International Journal of Evaluation and Research in Education (IJERE)
Vol. 13, No. 3, June 2024, pp. 1576~1582
ISSN: 2252-8822, DOI: 10.11591/ijere.v13i3.27178

The validity and reliability of professional learning community instruments in small schools peninsular Malaysia

Mohd Norlizam Mohd Razali, Aida Hanim A. Hamid, Bity Salwana Alias
Center for the Study of Leadership & Educational Policy, Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia

Article Info

Article history:

Received Mar 30, 2023
Revised Sep 6, 2023
Accepted Oct 9, 2023

Keywords:

Exploratory factor analysis
Professional learning community
Reliability
Small schools
Validity

ABSTRACT

A professional learning community (PLC) instrument was developed to determine the level of PLC practice in small schools in Peninsular Malaysia. This study was conducted in Perak and Negeri Sembilan to determine the instrument's reliability and validity. Exploratory factor analysis (EFA) and item reliability analysis were used to determine the questionnaire's reliability and validity. Next, the average congruence percentage (ACP) is used to determine the reliability test between expert assessors. Experts approved the validity and reliability of the instrument before the EFA test was conducted. All five constructs have high-reliability index values between 0.86–0.95. Next, the EFA analysis shows five dimensions in the PLC instrument with factor loadings ranging from 0.61–0.84. The findings also show that the variance explained in the data is 68.99% with an Eigenvalue greater than 1. This result indicates that all items are received with high approval. In addition, a very high-reliability coefficient value, α=0.96. The results prove that this PLC instrument has high validity and reliability and can measure the level of PLC implementation practices in small schools in Peninsular Malaysia.

Corresponding Author:

Aida Hanim A. Hamid
Center for the Study of Leadership & Educational Policy, Faculty of Education,
Universiti Kebangsaan Malaysia
43600 Bangi, Malaysia
Email: aidahanim@ukm.edu.my

1. INTRODUCTION

In Malaysia, there are schools with a small number of students which are categorized as small schools, according to the Ministry of Education Malaysia is 150 and below [1]. Small schools contribute to 30.75 % of all schools in Malaysia [2]. A total of 73% of the locations of these small schools are in rural areas. While the academic achievement in small school is lower compared to other, the average achievement score of small school is 68%. This score is lower by 4% than other schools [1]. Among the factors mentioned is the difficulty of finding and retaining teachers and placing quality headmasters to serve in the school.

Previous studies have found that rural students' low academic achievement is due to several factors, including socioeconomic and student background, school location and student placement, teacher teaching style, and student learning, with school leadership being the most important factor [3]. Several problems and constraints in small schools also contribute to the achievement of performance in small schools. Among the issues faced by small schools are school infrastructure, high teacher turnover, the location of the school, and the diversity of students in the implementation of combined classes, all of which require a high level of preparedness on the part of school administrators [4]. One of the factors of low performance in small schools compared to other schools is teacher efficiency [1].

To improve performance in small schools, one of the approaches implemented by the ministry is to implement an effective leadership model, the delivery of good teaching by teachers, as well as the involvement of parents and the community [1]. A good school is a school that is effective, of high quality and has the highest achievement [5]. Throughout the shift of four in Malaysia Education Blueprint (MEB) 2013-2025, a primary focus is on cultivating a culture of emulating colleagues in best practice sharing activities; mentoring is an effort to enhance teacher professionalism, and additional efforts are made to increase accountability to colleagues for adhering to professional standards. A successful organization is a learning organization [6], which is defined as one that engages in ongoing professional development and cultivates a learning pattern through time. The learning organization is to create continuous learning among the citizens of the organization [7]. Based on this notion, professional learning community (PLC) practices have been implemented in Malaysia from 2011 until now and as a platform for developing teacher professionalism in Malaysia as an element of continuous learning [8].

Therefore, this study focuses on the level of PLC practiced in small schools. However, to what extent do school members implement PLC practices in small school settings? To ensure the school community's practice of PLC practice, it is necessary to measure the level of the practice through an instrument that will be developed based on the PLC model introduced by Hord [9] with five constructs in PLC practice. The five constructs that have been introduced are used as the basis for the study constructs, namely leadership support and sharing, vision and mission sharing, collective learning and application, organizational support, and private practice sharing.

In the context of a small school in Peninsular Malaysia, PLC items were developed for this study. Various instrument development processes were carried out before this test was made to ensure that each item is accurate and has a high validity and reliability value. This study aims to confirm the validity and reliability of the PLC instrument so that researchers or other educational stakeholders can use it to evaluate the PLC practices of schools in Malaysia.

2. RESEARCH METHOD

2.1. Sample and data collection

This study was designed and conducted in two states in Peninsular Malaysia, namely Perak and Negeri Sembilan. The research design is a survey study using a questionnaire administered using Google Form application. After evaluating and selecting respondents for this survey, the researcher emailed them a link to a Google Form to answer. A total of 150 respondents were sent a link via email and WhatsApp involving 73 small schools in Perak and Negeri Sembilan, and only 102 questionnaires were answered correctly and then analyzed. This number is considered sufficient based on previous study [10], the number of respondents conducting this exploratory factor analysis (EFA) is a minimum of 60 respondents and according to Hair *et al.* [11] involving EFA based on a suitable sample size of 100 people.

2.2. Instrumentation

This instrument was developed based on the PLC model by Hord [9]. The five dimensions found in this model are used to measure the level of practice of teachers' PLC in small schools. Leadership support and sharing, mission and vision sharing, collective learning and learning application, supportive conditions, and personal practice sharing. The development of this theoretical questionnaire is also through the process of analyzing the learning organization theory [12], The semi-structured interview process conducted by the researcher is to obtain more accurate additional information from the parties responsible for the small school and the respondents who will be studied as the process in constructing questionnaire items. The interview involved officials from the Departments of the Ministry of Education Malaysia, such as the Teacher Professionalism Division, the Educational Planning and Research Division, the Inspectorate, headmasters, and teachers from small schools.

To ensure the validity of the questionnaire, the researcher used the method of face validity and content validity, referring to 10 experts to evaluate the questionnaire items. To determine the reliability between the experts, the average congruency percentage (ACP) is used [13]. Meanwhile, Waltz *et al.* [14] suggested that the ACP value should reach 90% or above. After receiving feedback from the experts, as shown in Table 1, there is one item that needs to reach the level that has been set. The researcher has dropped the items, and subsequently to ensure the reliability of the questionnaire, the researcher will conduct this study.

After the pilot is carried out, the data will be analyzed to see the item's validity and reliability level through EFA and Cronbach's alpha. The final construct to perform EFA consists of five components, with 40 items, as shown in Table 2. The scale used in this study is 1 for strongly disagree to 5 for strongly agree. Five interval scales are used to increase the response rate and response quality along with reducing the "frustration level" of respondents [15], this will increase the response rate and response quality more effectively [16].

2.3. Exploratory factor analysis

After the EFA is carried out, the items that have been received will be grouped according to the constructs that have been set. The following process is to determine the reliability of each construct formed in this instrument as a result of the EFA produced. This reliability value determines the extent to which this instrument can be used in real studies [17]. If a high-reliability value is obtained on the instrument, it helps to obtain more accurate data in line with the objective requirements of the study [18].

3. RESULTS

The original item construct had 41 items from all five professional learning community constructs. After expert evaluation, 1 item was dropped and only 40 items were made for the entire construct. The results of the EFA and reliability analysis, which included all of the items, are discussed in subsection.

3.1. Exploratory factor analysis for validity

There were 40 items in PLC have been analyzed using EFA with a varimax rotation solution. However, the factor loading for some items is not under the factor from the EFA that has been done. In addition, there are also items with a factor loading value of less than 0.60. This is in line with the recommendation by Hair *et al.* [11], these items that are less than the recommended value have been eliminated. Table 1 to Table 3 shows the results of the EFA conducted for the construct validity of the instrument tested. The variance values for each factor, eigenvalues, Kaiser-Meyer Olkin (KMO) values, and Bartlett's Test of Sphericity values will be explained in detail.

Based on the KMO and Bartlett's tests are used to determine the appropriateness of items for factor analysis [19]. The KMO test determines whether the study sample is suitable for conducting factor analysis. Factor analysis in statistics is about identifying factors or underlying causes that can be used in the relationship between two or more variables. In order to determine the multicollinearity of the items in this instrument, the KMO test was also conducted. Multicollinearity is a value that determines whether there exists between two or more items to measure the same thing. In contrast, Bartlett's Test of Sphericity identifies whether there is a correlation between items or a statistical test to see the correlation between variables, giving the statistical probability that the correlation matrix has a significant correlation between at least some variables. Based on Table 1, the appropriateness test of the use of factor analysis and uniformity of items for the PLC construct was found to be suitable because the KMO value that measures the adequacy of the sample showed a value of 0.86, which is above the minimum recommended value of 0.60 [20]. According to previous studies [11], [21], a KMO value in the range of 0.80 is considered proud. The value of Bartlett's Test of Sphericity is significant ($p<0.05$), which supports the factorization of the correlation matrix and provides evidence that the variables are independent and suitable for factor analysis [11].

Next, the value of the total explained variance is the percentage of items important to the researcher to measure the study variables. Table 2 shows the analysis results of the PLC construct that the items with the variance contribution weighting value of each factor. The amount of explained variance' to measure this PLC construct is 68.99% which is adequate and acceptable because it exceeds the 50% minimum set [21]. The five factors explain as much as 68.99% of the total variance in the construct. The variance value is 39.50%, which is less than 50% showing that the data does not occur with common method bias [22]. The results found five main factors extracted in the PLC construct and correspond to the results in Table 2.

Table 1. Appropriateness test using factor analysis and uniformity of KMO items and Bartlett's test of PLC

KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy	-	.863
Bartlett's Test of Sphericity	Approx. Chi-square	4194.576
	Df	780
	Sig.	.000

Table 2. Total variants explained (n=102) for professional learning community instruments after EFA

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.799	39.497	39.497	15.799	39.497	39.497
2	5.967	14.916	54.414	5.967	14.916	54.414
3	2.510	6.274	60.687	2.510	6.274	60.687
4	1.759	4.396	65.084	1.759	4.396	65.084
5	1.562	3.904	68.988	1.562	3.904	68.988

A rotated component matrix with varimax rotation is conducted to show the correlation between the items and their factors after varimax rotation. All items from the five constructs of PLC were analyzed. Table 3 shows the weighting value of the rotated factor analysis for the PLC construct. A total of 40 items were constructed for the PLC construct after the factor analysis was tested, of the total, only 28 items met the conditions for PLC construct. On the other hand, as many as 12 items had to be dropped because they did not meet the conditions of having a factor weighting value of less than 0.60.

Refers to a rotated factor weighting analysis of the PLC construct, it is represented by the leadership sharing and supportive leadership, shared vision and mission, collective learning and application, personal practice sharing, and supporting conditions. Factor analysis for the sub-construct of leadership sharing and supportive leadership shows that there are 6 accepted items out of 8 constructed items, which are from Cl to C6, with factors ranging from .654 to .819. The analysis of the shared value and vision sub-construct shows 6 accepted items out of 10 constructed items from C7 to C12, with factor weighting values ranging from .626 to .835. Next, in factor analysis of collective learning sub-constructs and application, there are 5 items received from 6 constructed items from C13 to C17 with factor weighting values ranging from .617 to .751. Analysis of the sub-construct for personal practice sharing, there are 6 items received out of 8 constructed items which are from C18 to C23 with factor weighting values ranging from .606 to .842. Factor analysis of the supportive condition sub-construct shows that there are five accepted items out of eight constructed items which are from C24 to C28 with factors ranging from .606 to .797.

Table 3. Items of the professional learning community instrument after EFA

No. Item	Item	Factor loadings 1	2	3	4	5
1	Leadership sharing and supportive leadership					
C1	I was given the responsibility of leading school activities/programs.	.819				
C2	I am willing to attend activities/programs outside of representing the school.	.790				
C3	I got proactive support from the headmaster in carrying out the task.	.766				
C4	I got the trust to do the job from the headmaster.	.713				
C5	I am trusted to make decisions in carrying out tasks under my authority.	.698				
C6	My views are taken into account in matters related to school management.	.654				
2	Shared vision and mission					
C7	I work with colleagues to achieve the vision and mission of the school.		.835			
C8	I share the vision and mission to improve student performance.		.752			
C9	I adapt the teaching and learning approach according to the student's abilities.		.721			
C10	I support colleagues in improving the quality of teaching and learning.		.675			
C11	I plan activities/programs in line with the vision and mission of the school.		.659			
C12	I use the vision and mission of the school as a guide in the implementation of tasks in the school.		.626			
3	Collective learning and application					
C13	I make decisions together with colleagues in improving student achievement.			.751		
C14	I like to follow the teacher's professional development program.			.733		
C15	I followed a professionalism development program to improve the level of competence in teaching and learning.			.719		
C16	I collaborate with colleagues in improving the quality of teaching and learning.			.674		
C17	I apply the new knowledge I have through professional development activities in the classroom.			.617		
4	Personal practice sharing					
C18	I was given the opportunity to supervise colleagues.				.842	
C19	I provide constructive feedback on peer teaching.				.831	
C20	I share ideas with colleagues to improve the quality of teaching and learning.				.818	
C21	I share the report of the student's work for improvement.				.814	
C22	I was provided the opportunity to improve my professionalism.				.631	
C23	I share the results of student work to improve school performance.				.606	
5	Supporting conditions					
C24	I have a friendly relationship with my colleagues.					.773
C25	I received guidance from the headmaster in teaching and learning.					.704
C26	I receive guidance from colleagues in teaching and learning.					.697
C27	I am comfortable guiding other teachers in teaching and learning.					.606
C28	I am provided with sufficient facilities for teaching and learning.					.797

Factor loading (Fl) based on principal axis factoring and varimax (Fl<.60 removed)

3.2. Item analysis for reliability

The data obtained from the findings of the study were analyzed using IBM SPSS Statistic version 26 with the internal consistency method. The method used in measuring the reliability of a questionnaire instrument is the calculation of the reliability coefficient index with Cronbach's alpha. According to Mills and Airasian [23], reliability refers to the concept of consistency and stability of an instrument. Consistency means the same item has been tested repeatedly at different times and on the same subject, but the result score or answer given is still the same, while stability is freedom from error and able to produce consistent results [24].

Next, Cronbach's alpha coefficient index test was conducted to determine the reliability of this research instrument, and the sufficient and adequate alpha value of the index is between .00 and 1.00 [23]. While in another study [11], an alpha value between 0.7 and 0.8 is acceptable, and a lower alpha value means the reliability of the instrument is also lower. An alpha coefficient value of around .90 is considered "excellent", around .80 is "very good", and a value of around .50 to .79 is adequate. While values less than .50, it is considered unacceptable [24]. Table 4 shows Cronbach's alpha value coefficient index for the PLC constructs. The result for the element of leadership sharing and supportive leadership is .856, sharing vision and mission is .920, collective learning and application is .899, personal practice sharing is .953, and for supportive conditions analysis, Cronbach's alpha value index is .878. Overall, Cronbach's alpha value (α) for the whole instrument of PLC was 0.963. Thus, this shows that the items in the construct of PLC have high and consistent reliability values.

Table 4. Cronbach's alpha reliability index for professional learning community construct

Items	No. of items	Cronbach's alpha value
Leadership sharing and supportive leadership	6	.856
Sharing vision and mission	6	.920
Collective learning and application	5	.899
Personal practice sharing	6	.953
Supportive conditions	5	.878
Total	28	.963

4. DISCUSSION

Various empirical studies have been carried out related to the practice of PLC [25]–[27], in their research the implementation of PLC in schools has a positive impact on improving teacher performance and student achievement as well as improving teacher professionalism in the profession. However, there are studies related to the implementation of PLC at the school level that still need to be fully achieved and are being praised [28]. The statement is supported by a study carried out by the Daily School Management Division, MOE [29], that there are obstacles in implementing PLC in schools in Malaysia from 2011-2017. PLC is also one of the approaches in efforts to improve the performance of small schools in Malaysia [1]. Based on the statement, there is a need to develop an instrument that will be used to measure the level of PLC practice, especially in small schools.

Therefore, the PLC instrument was developed based on the School Professional Staffs as Learning Communities Questionnaire (SPSLCQ) developed by Hord [9]. Based on the SPSLCQ instrument was adapted to be used for research in small schools in Malaysia, and factor analysis was first conducted on the instrument to ensure the validity and reliability of the instrument to be used. High reliability and validity values show the high quality of the study instrument. Value on the score reliability explains that the instrument used is consistent and stable [18]. Consistency on the instrument is when the researcher receives almost the same score after conducting the test repeatedly and at different times [30]. Factor analysis is used to reach that level of excellence. Factor analysis is a statistical approach for identifying and reducing a large number of survey items into particular dimensions or constructs under the variables found in the study. This method is also a solution to remove items that overlap and have the same meaning [20]. Explain the relationship between all variables and all extracted factors in factor analysis [11]. Appropriate use of EFA requires intelligent and informed researchers to make decisions.

Therefore, an EFA analysis using the varimax rotation solution was done on the 40 PLC items. This research found that twelve items are within the required minimum value for the loading factor, which is 0.6. This situation required the researcher to drop items that did not reach the minimum factor fit value and made only 28 items accepted. According to the eigenvalue, all of the components recorded values of 1.56 or above, which is above 1.0. The eigenvalue is an indication that determines the formation of the required number of components in the actual research instrument [17]. It can be concluded that all items in the dimension have a high degree and that all study components should be maintained [11]. Next, look at the results of Bartlett's Test for Sphericity; the KMO value is 0.86, indicating that the sample size is suitable. The use of factor analysis is suitable if the KMO value is more than 0.70 [11], [31]. While the cumulative variance of the formation of EFA is 68.99%. It shows that these five components for 68.99% account for the variance change. This value is sufficient to determine the composition of the research instrument because it is limited, exceeding the minimum amount of 50% [11].

A reliability analysis makes up the second analysis. In addition to fulfilling the established objective criteria, high instrument reliability helps in the acquisition of more accurate data [17]. Findings show the reliability value of the components formed in the study instrument. Overall, the instrument's Cronbach's alpha value (α) is 0.94, which is very high. Five of the produced components also have a very high value,

which ranges from 0.86 to 0.95. The discovery shows that the item has very good and high reliability. To determine the reliability of this research instrument, a Cronbach alpha value between 0.7 and 0.8 is acceptable, and a lower Cronbach alpha value means the reliability of the instrument is also lower [11]. A Cronbach alpha coefficient value of around .90 is considered "excellent", around .80 is "very good", and a value of around .50 to .79 is adequate. While values less than .50, it is considered unacceptable [24]. As a result, this instrument has a high level of credibility and reliability, making it suitable for future research to be used in further studies to measure the level of PLC practice in small schools in Malaysia.

5. CONCLUSION

This study is intended to increase the contribution to the field of measurement in the development of PLC instruments, especially in the context of small schools in Malaysia. The results have successfully developed 28 items that can change the practice of PLC in Malaysia, especially in small schools. Based on the findings obtained in this research, it can be concluded that PLC instruments have been developed and can be used to determine PLC practices in schools. This is based on testing each item, which shows reliability. The results of the EFA analysis test have also proven that the five dimensions of PLC, with 28 items, have met the criteria of a good and reliable instrument, and have a good level of content validity and construct validity. Next, the KMO values obtained in this study show suitable items according to their dimensions. The findings of this study are also supported by Cronbach's alpha value of 0.93 for this PLC instrument. This finding explains that this PLC instrument has excellent consistency and high reliability.

In conclusion, the findings of this study have produced a PLC instrument, especially in Malaysia. Collaborative practice strategies implemented in schools, especially in small schools, can be implemented using PLC instruments that have been developed. To measure the level of PLC practice in small schools, decision-makers can use valid instruments. According to the excellent reliability and validity of the instrument, it is recommended to be used as the best instrument to measure PLC practices in Malaysian schools. This instrument can also be used as a reference and guide for the development of assessment instruments related to collaborative approaches and continuous expansion in the future.

REFERENCES

[1] Ministry of Education Malaysia, "Malaysia Education Blueprint 2013-2025." 2012.
[2] Ministry of Education Malaysia, "School Data in Malaysia." 2021.
[3] M. M. Awang, A. R. Ahmad, and B. A. Allang, "Rural education: How successful low-income students received socio-educational supports from families, school teachers and peers?" *International Journal of Academic Research in Progressive Education and Development*, vol. 10, no. 1, pp. 311–320, Feb. 2020, doi: 10.6007/IJARPED/v10-i1/8988.
[4] A. N. Mansor *et al*., "Challenges and strategies in managing small schools: A case study in Perak, Malaysia," *Educational Management Administration & Leadership*, vol. 50, no. 4, pp. 694–710, Jul. 2022, doi: 10.1177/1741143220942517.
[5] P. J. Moore, "Academic achievement," *Educational Psychology*, vol. 39, no. 8, pp. 981–983, Sep. 2019, doi: 10.1080/01443410.2019.1643971.
[6] F. Z. Tan and G. O. Olaore, "Effect of organizational learning and effectiveness on the operations, employees productivity and management performance," *Vilakshan - XIMB Journal of Management*, vol. 19, no. 2, pp. 110–127, Jul. 2022, doi: 10.1108/XJM-09-2020-0122.
[7] U. L. Chanani and U. B. Wibowo, "A learning culture and continuous learning for a learning organization," *KnE Social Sciences*, 2019, doi: 10.18502/kss.v3i17.4686.
[8] Ministry of Education Malaysia, "Professional Learning Community Kit." 2019.
[9] S. M. Hord, *Professional learning communities: communities of continuous inquiry and improvement*. Austin, Texas: Southwest Educational Development Laboratory, 1997.
[10] R. C. MacCallum, K. F. Widaman, K. J. Preacher, and S. Hong, "Sample size in factor analysis: The role of model error," *Multivariate Behavioral Research*, vol. 36, no. 4, pp. 611–637, Oct. 2001, doi: 10.1207/S15327906MBR3604_06.
[11] J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate data analysis*, 8th ed. Andover, Hampshire: Cengage Learning, EMEA, 2018.
[12] P. M. Senge, *The fifth discipline, the art and practice of the learning organization*. New York, NY: Doubleday, 1990.
[13] Z. B. Farimani and N. N. Shahri, "Reaching self-actualization in education: Construction and validation of a hierarchical scale," *Journal of Language Teaching and Research*, vol. 11, no. 4, p. 623, Jul. 2020, doi: 10.17507/jltr.1104.14.
[14] C. Waltz, O. L. Strickland, and E. R. Lenz, *Measurement in nursing and health research*. New York: Springer Publishing, 2016.
[15] E. Babakus and W. G. Mangold, "Adapting the SERVQUAL scale to hospital services: an empirical investigation," *Health Services Research*, vol. 26, no. 6, pp. 767–86, 1992.
[16] S. B. Sachdev and V. Verma, Harsh, "Relative importance of service quality," *Journal of Service Research*, vol. 4, no. 1, pp. 93–116, 2004, doi: 10.1300/J090v15n02_06.
[17] John W. Creswell and John D. Creswell, *Research design: Qualitative, quantitative, and mixed methods approaches*, 5th ed. Los Angeles: SAGE, 2018.
[18] J. Ali Hussin and M. S. Z. Noor, *Research methodology & SPSS data analysis*. Kedah: UUM Press, 2014.
[19] Z. Awang, H. Muda, F. Salleh, M. Hoque, and K. Jusoff, "Social business efficiency: Instruments development and validation procedure using structural equation modelling," *International Business Management*, vol. 11, no. 1, pp. 222–231, 2017, doi: 10.3923/ibm.2017.222.231.
[20] M. Hair, J.F. Jr, hult, G.T.M., Ringle, C. & Sarstedt, *A primer on partial least squares structural equation modeling (PLS-SEM)*, 2nd Ed. CA: Sage Publications Inc. Thousand Oaks, 2017.
[21] M. S. Bartlett, "A Note on the Multiplying Factors for Various χ 2 Approximations," *Journal of the Royal Statistical Society: Series B (Methodological)*, vol. 16, no. 2, pp. 296–298, Jul. 1954, doi: 10.1111/j.2517-6161.1954.tb00174.x.

[22] L. Cohen, L. Manion, and K. Morrison, *Research methods in education*. London: Routledge, 2018. doi: 10.4324/9780203029053.
[23] G. E. M. Mills and P. Airasian, *Educational research competencies for analysis and applications*, 10th ed. Toronto: Pearson, 2012.
[24] R. B. Kline, *Principles and practice of structural equation modeling*, 5th ed. New York: The Guilford Press, 2016.
[25] S. N. Ismail, W. R. Wan Yakob, N. Mustapai, and T. R. Tuan Mat, "Professional learning community (PLC) and teacher motivation at secondary school in Jeli district," *International Journal of Education, Psychology and Counseling*, vol. 6, no. 42, pp. 14–29, Sep. 2021, doi: 10.35631/IJEPC.642002.
[26] M. F. Yaakob, "The construction of a model of school culture structure, professional learning community and Malaysian national school teacher work competence," Universiti Pendidikan Sultan Idris, 2017.
[27] P. Murat, "Effects of lesson study on science teacher candidates teaching efficacies," *Educational Research and Reviews*, vol. 9, no. 6, pp. 164–172, Mar. 2014, doi: 10.5897/ERR2013.1700.
[28] A. R. Idris, H. Ahmad, S. Hussin, S. Ghavifekr, and M. S. Ibrahim, "Strategic analysis of education policy," Universiti Malaya Publication, 2014.
[29] Ministry of Education Malaysia, "PLC Cultivation Report." 2018.
[30] M. Zulkepli, I. Sipan, and J. D. Jibril, "An exploratory factor analysis and reliability analysis for green affordable housing criteria instrument," *International Journal of Real Estate Studies*, vol. 11, no. 4, pp. 9–21, 2017.
[31] U. Sekaran and R. Bougie, *Research methods for business: A skill building approach*, 7th ed. Chichester: West Sussex: John Wiley & Sons Ltd, 2016. doi: 10.1016/0024-6301(93)90168-f.

BIOGRAPHIES OF AUTHORS

Mohd Norlizam Mohd Razali was graduated with the master of educational measurement from Sultan Idris Education University. He is currently pursuing his PhD studies at Universiti Kebangsaan Malaysia which is in the field of Educational Administration. His previous master's degree and also his PhD were fully sponsored by the Malaysian Ministry of Education. His research in the field of leadership, studies on the impact of culturally responsive leadership practices on professional learning communities and teacher competence. He can be reached by email: norlizam.razali@gmail.com.

Aida Hanim A. Hamid obtained a master's degree in educational management, at the University of Nottingham (Malaysia Campus) in 2012 and obtained a PhD at the University of Bristol, United Kingdom in 2017 in the field of education policy. She is a senior lecturer at the Center for Leadership and Education Policy Studies, Universiti Kebangsaan Malaysia. She is also the Director of the Industry and Community Network Center (I-KOM), Universiti Kebangsaan Malaysia. Her areas of expertise are educational administration, educational leadership, teacher professionalism, teaching and learning, and teaching pedagogy. She can be contacted via email: aidahanim@ukm.edu.my.

Bity Salwana Alias obtained a Diploma in International Trade from the Sultan Zainal Abidin College of Religion, a Bachelor's Degree in Business Administration from the International Islamic University Malaysia, a Postgraduate Teaching Diploma from the Technical College, a Master's in Educational Administration from Universiti Kebangsaan Malaysia, and a Doctorate of Philosophy also from the Universiti Kebangsaan Malaysia. Experienced in teaching Commerce, Principles of Accounts, and Integrated Life Skills while serving as a teacher and teaching management and educational leadership courses currently at Universiti Kebangsaan Malaysia as a member of the Center for Leadership and Education Policy Studies. The study specializes in the field of administration and noble values including unity and integrity. She can be contacted via email: bity@ukm.edu.my.