DETERMINING THE KEY FACTORS OF SCHOOL-BASED PROFESSIONAL LEARNING LEADER ROLE IN MALAYSIAN CONTEXT

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Abstract: School administrators should play their vital roles in implementing effective school-based professional learning which can give deep impact on teacher development. Researches regarding school-based professional learning shows that there are four major roles played by school administrator; builder, designer, implementer and reflective leader in influencingprofessional learning. Thus, a school-based professional learning leader roles model which fit the Malaysian education setting should be identified.The purpose of this paper is to investigate the key factors of school-based professional learning leaderroles in Malaysian setting. This study is conducted at 60 secondary schools in Malaysia where the information is gathered from two phases of data collections by using multi-stage cluster sampling technique. The analysis has been done through three sets of data. The exploratory factor analysis and confirmatory factor analysis are used to obtain construct validity. The Cronbach Alpha of the items is .904, meanwhile for each factor developed ranged from .60 to .82. Data from the survey is used to test and confirm the four key factors expressed in the proposed model. The findings indicate that professional learning leader roles modelhas highly significant effect on the four underlying dimensions tested; chi-square per degree of freedom ratio (x^2/df) = 3.66,Comparative Fit Index (CFI) = .99, Goodness of Fit Index (GFI) = .99, Adjusted Goodness of Fit Index (AGFI) = .95and Root Mean Square Error of Approximation (RMSEA) = .08. The source of data collected is Malaysia hence the results may not easily generalized to other areas or countries. However, the findings are valuable for school-based professional learning developers`, teachers and teacher educator references, especially for those whose circumstances are similar to those in Malaysia.

Keywords: School-based professional learning leader roles model, Teacher development, Structural equation modeling.

Introduction

Research regarding school-based professional learning shows that there are four major roles played by school administrator; builder, designer, implementer and reflective leader (Lindstrom & Speck, 2004; DuFour&Berkey 1995; Kose, 2009). This aspect became more important when

Ministry of Education (MOE) through its master plan `*Konsep Pengoperasian Latihan Peningkatan Profesionalisme Bidang Pengajaran dan Pembelajaran Bagi Pegawai Perkhidmatan Pendidikan*`, has implemented school-based professional learning to all school teachers in Malaysian context. This plan emphasis on site-based professional learning and let manager manage concept which has been governed by respective school administrators (MOE, 2008). By instilling this plan, it showed how serious the MOE in enhancing professional development management in schools.According to Persico (2001), Amin (2005), Leithwood, Day, Sammons, Harris and Hopkins (2006), Wei, Darling-Hammond, Andree, Richardson and Orphanos (2009) and OECD (2010) studies shown that school administrator roles influenced professional development in school. This shown that school leader should play vital roles in enhancing school-based professional learning.

According MOE (2007), as instructional leaders, they should ensure the implementation of professional development in their respective school congruence with these elements; activities planned must be accordance with current school needs, planned and implemented by the teachers and school leaders. Therefore, the school-based professional learning management depends highly on the roles played by all school leaders. The findings of this report is also supported by a study carried by Muhammad Kamarul Kabilan Abdulah and Abdul Rashid Kamarul (2009). They found that school administrators should give serious attention to the teachers` commitment to improve their knowledge and skills throughout their careers. Furthermore, if various professional learning activities were held at the schools, it will give a better impact on teachers` practices. These showed that school administrators should play their vital roles in implementing effective school-based professional learning which can give deep impact on teachers development. Thus, a school-based professional learning leader roles model which fit the Malaysian education setting should be identified.

Lindstrom and Speck (2004) and Zepeda (2008) emphasis that, professional learning leaders` roles are concerned with certain roles that can lead to organizational culture changes which can create a professional learning community. Studies conducted by Amin Senin (2005), Leithwoodet, al.(2006), and Weiet, al.(2009) regarding teachers` perspective showed that school administrator roles have influenced the professional learning activities in school. This showed that how important the school leaders role in enhancing school-based professional learning activities. DuFour and Berkey (1995), Lindstrom and Speck (2004) and Ontario Principal`s Council (2009) have identified four major leader roles which affect school-based professional learning: builder, designer, implementer and reflective leader, such roles have been adopted in related leader roles studies such as Kose (2009). Detailed was discussed below:

i. The school leader as builder

This role emphasis on preparation of the school leader to improve the school capacity by using professional learning as the change agent in practices and school improvement. In addition, to achieve the vision of improved student achievement.

ii. The school leader as designer

The role as designer was to plan the professional learning activities. It was essential for the leader to understand the effective professional learning components and made decision based on the school needs and context.

iii. The school leader as implementer

The role as implementer is emphasis more on taking actions or making changes. School leader should know how and when to initiate the most appropriate

changes as well as work in collaborative in focusing all actions to achieve desired goals.

iv. The school leader as reflective leader

Reflective leader must model a continuous process of inquiry and reflection on actions. This role emphasis on making judgments based on data and feedbacks from the various source regarding actions taken to evaluate school development.

Thus, according to the above literature, professional learning leader roles can be classified into four dimensions as suggested by pervious literature: builder, designer, implementer and reflective leader, which are used in our model.

Research Method and Results

Questionnaire Develepment

The questionnaire is composed of four factors including: builder, designer, implementer and reflective leader. The questionnaire items were answered using a four-point Likert scale anchoring at 1, 2, 3, and 4 (strongly disagree, disagree, agree, strongly agree). Furthermore, this four-point scale (without central tendency) is suitable to use in East Asian respondents, where the `doctrine of mean` is advocated in the culture (Cohen, Manion & Morrison, 2007). The instrument used has been adopted from Lindstrom and Speck (2004) and Speck and Knipe (2005). Based on the literature review (Lindstrom & Speck, 2004; Speck & Knipe, 2005; Kose, 2009; Ontario Principal`s Council, 2009), four major constructs were considered, namely builder, designer, implementer, reflective leader.

Sampling

The data used in this research consists of 2 batches of questionnaires responses from participants in 60 regular secondary schools in Malaysia. There are two phase of data collections. First set of data was obtained from 19 regular secondary schools in Batang Padang district in Perak. This set of data was used in preliminary study as to perform exploratory factor analysis. A total of 190 survey forms were circulated, of which 166 were valid for analysis (Mahaliza Mansor & Norlia Mat Norwani, 2010). While, the second batch of data was obtained from 41 regular secondary schools in Malaysia. A multistage cluster sampling technique has been used in this phase of data collection. This set of data was used to perform confirmatory factor analysis. The number of the population is 146,513 (MOE, 2009), it was expected that the sample would compromise 384 teachers (Cohenet al, 2007) from 41 schools. A total of 900 survey forms were circulated. The 780 surveys were return, 348 were used for measurement models analysis, meanwhile 372 were used to runconfirmatory factor analysis.

Validity and Reliability

The Cronbach Alpha coefficients were used to measures the internal consistency of these scales (Nunnally & Bernstein, 1994). In this study, the constructs which had Cronbach Alpha coefficients greater than .70 have been retained for further analysis (Hair, Black, Babin, Anderson & Tatham, 2010; Hancock & Muller, 2010). Furthermore, measures with item-to-total correlation larger than 0.3 are considered to have criterion validity (Hair et al, 2010). The item-to-total correlation of each measure was more than .3, we consider the criterion validity of each scale to be satisfactory.

The original questionnaire was translated into Malay language twice by experts using the `back technique`(Mahaliza Mansor, Norlia Mat Norwani & Jamal @ Nordin Yunus 2010). Then, the questionnaires have been administered to six trained teachers to identify if there were any confusion regarding the items and record it in the space provided for improvements or been dropped out (Johnson & Christensen, 2008; Flowers, 2006). A scale of 1 to 10 is used to determine the validity coefficient for each item. According to Tuckman and Waheed (1981) in Sidek Mohd Noah and Jamaludin Ahmad (2005) if the total of the score obtained from the experts is 70% or above, it means that the item has a high score for the content validity aspect. Otherwise the item will be dropped from the questionnaires (Mahaliza Mansor, Norlia Mat Norwani & Shahril @ Charil Marzuki, 2011). The results of content validity are presented in Table 1 below.

Table 1: Content validity scores

Panel	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Cumulative Score
Percentage (%)	92.72	91.51	88.48	82.42	82.42	80.00	85.57

Meanwhile, to ensure the instrument has reasonable construct validity, both exploratory and confirmatory factor analyses were used. The exploratory factor analysis (EFA) through orthogonal rotation with varimax method had been used. The EFA applied the following rules as suggested by Hair et al. (2010) and Tabachnick and Fidell (2007):

i. Bartlett's Test of Sphericity had to be significant ($p < .05$);
ii. Kaiser-Meyer-Olkin measure of sampling index $\geq .5$;
iii. Eigenvalue > 1;
iv. Items with the factor loading > .5 were retained;
v. Factors building were based on school-based professional learning leader role theory and previous studies.

The results of exploratory factor analysis are presented in Table 2. Two constructs have been excluded after the analysis, namely observation and assessment and involvement in improvement process.

Table 2: Exploratory factor analysis and internal consistency values for the questionnaires

Construct	Factor	Number of item per construct	Cumulative percentage	Cronbach's α
PLLR	Builder	3	55.61	.828
	Designer	5		.642
	Implementer	6		.781
	Reflective leader	5		.725

Source: Mahaliza Mansor (2013)

The confirmatory factor analysis was used test the existence of unidimensionality and stability of the four factor from the construct, nineteen item SPLI using AMOS Version 21. We analyzed this hypothesized four-factor model with all nineteen items as indicators of the variable. The parameters were estimated using maximum likelihood (Mahaliza Mansor et al, 2011). This

approach incorporates both observed and latent variables. Multiple indices provided a comprehensive evaluation of model fit (Hu & Bentler, 1999). We examined chi-square per degree of freedom ratio (x^2/df), Comparative Fit Index (CFI), Incremental Fit Index (IFI),Tucker-Lewis Fit Index (TLI), Adjusted Goodness of Fit Index (AGFI), Goodness of Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA). These indices were used to evaluate the goodness-of-fit of the model that fit the data (Bryne, 2010; Schumacker & Lomax, 2004). x^2/df ratio value of less than 3 and value of .90 for CFI, AGFI, TLI and GFI have been use as a lower cutoff value of the acceptable fit (Nunnally & Bernstein, 1994; Schumacker & Lomax, 2004). In addition, the RMSEA value of less than .06 indicate a good fit, while the value as high as .80 indicate a reasonable fit (Hu & Bentler, 1999). The results of confirmatory factor analysis of four-factor model is presented in Table 3 below.

Table 3: Summary of fit indices from confirmatory factor analysis and internal consistency value

Model	x^2/df	GFI	IFI	CFI	TLI	RMSEA	Cronbach's α
Unmodified hypothesized four-factor model	2.198	.91	.92	.93	.92	.06	.94

The analytical results of the AMOS CFA model reveal a satisfactory fit for our sample data. The fit indices (x^2/df = 2.45, CFI = .93, IFI = .92, GFI = .91, TLI = .92 and RMSEA = .06) indicates the CFA model meets recommended levels. Thus represents a satisfactory fit for the sample data collected. The x^2/df ratio also indicates a reasonable fit at .06. As the conclusion, the proposed model shows the existence of unidimensionality of each factor and stability of the 19 items.The convergent validity index of each factor is ranged between .38 to .74 and the Cronbach's α of overall items is .94, meanwhile the internal consistency values for each factor are shown in Table 4.

Table 4: Convergent validity and internal consistency values for the SPLI factors

Factor	**Number of item**	**Convergent validity (r)**	**Cronbach's α**
PLLR	19	.38 - .74	.90
Designer	5	.56 - .74	.81
Builder	3	.38 - .74	.60
Implementer	6	.60 - .72	.75
Reflective leader	5	.62 - .68	.78

Source: Mahaliza Mansor (2013)

Conclusion

The purpose of this study is to investigate the key factors of school-based professional learning leader rolemodel used to measure secondary teachers` perception in Malaysian setting. This study is based on school-based professional leaning theory and used statistical approach to identify 19 items in developing the model. Results from these two phases of study suggested that the model consist of four key factorsnamely Designer, Builder, Implementer and Reflective Leader. This has been proven with the fit indices of CFA model which shown a satisfactory fit

for the sample data collected. The constructs shown the good internal consistency values to measure teachers` perception toward school-based professional learning leader`s model. The overall internal consistency value is .940, meanwhile the values of each constructs range from .663 to .915. Therefore, these items are suitable to use in general research.

This study has a few weakness, such as the comparison of the values of internal consistency among the studies cannot be done because less of reviewed inventory. Secondly, the sample only consisted of secondary school; therefore the next study should be extended to primary school teachers. Further study also should be explored on the perception of the teachers on the existence of other professional learning models. However, hopefully the findings are valuable for the researchers, school-based professional learning developers` and teacher educators references, who are interested more in exploring school-based professional learning.

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