptions of teachers in rural primary schools in Betong, Sarawak, regarding the implementation of PLC, this study was conducted. Furthermore, the research aimed to assess the level of teacher self-efficacy and explore the potential relationship between the implementation of PLC and teacher self-efficacy. Employing quantitative methods, the study collected responses from 150 rural primary school teachers based on five selected national primary schools, using a well-structured questionnaire to gather data. The study's findings indicate that a significant number of teaching staff possess knowledge about the implementation of PLC and express optimism about the way it is conducted in their respective schools. Teachers are reported to be highly effective in managing classrooms, engaging students during the teaching and learning process, and employing quality teaching strategies. Moreover, the study reveals a noteworthy relationship between various dimensions of PLC and teacher self-efficacy. The implications of these findings are both theoretical and practical. For instance, it underscores the importance of fostering PLCs in schools to empower teachers, improve their confidence in their abilities, and promote a conducive learning environment. By nurturing a culture of collaborative learning and professional development, educational institutions can elevate teaching standards, ultimately leading to enhanced student outcomes. The study's insights can guide policymakers and school administrators in designing and implementing effective PLC initiatives, ensuring they have a positive impact on both teachers and students.

Keywords

professional learning communities; teaching self-efficacy; teaching



I. Introduction

As the world progresses towards a promising future, Malaysia is making every effort to keep pace with the rapidly evolving technological landscape. It is evident that education plays a crucial role in shaping future generations to be adequately equipped for the dynamic challenges and global competition. In the present educational system, the Malaysian Educational Blueprint (2013-2025) emphasizes the importance of instilling 21st-century skills in young learners. The aim is to develop students holistically, ensuring they are well-prepared to face the uncertainties that lie ahead. The education system now emphasizes equipping pupils with a comprehensive skill set that goes beyond traditional knowledge. This includes nurturing their abilities to think critically and creatively, fostering leadership qualities, and enabling them to communicate effectively on an international scale. However, amidst this focus on modern skills, the blueprint also recognizes the significance of preserving moral values, ethics, and cultural identity. These values remain at the core of their upbringing, helping them to become better versions of themselves as proud Malaysians.

Teachers play a vital role in achieving the objectives of educational reform. However, modern-day teachers encounter greater challenges compared to their predecessors due to the rapid advancement of technology. This transformation has significantly impacted the education system, necessitating teachers to put in extra effort to make teaching and learning more engaging and effective.

One of the major challenges faced by teachers is the difficulty in adapting to teaching Mathematics and Science in English. Learning the English language is no longer an alien concept among Malaysians; it has become essential to master English as it now serves as the language of science, greatly influencing the nation's development. Proficiency in English opens up numerous opportunities for young generations to pursue further studies and careers abroad. The Malaysia Education Blueprint (2013-2025) explicitly underscores the importance of English language proficiency, and the Ministry of Education (MOE) has taken steps to prioritize it.

The first wave of education transformation saw the MOE focusing on evaluating teachers' proficiency levels in English and implementing the LINUS program to address literacy challenges among pupils. In the second wave, the emphasis shifted towards strengthening the English language through multiple exposures. One of the initiatives taken by the MOE in Sarawak was the adoption of the Malay language as English medium of instruction for Science and Mathematics subjects in all primary national schools. This move aimed to provide pupils with increased exposure to the English language within the classroom setting.

However, this change has posed a challenge for some teachers, especially those who previously taught in the Malay language, and may not be proficient in English. Adapting to the new norm requires them to create new teaching and learning materials in English and deliver instructions in the language, which can be overwhelming and add pressure to their workload. Consequently, some teachers may experience a lack of motivation to teach due to these additional demands.

A professional learning community (PLC) can alleviate the challenges faced by teachers and enhance their confidence in teaching. Salmi (2021) suggests that PLC, through methods like teacher coaching, encourages teachers to openly share their teaching experiences and skills with one another. For example, English teachers can provide valuable suggestions and guidance to improve their colleagues' English proficiency. This

collaborative environment facilitates the improvement of teaching performance and helps teachers gain confidence in using English as the medium of instruction.

The education sector has been heavily impacted by the pandemic, particularly in rural schools. The years 2020 and 2021 have been particularly challenging for teachers, students, and parents, as traditional classroom settings have been disrupted. The need for social distancing has compelled schools to resort to technology for remote teaching and learning. Virtual learning has become the norm, with students and teachers interacting online from their respective homes during lockdowns.

Urban schools have generally adapted more smoothly to technology-enabled learning, unlike their rural counterparts. In rural areas, schools face significant difficulties due to inadequate facilities and poor internet connections (Teach for Malaysia, 2020). Moreover, some teachers lack technological expertise, hindering their ability to effectively engage in online teaching with their students (Wong, 2021). While the Ministry of Education sponsors various virtual learning platforms like Google Classroom, many teachers receive insufficient guidance on how to use them optimally. As a result, teachers must take the initiative to self-learn and explore these platforms to deliver more effective and interactive lessons in an online setting.

Addressing these challenges and creating a supportive professional learning community can provide valuable support to teachers, especially in rural areas, ensuring they are equipped with the necessary technological skills to navigate online teaching successfully.

In the absence of a mandate to deliver online lessons, most teachers choose to adopt offline modes for teaching. However, this method is considered the least effective, as it involves merely providing physical worksheets or modules to students without further guidance. Pupils who lack prior knowledge of the subjects and proper support at home encounter difficulties in completing assigned tasks, leading to unsatisfactory submission rates and quality of work. Moreover, some students face challenges due to a lack of access to gadgets with good internet connections, resulting from unavoidable circumstances. According to a survey by the Ministry of Education (MOE, 2019), 37% of 900,000 students in the country do not have access to technological devices for virtual learning. Additionally, primary school pupils are not well-versed in digital applications, further hindering their ability to attend online classes without adequate parental guidance and supervision at home (Hawati & Jarud Romadan, 2020). Consequently, learning inequalities arise, and the current situation exacerbates the gap between urban and rural pupils, as those with access to technology can keep up with their studies while others are less fortunate.

To address and resolve these issues, a virtual professional learning community (PLC) can be an effective approach. Mehnaz, Waseem, and Mohd Suhail (2012) and Zheng, Yin, and Liu (2020) suggest that conducting PLCs virtually can meet the needs of teachers' professional enrichment and problem-solving. This approach allows for flexible participation anywhere, anytime, with minimal requirements. For instance, teachers can use video conferences to engage in PLC discussions, seeking the best strategies to encourage students' participation in virtual classes and improve assignment submissions during the pandemic. Additionally, teachers can utilize the same platform to share expertise and educate their colleagues on effectively using virtual learning tools to enhance teaching and make learning more engaging and meaningful for students. Overall, technology's advancements empower teachers to improve professionally without constraints, enabling them to address students' doubts and conduct lessons effectively despite physical distance.

PLC is capable to assure teachers as it encourages teachers to share, exchange teaching experiences, and skills, and solve teaching-related problems through various methods. Therefore, the researcher believes that teachers' self-efficacy in teaching can be impacted positively if PLC is implemented effectively and consistently. The findings of this study would serve as a piece of supporting evidence as to how important the implementation of the professional learning community is to ensure better teaching and learning performance in schools. In addition, it is a reminder to all school stakeholders that PLC should not be taken lightly as the success of running this platform could benefit tremendously teachers' and pupils' school achievement. The findings of this study will indirectly contribute to body knowledge where the combination of PLC and teaching self-efficacy (TSE), especially in the context of primary school education is expected to give new life to the world of education.

Research objective

The objective of this study is to examine the impact of Teacher Self-Efficacy (TSE) on their perceptions of the implementation of Professional Learning Communities (PLC) in national schools within the Betong district. More precisely, the research seeks to explore the notable influence of PLC on TSE in the Malaysian educational setting.

II. Review of Literatures

2.1 The Relationship between Professional Learning Communities and Teaching Self-Efficacy

A Professional Learning Community (PLC) is a collaborative platform where groups of teaching professionals come together to share knowledge and experiences, aiming to enhance both teaching and learning performance (Kamarudin, Rosnah, & Siti Hajar, 2020). Implementing PLC in an educational organization is highly beneficial, as it fosters consistent and healthy practices among professionals (DuFour & Reeves, 2016). Through PLC, teachers can exchange ideas and improve themselves indirectly. The skills and knowledge gained during these sharing and discussion sessions can be applied in the classroom to create more engaging, effective, and productive teaching and learning experiences.

Teacher self-efficacy refers to the confidence a teacher has in their ability to educate and motivate students, irrespective of their abilities and backgrounds. Aziah, Loh, and Abdul Ghani (2015) describe teacher self-efficacy as a teacher's initiative to positively influence student behavior through effective teaching. Several factors, including behavior, environment, and personal cognitive, affective, and biological development, can influence a teacher's self-efficacy in teaching (Aziah et al., 2015). Additionally, teacher self-efficacy is associated with various important aspects such as lifelong learning, self-motivation, work performance, job satisfaction, and student learning performance (Ling, 2018).

Numerous local and international studies have demonstrated a positive relationship between PLC and TSE. For example, Aziah et al. (2015) found significant evidence supporting the connection between PLC implementation and teacher self-efficacy. Stegall's research study (2011) concluded that efficacy in instructional strategies and student engagement had a more substantial impact on the implementation of PLC compared to efficacy in classroom management. Similarly, Voelkel and Chrispeels' research study (2017) suggested that effective and result-oriented PLC could enhance teachers' collective self-efficacy. Based on Prince's literature review (2018), teachers' self-efficacy can have a

profound impact when given collaborative learning opportunities, especially through programs like PLC.

Moreover, a positive relationship is shown between critical reflection in PLC and TSE (Babaei & Abednia, 2016; Zheng et al., 2020). The research findings reviewed have confirmed that there is a significant relationship between these two variables. Therefore, teacher self-efficacy should be taken seriously and be the focal point as far as teacher-related development program is concerned as they are correlated to each other (Stegall, 2011). Teachers' beliefs and confidence in their teaching competency can be boosted when teachers' knowledge, skills and experience are elaborated and extended through the correct medium, especially in PLC (Calik, 2013).

The relationship between the two variables lacks strong evidence. For example, research conducted by Romeo (2010) yielded results like Aziah's, suggesting that the implementation of the professional learning community has minimal impact on teacher self-efficacy. In Taylor's study (2021), although data supported a positive relationship between PLC and TSE, the researcher remained uncertain whether PLC entirely influences teachers' self-efficacy, considering other potential factors that might influence self-efficacy changes among teachers.

The correlation between the implementation of PLC and teachers' self-efficacy is not consistently robust. Zheng et al.'s research (2020) revealed that only the reflective dialogue element in PLC had a positive influence on teachers' self-efficacy. However, other PLC elements, such as shared purpose, collective focus on student learning, and de-privatized practice, showed no significant relationship to changes in teachers' self-efficacy. Sweigart (2012) shared a similar perspective on the connection between these variables, with her study indicating an insignificant difference between them, despite slightly higher self-efficacy ratings among teachers who participated in PLC. Additionally, research cited in Sweigart (2012) suggested that teachers with higher knowledge tended to be more modest in rating their self-efficacy, potentially indicating that the implementation of PLC and teachers' self-efficacy might not be strongly correlated.

Some studies, like Zheng et al. (2020), found that teachers' self-efficacy was negatively impacted by the implementation of collaborative activities in school. Teachers perceived these activities under PLC as time-consuming and energy-draining, preferring to use their time more effectively in the classroom for teaching and learning. The collaborative activities were seen as additional tasks imposed on teachers who already had overwhelming responsibilities (Chen, as cited in Zheng et al., 2020).

This study aims to explore this matter further and provide definitive answers. As school cultures and settings may vary, the research findings could differ from previous studies. The investigation will contribute to determining whether the results align or diverge from existing research.

III. Research Method

This study follows a quantitative research approach, chosen for its ability to examine the relationship between variables and draw conclusions based on objective theories (Creswell, 2017). Quantitative research is characterized as a top-down process, employing precise statistical data collection and measurement to support the breadth of the research focus (Leavy, 2017). Moreover, quantitative research design is known for its unbiased and authentic approach (Creswell, 2017).

A sample refers to a selected group of individuals, objects, or items from a larger population for data analysis (Pooja, 2019). In this research study, the samples consist of teachers from five selected national primary schools located in Betong, Sarawak. The process of sampling involves selecting a subset from a larger population to fulfill the research purpose (Pooja, 2019). In this study, a combination of purposive sampling and random sampling techniques is employed. Participants are chosen based on their relevance to the research objective; specifically, only teachers are included as respondents for the questionnaire, while school headmasters are not part of this study, as the focus is on the teachers' perspectives. The random sampling method ensures that the quality of the teachers, including years of teaching experience, subjects taught, and qualifications, is not affected, and all eligible teachers from the selected schools are included.

The population in this context refers to all the units in a group to which the research findings can be applied. For this study, the emphasis is on teachers' perspectives on the implementation of PLC and TSE in national primary schools in Betong, hence the population consists of teachers currently teaching in such schools in that region. Out of the 25 national schools in Betong, five have been identified for this research, with an estimated 30 teachers in each school. The number of respondents required for the study was determined using the formula suggested by Krejcie and Morgan (1970), resulting in a minimum sample size of 108 respondents out of the total 150 teachers from the five selected schools to represent the population.

This research study utilizes a quantitative method such that the data is collected through a questionnaire. The questionnaire consists of three parts - Respondent Profile which contains two items to collect demographic information such as gender and duration of service in the year; Part A, which is the second part of the questionnaire that was related to five dimensions of Professional Learning Community which is adapted from Hord (1996); Part B, which is the third part of the questionnaire that was related to the Teachers' self-efficacy (TSE) from Tschannen-Moran and Hoy (2001). The questionnaire was distributed to the targeted participants through Google Forms. All the data were collected and analysed by using Statistical Packages for Social Sciences (SPSS).

The pilot test can be defined as a rehearsal of the data collection tool (Leavy, 2017). In the pilot study, 30 teachers volunteered to answer the questionnaire. Data were collected afterwards to analyse the validity and reliability of the test item. The following subcategories that indicate the instrument and variables in this study are very reliable. Shared vision, mission, values, and goals ($\alpha=.937$); leadership sharing and supportive leadership ($\alpha=.858$); collective learning and learning application ($\alpha=.952$); personal practice sharing ($\alpha=.836$); organization support ($\alpha=.928$); efficacy of classroom management ($\alpha=.970$); efficacy of teaching strategy ($\alpha=.929$); efficacy of pupils' engagement ($\alpha=.892$). It shows that the scores for all items in the questionnaire are more than .80. Therefore, the items constructed are very reliable.

Table 1. Research findings from Enter method

Hypothesis	Regression Weights	Beta Coefficient	R ²	F	p-value	Hypotheses Supported
There is a significant influence of PLC on TSE in the Malaysian context.	PLC→TSE	.385 322	.348	78.825	.000	Yes

Finding and Analysis

The analysis found that 85 (56.7%) respondents were female teachers while 65 (43.3%) respondents were male teachers. In conclusion, most respondents from the five selected schools are female teachers. Next, the data shows that teachers with more than 18 years of teaching experience in Betong have the highest frequency. 70 out of 150 respondents (46.7%) are teachers with more than 18 years of teaching experience. The second highest, representing 31 out of 150 respondents (20.7%) are teachers with 9 to 18 years of teaching experience. Next are teachers who have teaching experience for 6 to 8 years, which is 29 out of 150 respondents (19.3) in this study. Teachers with less than 6 years of teaching experience had the lowest total frequency. In conclusion, respondents from all selected schools in Betong have more veteran teachers than novice teachers.

The hypothesis test if the professional learning community carries a significant impact on teaching self-efficacy in the Malaysian context. The dependent variable TSE was regressed on predicting variable PLC to test the hypothesis.

PLC significantly predicted TSE, $F(1, 148) = 78.825, p < .001$, which indicates that the PLC can play a significant role in shaping TSE ($b = .385, p < .001$). These results direct the positive effect of the TSE. Moreover, the $R^2 = .348$ depicts that the model explains 34.8 percent of the variance in TSE. Table 1 shows the summary of the findings.

This result is in line with the findings of studies by Aziah et al. (2015), Voelkel and Chrispeels (2017), Prince (2018), Babaei and Abednia, (2016), Zheng et al. (2020), Calik (2013) and Stegall (2011) where both PLC and TSE variables among teachers have a significant relationship. The findings of this study conclude that the effectiveness of the PLC implementation would bring a positive impact on the level of self-efficacy among teachers.

IV. Result and Discussion

4.1 Implications, Direction for Future Research and Conclusion

Students' achievement has always been the main goal for policymakers. Therefore, teachers' self-efficacy and the implementation of PLC would be the centre of attention as they contribute to the development of students' performances in school. Policy requirements for professional development could be changed for the better when the relationship between the implementation of PLC and teachers' self-efficacy is well established. Consequently, resources would also be allocated based on the requirements made by the policymakers to sustain the quality implementation of the PLC. According to Suseela (2012), formative school-based evaluation for primary school teachers is currently practised in Malaysian national primary schools. Teachers' instructional practices are evaluated through formative evaluation.

This evaluation emphasizes continuous professional development among teachers. In addition, teachers are encouraged to be lifelong learners and continuously improve their teaching competency. PLC would play an important part in this field to realize the mission. This study, however, is limited to 5 selected rural schools in the Betong district. The results obtained do not represent other primary schools in the same and other districts. Therefore, more references regarding this matter should be considered while changing the policies. A broader population should be considered in future research studies to collect more evidence.

School leaders can use the analysis results to keep track of teachers' performances and their perceptions of the implementation of PLC. School leaders can use these analyzed results to improvise the way of implementing PLC in school. In addition, the data collected also provides information regarding teachers' perceptions and opinions towards the

implementation of PLC in schools indirectly. Through this, the school leader can think of other ways to improve the quality while conducting PLC which at the same time increases the level of self-efficacy among teachers. District leaders, on the other hand, can think of more effective ideas to encourage school leaders and teachers when comes to implementing PLC in schools. With the data collected, they could also reflect on their previous methods used in professional development.

Based on the data collected from this study, self-efficacy among female teachers is lower than among male teachers. Therefore, school and district leaders could consider rethinking and reconstructing better strategies to conduct PLC effectively. Furthermore, they should listen to the voices of the teachers and have a mutual agreement on how to conduct PLC effectively so that everyone is well-prepared for what is expected from them. Teachers might be more cooperative and think positively about professional development through this.

4.2 Direction for future research

Some areas can be improved for future research. The sample size can be set broader. For instance, instead of selecting only 5 schools from the district, the researcher can include other primary schools which are located in the same district to collect wholesome data that truly represents the district. Through this, the validity and reliability rate would increase and it deepens the understanding of the connection between the dimension of PLC implementation and teachers' self-efficacy. Similar research should be conducted all across rural schools in Sarawak to provide a better understanding of the relationship between PLC and teachers' self-efficacy. This study should be conducted in secondary schools and colleges (Stegall, 2011). This is because different schools practise different cultures in terms of administration, implementation, resource sharing and teaching strategies. The additional data collected from these schools would generate new knowledge for the study.

The way of approaching participants can be improved. Instead of sending questionnaires online, the researcher can use the offline method to approach the participants. Throughout this research, it is noticeable that most of the participants would prefer sincerity over convenience. For example, respondents tend to delay or refuse to respond to the questionnaire even though it has been approved by the Education District Office. Therefore, researchers should switch to the traditional method to collect data. By handing out physical questionnaires and supervising throughout the process, the researcher should be able to collect sufficient data effectively.

This study has provided numeric data that represents the overall result for each dimension of the implementation of PLC and teachers' perception of their self-efficacy. However, this does not explain explicitly how respective schools achieve the level of PLC, how teachers evaluate their level of self-efficacy and how each dimension of the PLC contributes to the degree of self-efficacy among teachers. This study should be continued with the support of qualitative data so that it clarifies the correlation between the implementation of PLC and teachers' self-efficacy. More evidence can be collected as additional information to support the effectiveness of the implementation of PLC. For instance, students' records on learning performance such as results for summative assessment, band for school-based learning and worksheet assessments can be recorded annually to track students' learning progress with the help of PLC.

In addition, this research should include school leaders as participants. This is because the effectiveness of the program is highly dependent on the leadership and management of the administration (Stegall, 2011). Therefore, it is crucial to collect data regarding school leaders' perceptions of the implementation of PLC and their level of self-

efficacy. Furthermore, the relationship between the implementation of PLC and the level of self-efficacy among school leaders should be specified. For instance, specific leadership styles or traits that bring a huge influence on the dimension of PLC should be identified (Gilliam, 2020). The result of the data would impart a more holistic insight as both school leaders and teachers play important roles in the implementation of PLC

V. Conclusion

Some of the findings from this study correspond to the literature reviewed. Every school has their strategies to enhance students' achievement. PLC is one of the strategies that has been proven effective in improving teachers' instructional practices and students' performances (Hord & Sommers, 2008; Aziah et al., 2015; Chua, Thien, Lim, Tan, & Guan, 2020). Likewise, a high level of teachers' self-efficacy has also been proven to have contributed to the student's success in learning (Barni, Danioni, & Benevene, 2019; Alibakhshi, Nikdel, & Labbafi, 2020). The influence of the implementation of PLC on teachers' self-efficacy appears to be significant in this study. This shows that these two variables are interrelated to each other. A quality and consistent implementation of PLC could contribute to an increased level of self-efficacy among teachers. Consequently, students' performance can be enhanced as teachers are becoming more competent in educating the students in school

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