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THE RELATIONSHIP BETWEEN PROFESSIONAL LEARNING COMMUNITY (PLC) AND TEACHERS' SELF-EFFICACY IN SECONDARY CLUSTER SCHOOLS OF EXCELLENCE IN KOTA SETAR DISTRICT

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Abstract

This study examines the relationship and influence between Professional Learning Community (PLC) practices and teachers' self-efficacy. The study population consists of 320 teachers from four selected cluster schools, with a sample size of 175 teachers selected randomly. The research adopts a descriptive, correlation, and regression design. Data were collected via questionnaires and open-ended questions. Quantitative data were analyzed using SPSS version 22, while open-ended questions were analyzed thematically. The PLC measurement was guided by Hord (1997) and adapted from the School Professional Staff as Learning Community Questionnaire-Revised (PLCA-R) by Olivier & Hipp (2010). Teacher self-efficacy was assessed using the Teacher's Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001). Findings reveal a significant and positive relationship between PLC practices and teachers' self-efficacy levels. PLC dimensions significantly impact improving teachers' self-efficacy.

Keywords: *Professional Learning Community, Teachers' Self-Efficacy, PLC Dimensions*

Introduction

The 21st-century education era often focuses on student-centered learning, where teachers act as facilitators to assist students in their learning activities and processes (Katie, 2016). According to Victor (2018), educational reforms in the 21st century are occurring rapidly, necessitating a shift in mindset for all involved in the education sector. This shift involves enhancing and updating their knowledge and professional skills (Coryn, 2018).

In this endeavor, a concept known as the Professional Learning Community (PLC) has been introduced and expanded across schools nationwide in Malaysia. The PLC was introduced in the Malaysian Education Blueprint (MEB) 2013-2025 in 2012 to transform the country's education system (KPM, 2012). According to Yee Boo Chee (2019), PLC fosters changes within teachers, enabling improvements in teacher quality, enhanced student achievement, and promoting positive development within schools.

The PLC initiative, introduced by the Ministry of Education, aims to produce a balanced generation of human capital and position Malaysia as an educational hub in the region (Aziah Ismail, Loh Hooi Yen & Abdul Ghani, 2015). Furthermore, as highlighted by Siti Nafsiah Ismail, Zuraidah Abdullah, and Abdul Jalil Othman (2020), the primary aspiration of the PLC concept is focused on sharing skills and knowledge among teachers, building effective relationships, planning more focused programs, utilizing available resources within the school

environment, and sharing leadership to realize national education policies and produce high-quality human capital for the future.

Research design

The survey method was employed in this study using a questionnaire as the main instrument for data collection. The questionnaire for the Professional Learning Community (PLC) section was guided by Hord (1997) and adapted from the School Professional Staff as Learning Community Questionnaire-Revised (PLCA-R) by Olivier and Hipp (2010). It encompasses five dimensions: shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions in terms of relationships and structures. The questionnaire for teachers' self-efficacy was adapted from the Teacher's Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001). The TSES includes three dimensions: teachers' efficacy in student engagement, instructional strategies, and classroom management.

Sample of the study

The study focused on a single group of respondents, comprising teachers from secondary cluster schools of excellence in the Kota Setar district. Random sampling was utilized to select participants. The study population consisted of 320 teachers from the designated schools, and a total of 175 teachers were randomly chosen as the sample, based on the Sample Size Determination Table by Krejcie and Morgan.

Instruments

Both qualitative and quantitative research methods were employed, with the primary instrument being a questionnaire. This is a widely used tool for data collection in research. Two standardized measurement tools were utilized to measure the variables in this study.

1. The measurement tool for PLC was guided by Hord (1997) and adapted from the PLCA-R by Olivier and Hipp (2010).

2. The questionnaire items for teachers' self-efficacy were adapted from the TSES by Tschannen-Moran and Woolfolk Hoy (2001).

The questionnaire was divided into three main sections:

- **Section A:** Demographic information of respondents, including gender, age, teaching experience, academic qualifications, and employment duration.

- **Section B:** Five dimensions of the PLC derived from Hord (1997). These dimensions include shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions concerning relationships and structures.

- **Section C:** Three dimensions of teachers' self-efficacy, adapted from Tschannen-Moran and Hoy (2001), focusing on student engagement, instructional strategies, and classroom management.

Data collection procedures

The researcher initiated the eRAS 2.0 application, an online system for education research approval. Approval was subsequently obtained from the Kedah State Education Department (JPN). Once approval was granted, the researcher contacted and informed the respective schools regarding the study. After obtaining consent from the school principals, questionnaires were distributed using Google Forms. This method facilitated the review and return of completed forms. Respondents were given six days to complete and submit the forms to the researcher. Upon completion, the collected data were progressively entered into SPSS version 23 for analysis.

Data analysis methods

Statistical Package for the Social Sciences (SPSS) version 22 for Windows was used to analyze the data. The study's findings on PLC practices and teachers' self-efficacy were examined using the following methods:

- **Reliability Test:** Cronbach's Alpha
- **Descriptive Statistics:** Frequency, mean, and standard deviation
- **Inferential Statistics:** Pearson correlation analysis and regression analysis

Additionally, the researcher conducted qualitative data analysis to provide a more detailed interpretation of the results collected through the quantitative methods.

Results and findings

This section includes a report on the demographics of respondents, descriptive statistical analysis comprising percentages, means, and standard deviations, used to evaluate the respondent profiles. The analysis also answers the research questions. Inferential statistics such as T-tests, One-Way ANOVA, Pearson Correlation, and Linear Regression were utilized to examine differences, relationships, and influences between independent and dependent variables to test the study's hypotheses. Additionally, qualitative analysis was conducted to provide more detailed insights into the findings.

Descriptive Statistical Analysis

Table 1. Range of Mean Scores and Interpretation

Mean Score Range	Interpretation (Level)
1.0 - 1.8	Very Low
1.9 - 2.6	Low
2.7 - 3.4	Moderate
3.5 - 4.2	High
4.3 - 5.0	Very High

(Source: Kamaruzaman, 2009)

Table 2. PLC Levels among Secondary Cluster School Teachers in Kota Setar District

PLC Dimensions	N	Mean (M)	Standard Deviation (SD)
Shared and Supportive Leadership	175	3.98	0.59
Shared Values and Vision	175	4.03	0.52
Collective Learning and Application	175	4.14	0.46
Shared Personal Practices	175	4.17	0.41
Supportive Conditions (Relationships and Structure)	175	4.06	0.52

The findings in Table 2 indicate that all five PLC dimensions are practiced at a high level among the teachers. The highest mean score is for "Shared Personal Practices" (M = 4.17, SD = 0.41), followed by "Collective Learning and Application" (M = 4.14, SD = 0.46). The overall results show that these teachers incorporate all five PLC dimensions into their daily routines.

Table 3. Self-Efficacy Levels of Secondary School Teachers in Kota Setar District

Dependent Variable	N	Mean (M)	Standard Deviation (SD)
Teacher Self-Efficacy	175	4.17	0.44

The findings in Table 3 show that teacher self-efficacy is at a high level (M = 4.17, SD = 0.44). This indicates that the secondary school teachers in Kota Setar District demonstrate strong self-efficacy in their professional roles.

Inferential Statistical Analysis

Hypothesis 1 (Ho1):
There is no significant difference in teacher self-efficacy between male and female teachers in secondary cluster schools in Kota Setar.

Gender	N	Mean (M)	SD	t-value	df	p-value
Male	32	4.21	0.34	0.845	59.65	0.401
Female	143	4.16	0.46			

The findings from the independent T-test reveal no significant difference in self-efficacy scores between male and female teachers ($p > 0.05$). Thus, Ho1 is accepted.

Hypothesis 2 (Ho2):
There is no significant difference in teacher self-efficacy based on years of teaching experience.

Table 5. One-Way ANOVA Results for Teacher Self-Efficacy Based on Years of Teaching Experience

Source	Sum of Squares	df	Mean Square	F	p-value
Between Groups	2.458	5	0.492	2.705	0.022
Within Groups	30.704	169	0.182		
Total	33.161	174			

The One-Way ANOVA results indicate a significant difference in teacher self-efficacy based on teaching experience ($p < 0.05$). Ho2 is rejected.

Hypothesis 3 (Ho3):
There is no significant relationship between shared leadership and teacher self-efficacy.

Variable	Correlation Coefficient (r)	p-value
Shared Leadership	0.557	0.000

Pearson Correlation shows a moderately strong and significant positive relationship ($r = 0.557$, $p < 0.05$). Thus, Ho3 is rejected.

Hypothesis 4 (Ho4):
There is no significant relationship between shared values/vision and teacher self-efficacy.

Variable	Correlation Coefficient (r)	p-value
Shared Values/Vision	0.598	0.000

The results indicate a moderately strong and significant positive relationship ($r = 0.598$, $p < 0.05$). Ho4 is rejected.

Hypothesis 5 (Ho5):
There is no significant relationship between collective learning/application and teacher self-efficacy.

Variable	Correlation Coefficient (r)	p-value
Collective Learning/Application	0.665	0.000

The findings reveal a strong and significant positive relationship ($r = 0.665$, $p < 0.05$). Ho5 is rejected.

Hypothesis 6 (Ho6):
There is no significant relationship between shared personal practices and teacher self-efficacy.

Variable	Correlation Coefficient (r)	p-value
Shared Personal Practices	0.584	0.000

The results show a moderately strong and significant positive relationship ($r = 0.584$, $p < 0.05$). Ho6 is rejected.

Hypothesis 7 (Ho7):
There is no significant relationship between supportive conditions and teacher self-efficacy.

Variable	Correlation Coefficient (r)	p-value
Supportive Conditions	0.549	0.000

The analysis reveals a moderately strong and significant positive relationship ($r = 0.549$, $p < 0.05$). Ho7 is rejected.

Hypothesis 8 (Ho8):
PLC dimensions do not significantly predict teacher self-efficacy.

Table 12. multiple regression results

Model	R	R^2	Adjusted R^2	p-value
Collective Learning/Application	0.665	0.442	0.439	0.000

Only one dimension, **Collective Learning/Application**, significantly predicts teacher self-efficacy ($R^2 = 0.442$, $p < 0.05$). Ho8 is rejected.

Qualitative analysis

After completing the quantitative data analysis, the researcher proceeded to the second phase of data analysis, which was conducted qualitatively. Respondents were provided with three open-ended questions to freely express their views or opinions in writing.

The qualitative findings revealed that 80% of the teachers believed that the Professional Learning Community (PLC) implemented in their schools was very effective. The analysis highlights PLC practices in the four cluster schools in the Kota Setar district. Teachers at these schools exhibited high levels of self-efficacy as they were involved in establishing the schools' mission and vision, boosting their motivation to achieve shared goals.

More than half of the teachers stated that PLC improved their self-efficacy in performing their duties. However, some felt overwhelmed by the implementation of PLC, citing additional responsibilities and workloads, which made them more comfortable working individually. This challenge hindered the full implementation of collaborative practices in certain schools. Despite this, most teachers believed that PLC positively impacted their self-efficacy and provided them with the motivation to collectively achieve their goals.

Discussion and implications of the study

The findings from the first research question demonstrated that teachers in these schools consistently practiced all five dimensions of PLC in their daily activities, with the dimension of shared personal practices scoring the highest. This indicates that the teachers in the four studied schools were highly collaborative and played key roles in forming a professional learning community.

The second research question revealed that the teachers in these cluster schools exhibited high self-efficacy (Mean = 4.17). This suggests that they were skilled in classroom management, implementing effective teaching strategies, and creating active teaching and learning processes. These findings align with research by Ismail, Hooi Yen, and Kanesan Abdullah (2015), which confirmed significant relationships between PLC dimensions and teacher self-efficacy.

The third research question found no significant difference in self-efficacy between male and female teachers, confirming that gender does not influence the development of self-efficacy among the teachers in these schools.

For the fourth research question, a significant difference was found in self-efficacy based on teaching experience. This suggests that teaching experience plays a role in shaping a teacher's efficiency and attitudes. However, these results contradict findings by Ismail, Hooi Yen, and Kanesan Abdullah (2015), who concluded that experience does not necessarily affect teacher self-efficacy.

The fifth research question highlighted a significant relationship between shared leadership and teacher self-efficacy. Teachers in these cluster schools worked as a cohesive unit, with shared responsibilities contributing to achieving shared goals. Similarly, the sixth research question confirmed a significant relationship between shared values and vision and self-efficacy, indicating that all educators contributed to shaping the schools' mission and vision.

The seventh research question found a strong and significant relationship between collective learning and application and teacher self-efficacy ($r = 0.665$). This dimension fosters a culture of continuous learning within schools, aligning with Yee Boo Chee (2019), who emphasized the transformative power of PLC in enhancing teacher quality and student achievement.

Lastly, the study identified that collective learning and application was the most influential dimension in predicting teacher self-efficacy, surpassing the other PLC dimensions. Qualitative findings supported these results, illustrating that most teachers believed PLC significantly enhanced their self-efficacy and encouraged peer learning to achieve collective goals.

The overall findings suggest that teachers in these schools consistently practice all five PLC dimensions at a high level. Combining quantitative and qualitative methods allowed for a more comprehensive analysis. Teachers were motivated to maintain their schools' high performance, contributing to a conducive educational environment. Although some preferred individual work, most teachers carried out their responsibilities effectively.

Conclusion

This study aimed to strengthen knowledge and provide meaningful insights to enhance teacher self-efficacy, fostering collaboration, stress management, and effective teaching practices. Focused on the cluster schools of Kota Setar, the study revealed the uniqueness of each school, where positive relationships among educators drove collective efforts to achieve shared missions and visions. This led to a healthy competition among teachers to excel in their academic tasks.

Effective teaching directly impacts student excellence. To ensure high teacher self-efficacy, school communities, including leaders and colleagues, must collaborate to form a Professional Learning Community (PLC).

Based on the study's findings, a significant relationship exists between PLC practices and teacher self-efficacy. Statistical evidence confirms that PLC positively influences teacher self-efficacy. Teachers with high self-efficacy are more proactive, skilled, and confident in addressing challenges, ultimately enhancing their teaching and learning processes.

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