

## Professional learning community: A pilot study

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### Abstract

This pilot study was conducted to test the reliability of the Professional Learning Community questionnaire which involved eight dimensions, namely norms and joint vision, commitment and support of school principal, structural support, mutual understanding and beliefs, collaborative learning, reflective dialogue, collective inquiry and external support. The design of this study is a quantitative study using SPSS to test the reliability of the instrument by using Cronbach Alpha. A total of 100 respondents were involved with this study to answer the questionnaire. This questionnaire has 63 items and uses the Likert scale. Each item has six answer options namely the scale of the Likert scale from scale one which shows the respondents strongly disagree with the item's statement to scale six which shows the respondents strongly agree with the item's statement as stated in the questionnaire. Overall Alpha Cronbach Value for Professional Learning Community instrument with eight dimensions is between 0.82 to 0.93.

**Keyword:** Validity, Reliability, Instrument, Questionnaire, Profesional Learning Community

### INTRODUCTION

Primary school teachers are a crucial element in primary school education that serves to ensure that education runs well and effectively in producing students who fulfil national education aspirations. Changes to the changes that occur in the education system at the international level have an impact on the national education landscape, and ultimately, the change is happening at the school level. Various approaches have been carried out by the Ministry of Education (MOE) through state education departments, regional education departments and schools in enhancing continuing professionalism. The Malaysia Education Blueprint 2013 - 2025 has recommended the Professional Learning Community (PLC) as a tool that can help improve teacher professionalism through knowledge sharing within the community of teachers and staff within the school. PLC culture in schools is a continuous effort that can help teachers to improve their teaching (pedagogy) effectively and continuously (KPM,2013). PLCs have long been implemented in developed countries to increase pedagogy among their educators. Consistent and consistent implementation should be implemented so that PLCs can give the maximum impression to PLC culture (DuFour & Fullan, 2013). This is because PLC can develop a high level of learning culture among teachers through the application of learning culture among each member of the school community (Hord, 1997). In 2018, Tai, Omar and Ghouri (2018) developed the Professional Learning Communities Scale (PLCS) based on Malaysian school

settings to measure local PLCs. This instrument consists of two main dimensions, Organizational Factor and Non-organizational Factor. Organisational Factor encompasses four sub-dimensions, namely, (i) Shared Norms and Vision; (ii) Principal's Commitment and Support; (iii) Structural Support; and (iv) Collegial Understanding and Trust. Shared Norms and Vision. Non-organizational Factor also consists of four sub-dimensions namely, (i) Collaborative Learning; (ii) Reflective Dialogue; (iii) Collective Inquiry; and (iv) External Support System (Tai et al., 2018).

## **PROBLEM STATEMENT**

Skills and knowledge should change as time goes by because teachers missed the knowledge is no longer relevant. Therefore, to produce teachers who can perform their duties well and effectively, the teacher development program is also growing. Teachers at school have been introduced with various methods to enhance teaching professionalism involving three aspects of professionalism, knowledge and skills. Among the methods proposed to teachers are lectures, demonstrations, observations, interviews, brainstorming, group discussions and role play. The application of these rules is one of the concepts of teacher education in services or better known as the development of teacher professionalism (Amin, 2008).

The Ministry of Education Malaysia (MOE) has proposed a professional learning community (PLC) in the Malaysia Education Blueprint 2013-2025 (PPPM) to assist teachers in developing their knowledge and understanding. The implementation of PLCs has started in schools in Malaysia and schools can establish PLC practices in their respective schools and show positive results where the PLC dimensions show a high mean score (Zuraidah, 2009). This means that teachers are prepared to implement PLC practices in schools, but whether PLC is able to address the stated issues, i.e. lack of knowledge, skills, attitude of teachers who love to work alone and not sharing knowledge and skills that do not contribute towards the improvement of professionalism teachers cannot be ascertained as studies are underdeveloped. . Therefore, this study intends to test the level of reliability of the Professional Learning Community questionnaire instrument to use as a testing tool in empowering PLC as expected in The Malaysia Education Blueprint 2013 - 2025.

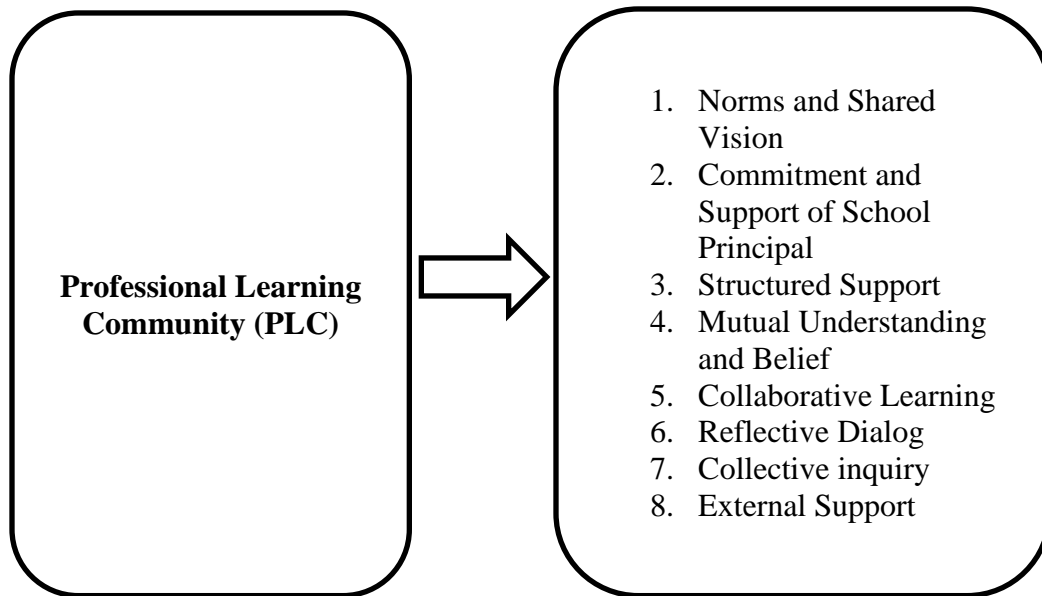
## **RESEARCH OBJECTIVE**

Examine the level of reliability of the eight-dimensional professional learning community (PLC) norms and joint vision, commitment and support of school principal, structural support, mutual understanding and beliefs, collaborative learning, reflective dialogue, collective inquiry and external support.

## RESEARCH QUESTIONS

Is there reliability between the eight dimensions of the professional learning community (PLC) norms and joint vision, commitment and support of school principal, structural support, mutual understanding and beliefs, collaborative learning, reflective dialogue, collective inquiry and external support?

**Figure 1:** Conceptual Framework



## LITERATURE REVIEW

### Professional Learning Community

According to DuFour and Marzano (2011), Creating a Professional Learning Community (PLC) provides teachers with strategies to build capacity, improve teaching and learning competence and integrity, and have an overall positive impact on school culture. The purpose of the PLC is to ensure that learning takes place in the classroom (Botha, 2012; DuFour, 2014). Teacher discussions in PLC enable focus on learning rather than teaching. This places accountability on all stakeholders and is not much smaller. Administrators can be involved in the learning process and ensure cooperation works smoothly. The PLC determines what students will learn, how teachers know they have learned, and how troops can help fighters (Eaton, 2015; Graham & Ferriter, 2010; Lippy & Zamora, 2012). Besides, pupil intervention is maintained on time and directed, and professional knowledge increases at every encounter.

PLC also ensures cooperation and communication at the school level. When teachers work together, this improves student achievement and maintains the same educational opportunities. Barton (2004) notes that students from minority backgrounds continue to reach a lower level

than their white colleagues. PLC's must plan diversity, ensuring that all subgroups can achieve the same level. Also, the PLC must focus on the decision. Using data to drive decisions is key to PLC's success (Nadelson, Louis, Seifert, Hettinger, & Coats, 2013).

Tam study (2014) finds a professional learning community (PLC) to Chinese language teachers in high school in Hong Kong can change the trust and practice of teachers. The findings show that PLCs lead to coherent structural development, collaborative culture, and practical learning activities. It helps the teacher to overcome the initial difficulty and encourage their motivation to change. This shows that effective PLC implementation is essential for teacher development. Vangrieken, Meredith, Packer & Kyndt (2017) also noted that the community of teachers played an important role in the professional development of teachers.

The study of Aziah, Loh & Abdul Ghani (2015) also notes that there are a relationship and influence between PLC and teachers' self-efficacy. A study involving 234 teachers from 10 schools in the south-west of Penang found that there was a significant but weak relationship between the PLC dimension and the dimensions of teacher self-efficacy. Zuraidah, Zulkifli, Nik Mustafa & Mohammad Ismath (2017) stated that PLCs are the key to empowering Malay language teachers in secondary schools. A study involving 50 Malay teachers from five selected secondary schools in Kuala Lipis, Pahang. The findings show that the common practice in Malay language learning and teaching is less effective. Through PLC and cultural change, the problem can be improved, thereby improving the quality of Malay language teachers.

Also, the PLC was developed to improve the school's systematic approach by standardising the content and assessments exposed to students in general. The fundamental principles outlined in the PLC relate to the process of ensuring students learn, which reflects the modest changes of excessive teaching to learning with a deep understanding of certain subjects (Garmston & Wellman, 1999). As depicted in PLC's and training communities, flexible, collaborative cultures have recognised as essential building elements. In this way, teachers are involved in a team to develop appropriate social and discipline climate, which reflects the widespread improvement in the school environment (Wald & Castleberry, 2000). The focus on the decision has been identified as an essential aspect of society, emphasising the current level of student achievement and determining specific goals for future improvement. The collective ability to help everyone learn will increase as a result of the emphasis on broad collaboration (Popp & Goldman, 2016).

The eight dimensions of the professional learning community model based on a study conducted by Tai, Omar and Ghouri (2018). The findings of the study show that there are eight suitable dimensions and main features of the Professional Learning Community Model and ideal for the Malaysian context is like table 1. The table also describes the illustrations and figures supporting the PLC dimensions.

**Table 1:**The Dimension of the Professional Learning Community Model

No	Dimension	Description	Source
1.	Norms and Shared Vision	According to Hord (1997) among the keys of PLC's success in school is to share missions and visions to defend the learning culture among leaders, teachers and students.	Hord (1997)
2.	Commitment and Support of School Principal	Some empirical studies have explained the commitment of the school leaders who are required to initiate, support and maintain active PLC's in schools.	Hord (2008), Hord & Sommers
3.	Structured Support	Structured support is where, where, and how staff regularly assembled as units for learning, decision-making, problem-solving, and creative work that characterise a professional learning community.	Hord (2004)
4.	Mutual Understanding and Belief	Teachers share practices and enjoy high levels of cooperation in their daily work (Wignall, 1992). Mutual Understanding and Belief is the basis of such a work culture. Teachers seek help, support, and trust from the development of good relationships with each other.	Wignall (1992)
5.	Collaborative Learning	Hord (1997) focuses on research studies that link teachers workplace with teaching quality. He agreed with Rosenholtz (1989) and McLaughlin and Talbert (1993) that when teachers had the opportunity to collaborative learning, they learned more and more committed to the pupils and professions.	Hord (1997), Rosenholtz (1989), McLaughlin & Talbert (1993):
6.	Reflective Dialog	A reflective dialogue between a teacher, a member of the PLC, allows teachers to conduct examinations and discussions on their teaching practices,	(Darling- Hammond & Richardson, 2009).
7.	Collective inquiry	Collective inquiry process involves a process that enables educators to share knowledge and learning as a group.	Hord (1997), Kazemi & Franke, (2004)
8.	External Support	Schools need financial, technical and political support from the district, government and state agencies, reform projects, parents and other citizens.	Lynn (1995, 1996)

### Validity and Reliability

Validity and Reliability are crucial in defending the integrity of the instrument from defects (Darusalam & Hussin, 2016). Before the pilot test is conducted, the researcher should conduct the validity. Validity can be conduct is face validity and construct validity. The face validity is whether the gauge shows the validity of the survey respondents, and others who have less exposure to the measurement. This validity is to ensure item clarity, questions asked, adequate response time, and most importantly the item measures what should be measured (DeVellis, 2003). The construct validity is to see how well an instrument measures what should be measured accurately before the test is considered valid. Construct validity is the most complex as it is assessed using both statistics and practical procedures (Creswell, 2012). The purpose of the pilot study was to test the study benchmark against all variables to a selected set of samples based on characteristics similar to the actual sample. The pilot study was also to determine the suitability of the item to the condition of the sample. Items that are inappropriate, misunderstood or misleading need to be repaired or dropped (Chua, 2012).

## **RESEARCH METHODOLOGY**

The study was conducted using a qualitative approach. The questionnaire method was used to conduct the pilot study. A total of 100 teachers in Kuala Lumpur were randomly selected for this pilot study. These teachers are certified teachers in national school. Survey method through the questionnaire is prevalent for research in various fields, especially social science studies (Chua, 2012) and education (McMillan, 2012). The design of this study is quantitative to test the reliability of the Professional Learning Community (PLC) practice questionnaire. In the analysis of this study, researchers use quantitative methods. Therefore, researchers use Alfa Cronbach to test the reliability index. The Cronbach alpha coefficient index approximating 1.00 indicates high reliability and consistency of the instrument.

## **POPULATION AND RESPONDENT**

The population of this study is teachers who work with the Ministry of Education Malaysia (MOE) at national schools (NS) in Peninsular Malaysia. Based on teachers' projections obtained from MOE on April 30, 2018, the total number of teachers serving NS in Peninsular Malaysia was 178,498. Before the actual survey conducted, pilot studies were conducted to test the reliability and validity of the research instrument to use. This is to prevent confusion and identify the weaknesses of the built-in items (Creswell, 2014). To answer the reliability of this instrument, a total of 100 samples were randomly selected. There are scholars who recommend a pilot study sample of not more than 100 respondents or between 10 and 30 respondents or need to exceed 20 or a minimum data point of 100 or five times (Chua, 2012). Random sampling is chosen to respond to the instruments constructed and involve samples from various angles and areas (Creswell & Clark, 2011).

## **RESEARCH INSTRUMENTS**

The questionnaire was built by Tai, Omar and Ghouri (2018) based on the Malaysian context. There were 63 items in this questionnaire (Table 2) where each dimension had items between seven and eight that allowed respondents to give their perceptions concerning the professional learning community (PLC) in their schools. Each item uses a Likert scale from a scale of one indicating that the respondent strongly disagrees with the item's statement to scale six which shows the respondents strongly agree with the item's statement as stated in the questionnaire. The PLC model has been tested in detail by Tai, Omar and Ghouri (2018) using "structural equation modelling analysis" (SEM) with 1,062 teachers as respondents. This analysis produces two factors PLC model that is an organisational factor and non-organisation factor. Organisational factors consist of four dimensions, namely common norms and visions, commitment and support of school principals, structured support, and mutual understanding and trust. Non-organization factors include four dimensions, namely collaborative learning, reflective dialogue, collective inquiry and external support. The instrument uses a Likert-type ranking with scores ranging from one to six. Scoring obtained by assigning 1 to "strongly disagree", 2 to "disagree", 3 to "moderately disagree", 4 to "moderately agree", 5 to "agree", and 6 to "strongly

agree". (Tai et al., 2018). The Likert scale uses with even number such 6 points because researchers want respondents commit to either positive or negative scales and to avoid neutral. Likert scale is applied as one of the most fundamental and frequently used psychometric tools in educational and social sciences research (Joshi, Kale, Chandel & Pal, 2015).

## **RESEARCH PROCEDURES**

The questionnaire developed by Tai, Omar and Ghouri (2018) sent to selected teachers as respondents of the study. Respondents are teachers who have taught at least one year and permanent teachers. The questionnaire that has answered will be retrieved and will be analyses using alpha Cronbach to obtain the reliability level. Teachers who become respondents for this pilot study will not be involved with actual studies to avoid pollution (Chua, 2006).

## **DATA ANALYSIS**

The data obtained from the pilot study were analyses using SPSS with internal consistency method and the method used was through a calculation of the alpha coefficient of Cronbach instrument of study. Reliability is a concept of the consistency and stability of an instrument (Creswell, 2014). However, the reliability of the study instrument uses alpha Cronbach coefficients, where alpha values of 0.65 to 0.95 are satisfactory and adequate (Chua, 2006).

## **RESEARCH FINDINGS**

The findings of this study were tested using the reliability value of Alfa Cronbach tested after the value of the correlation reading showed high levels of communication. The findings from this pilot study will be used to ensure that the instruments are robust and can be improved so that each construct to be tested can be accurately measured. A pilot study is the best way to determine the research done perfectly because it helps to solve the problem before the actual survey (Leedy and Omrod, 2011). Consistency refers to the high reliability of the built-in instruments, while stability is the freedom of error and results inconsistent results (Gay et al., 2012). While Babbie (2014) and Sekaran (2003) state that reliability is the extent to which an instrument is reorganised to give a similar decision. Table 3 shows the reliability analysis of professional learning community instruments and alpha Cronbach coefficients showing alpha 0.967, which indicates that the instrument has high reliability. Accordingly, the alfa Cronbach reliability index for the professional learning community dimension (PLC) of "norms and shared vision" of 8 items recorded alpha values at 0.88; "commitment and support of school principal" 8 items recorded alpha values at 0.93; "structured support" of 8 items recorded alpha values at 0.91; 8 items "mutual understanding and belief" recorded alpha values at 0.91; "collaborative learning" of 8 items recorded alpha values at 0.92; "reflective dialog" of 8 items recorded alpha values at 0.93; "collective inquiry" of 7 items recorded alpha values at 0.86; and "external support" of 8 items recorded alpha values at 0.82. Generally, the alpha Cronbach reliability index for the dimension of the professional learning community is higher than 0.60 and can continue to the next level.

**Table 2:** Reliability Analysis of Professional Learning Communities Instruments.

Dimension	Item Number	Item Amount	Pilot Test Alfa Cronbach ( $\alpha$ ) Value
Norms and Shared Vision	A1-A8	8	0.88
Commitment and Support of School Principal	B1-B8	8	0.93
Structured Support	C1-C8	8	0.82
Mutual Understanding and Belief	D1-D8	8	0.91
Collaborative Learning	E1-E8	8	0.92
Reflective Dialog	F1-F8	8	0.93
Collective inquiry	G1-G7	7	0.86
External Support	H1-H8	8	0.82

**Table 3:** Item Statistics

Item Number	Mean	Std. Deviation	Cronbach's Alpha if Item Deleted
A1	5.48	0.64	0.87
A2	5.40	0.66	0.88
A3	5.55	0.61	0.86
A4	5.45	0.75	0.86
A5	5.49	0.64	0.86
A6	5.02	0.92	0.86
A7	4.96	1.00	0.86
A8	5.39	0.69	0.86
B1	5.40	0.68	0.92
B2	5.32	0.68	0.92
B3	5.10	0.86	0.92
B4	5.13	0.85	0.93
B5	5.31	0.65	0.92
B6	5.25	0.68	0.92
B7	5.36	0.65	0.92
B8	5.37	0.66	0.92
C1	5.76	0.48	0.81
C2	5.61	0.70	0.81
C3	5.57	0.64	0.79
C4	5.42	0.65	0.79
C5	5.46	0.68	0.79
C6	5.29	1.06	0.80
C7	5.17	0.82	0.79
C8	5.00	1.11	0.82
D1	5.44	0.66	0.90
D2	5.38	0.79	0.90
D3	5.36	0.75	0.90
D4	5.33	0.70	0.89
D5	5.28	0.69	0.90
D6	5.34	0.69	0.90
D7	4.82	0.94	0.93
D8	5.22	0.70	0.90
E1	5.35	0.63	0.92
E2	5.32	0.72	0.92
E3	5.09	0.86	0.91
E4	5.13	0.85	0.90
E5	5.11	0.78	0.90
E6	5.13	0.73	0.90
E7	4.91	0.91	0.92



E8	5.20	0.76	0.90
F1	5.46	0.69	0.92
F2	5.39	0.84	0.93
F3	5.35	0.68	0.91
F4	5.36	0.76	0.91
F5	5.21	0.75	0.91
F6	5.33	0.71	0.91
F7	5.25	0.73	0.91
F8	5.22	0.73	0.92
G1	5.03	0.88	0.84
G2	5.11	0.85	0.84
G3	5.35	0.71	0.86
G4	5.33	0.71	0.85
G5	4.91	0.94	0.83
G6	4.78	1.06	0.84
G7	5.10	1.07	0.85
H1	4.95	1.10	0.80
H2	5.07	1.06	0.80
H3	5.28	0.73	0.78
H4	5.12	0.91	0.78
H5	5.26	0.79	0.79
H6	5.00	1.11	0.83
H7	5.44	0.66	0.79
H8	5.38	0.79	0.81

## DISCUSSION AND IMPLICATION

This study was conducted to test the reliability level between norms and joint vision, commitment and support of school principal, structural support, mutual understanding and beliefs, collaborative learning, reflective dialogue, collective inquiry and external support. Reliability often referred to as internal stability and consistency (Creswell 2002, 2005, 2010; Pallant 2001; Sekaran 1992). The Cronbach Alpha value often applied to during the measurement of internal consistency of a construct (Cronbach 1946; Norusis 1977). The Cronbach Alpha value, which exceeds 0.60 often used as the reliability index of an instrument (Mohd Majid 1990; Pallant 2001; Siti Rahayah 2003).

For Sekaran (1992), the reliability value less than 0.60 is considered low and unacceptable; the Alpha value between 0.60 and 0.80 is acceptable while the Alpha value higher than 0.80 is deemed to be good. Based on the above explanation, the researcher has used the Cronbach Alpha value to determine the reliability of the questionnaire. This shows that the eight-dimensional professional learning community model (Tai et al., 2018) model is suitable for use in research conducted by researchers. This questionnaire will be used in a research study involving national school teachers in peninsular Malaysia. The dimensions of the highest Cronbach Alpha value between the eight dimensions are Collaborative Learning at 0.93. In conclusion, the findings show that the reliability index of the questionnaire instrument is high. This value means that this instrument is at an acceptable level and is well within its level of reliability.

## CONCLUSION

Overall, this study has focused on detailed methods to test the level of reliability of the Professional Learning Community questionnaire instrument developed by Tai, Omar and Ghouri (2018). At the pilot study stage, the instrument for developing a Professional Learning Community model has been tested and identified. Thus, this study can be continued to the next level and administered at 91 national schools in Peninsular Malaysia which were randomly selected and involved 728 teachers who had served at least one year. It aims to conduct studies involving dimensions of PLCs such as norms and joint vision, commitment and support of school principal, structural support, mutual understanding and beliefs, collaborative learning, reflective dialogue, collective inquiry and external support.

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