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The power of leadership for learning: Developing niche-Malaysian teachers' leadership competency model

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Abstract

Good teachers are learners and leaders, not only in their own classroom but in relation to their colleagues and their communities. Thus, the main purpose of this study was to develop an empirically substantiated Teachers' Leadership Competency Model (TLCM) as well as to identify Teachers' Leadership Competencies (TLC) that contribute to development of teacher leaders in Malaysian schools. The Structural Equation Modelling using AMOS Version 22 was applied to test the model. Exploratory Factor Analysis was utilized to identify the underpinning factors while Confirmatory Factor Analysis was exerted to examine the structural model. The findings indicate that teacher leaders' roles positively and continuously influences teachers' leadership competencies which will enhance teachers' commitment to change their roles as classroom-based to school-based teacher leaders. This also implies that the teacher leaders' role is a critical component in shifting the paradigm of teachers' isolation to collaboration in Malaysian classrooms setting. The findings of TLCM will also benefit educational practitioners in designing Teacher Education Model for Malaysia.

Keywords: Teachers' Leadership Competencies, Structural Equation Modelling, Exploratory Factor Analysis, Confirmatory Factor Analysis

1. INTRODUCTION

Leadership is a commonly utilized word with a multitude of definitions for distinct individual. It always serve the interests of those who become, or choose to be followers. Learning too is a commonsensical terminology. It occurs in daily exchange between parents and children, for instance, children will have to do what they have been told, as well as teachers and students in daily classroom instructional practices. Simply state, learning is all around us and in every action we take.

Yet, one may failed to perceive ways in which leadership and learning are interconnected without taking a new insight of these two terminologies. Insight refers to the act of taking a new look, a new way of seeing, and a new way of knowing. In other words, we must learn to know what we see rather than seeing what we already know (Heschel, 1962). Educators, for instance, need to take a second look at what they believe to be true, which take into consideration two complementary elements, i.e. the conceptual and the practical. Therefore, teachers need to bring conceptual knowledge and the practical knowledge closer together. In other words, they need to carefully identify structures and routines that doesn't really help and in contrast, contribute to constraint in learning among

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children, which also inhibit the learning of those who teach and lead them. Thus, this is where leadership comes into its own.

Leadership is strengthened when it takes into consideration the three linear but fundamentally essential ideas, i.e. Connect, Extend, and Challenge. In schools, the true measure of leadership for learning will highly depend on the effectiveness of leadership in the classrooms. All of what teachers do in a classroom is infused with knowing and feeling. They must be able to connect what is already known and connect them with what children know and bring them into the classroom, i.e. prior knowledge, prior feelings, prior skills and expertise. Likewise, teaching require teachers to extend their knowledge and their repertoire of skills. As they become competent and more skilful practitioners, they have a moral and professional obligation to challenge their practice and to be open to challenge.

This is supported by the work of Andrews, Crowther, Hann and McMaster (2002: 25) who have developed a "Teachers As Leaders" framework which highlights the importance of two key factors focusing on the leadership of teachers, namely the values-based and power-based of teachers' instructional practices and their ability to create new meaning in the lives of people in schools and communities. They also make an important distinction between teachers as leaders in a specialized area such as pedagogical and (subject) discipline leadership and leadership which contributes to whole school reform and improvement. This focus on school improvement was central to recent Federal Government trial project of a shared leadership approach in schools in Australia (Chesterton & Duignan, 2004).

In fact, the norm of such a shared approach to leadership requires teachers to take on leadership responsibilities 'in parallel' with the principal and the executive, within a whole school improvement framework (Crowther et al, 2002a & 2002b). Similarly, Lashway, 2003; Pearce and Sims, 2002; Harris, 2002; Spillane, Halverson and Diamond, 2001; and Elmore, 2000 have explored the nature of shared leadership to be widely distributed across key stakeholders, especially teachers.

Elmore (2000), too, argued that leadership of schools is beyond the capacity of any one person and needs to be 'distributed' to incorporate the contours of expertise within a culture that provides coherence, guidance and direction for instructional practice. Elmore (2000), cautioned, however, that collaborative work by teachers will not, alone, lead to changed teacher practices and improved learning among students. He believes that to engage teachers productively in leadership there must be a whole-school focus on change and improvement.

Indeed, leading change from the classroom is closely linked with the development of teacher leaders. Development of teacher leaders is considered to be the significant outcome of teachers' commitment to change from the classrooms. In this regard, it is a privilege for teacher leaders to walk with principals who portray developmental leadership behaviours in order to be competent teacher leaders. In general, teacher leaders therefore need to understand exactly what they are leading, clearly communicate their intentions for teachers' leadership while actively building connections, coherence and alignment across teachers' leadership throughout the classroom. This alignment is best achieved through identifying a few clear priorities for teachers' leadership in enhancing students' academic performance and ensuring that these are embraced, embedded and reinforced (Fullan, 2010).

With respect to school improvement and change, Harris (2002, p.2) argued that there is an extensive body of research, which confirms that strong collegial relationship, mutual trust, support and a focus on enquiry are crucial for effective improvement. There is evidence to suggest that student outcomes are more likely to improve where leadership sources are distributed throughout the school and where teachers are empowered in decision related to instructional practices and assessment (Silins & Mulford, 2002).

Thus, this study intends to propose a model to investigate the relationships among the discussed variables using structural equation modelling. The research participants were from 58 high performing secondary schools in Malaysia. The study particularly targeted at the trained teachers and explored their perception of the actual condition of teachers' leadership competencies, principal developmental leadership behaviour and the teachers' commitment to change in their respective schools.

2. CONCEPTUAL FRAMEWORK AND THEORETICAL FOUNDATION OF THE STUDY

This section reviews the conceptual framework to structure the content for the whole study based on literature and personal experience, develop as participants' views, gather issues to analyse, assess and refine the research goals; develops realistic and relevant research questions; selects appropriate methods; and justifies the concerned research.

The conceptual framework of the current study was intended to help understand and explain whether Teachers' Leadership Competencies (TLC) is a multidimensional concept by identifying the critical leadership competencies that facilitate school change initiatives and how these perceived competencies influence Principals' Developmental Leadership Behaviour (PDLB) and Teachers' Commitment to Change (TCC). Briefly, the study was confined to three latent variables and thirteen of their respective indicators are chosen to estimate the variables. Details are as discussed below:

2.1.1 Teachers' Leadership Competencies (TLC)

Leadership competencies in this study refers to the leadership values, knowledge, and skills that demonstrate excellent performance, required for teachers in influencing colleagues to gear towards the achievement of organizational goals, particularly in the process of school change initiatives. According to Roland Barth (2001), "a teacher leader is someone who has positive influence on the school and in the classroom" (p.88). Therefore, they need to grab the opportunity to polish their leadership skills through varieties of leadership activities in school level. Hence, involvement in various school-based leadership activities will lead the teachers to leadership roles in schools. Teachers' leadership roles build the entire school's capacity to improve regardless of whether these roles are assigned formally or shared informally. Thus, Teachers' Leadership Competencies (TLC) in this study is measured by five indicators:

2.1.1 Facilitating Improvement and Establishing Standards (FIES)

This leadership competency associated with setting competencies to help facilitate instructional improvements and student learning, engage in establishing standards for student behaviour and school-wide classroom management policies, learns from one's own practice, as well as practicing life-long learning.

2.1.2 Modelling Leadership Attributes and Skills (MLAS)

This leadership competency focuses on becoming a role model due to possessions of leadership attributes and skills displayed by leadership teams involve in leadership talent displayed.

2.1.3 Participating in Organizational Development (POD)

This leadership competency associated with teachers' involvement in school change initiatives, assisting principals to manage and administrate the school, and utilize relevant data in decision-making.

2.1.4 Fostering a Collaborative Culture (FCC)

This leadership competency focuses on nurturing a life-long learning and fostering reflective practices in order to support teachers' collaboration and student learning and to enhance knowledge and ideas with other educators from other learning institution for best results.

2.1.5 Performing as Referral Leader (PRL)

This leadership competency focuses on teacher leaders becoming a referral leader which was reflected through own willingness to go above and beyond own prescribed roles, having impact in the area of expertise and demonstrating high ethical standard to realize change initiatives in Malaysian schools.

Thus, the newly developed Teachers' Leadership Competencies (TLC) Model can be categorized into five dimensions or guiding principles, i.e. Facilitating Improvement and Establishing Standards (FIES), Modelling Leadership Attributes and Skills (MLAS), Participating in Organizational Development (POD), Fostering a Collaborative Culture (FCC), and Performing as Referral Leader (PRL).

2.2 Principals' Developmental Leadership Behaviour (PDLB)

2.2.1 Focused

This developmental leadership behaviour refers to the perception of the extent to which the leaders are able to influence subordinates (i.e. teachers) to hold the responsibilities in order to strive for improved instruction and student learning.

2.2.2 Supportive

This developmental leadership behaviour reflects the perception of the extent to which the leaders (principals) are supportive of the leadership culture to be implemented in school in order to achieve school's goals. It requires principals' to give support with a certain level of administrative and persuasive competency, which will later lead to the success of teacher leadership practices in Malaysian classrooms.

2.2.3 Developer

This developmental leadership behaviour refers to the perception of organizational leader who has primary responsibility to develop his or her subordinates in several ways, particularly to become junior leaders.

2.2.4 Competitive

This developmental leadership behaviour refers to the perception that leaders have the capability to inspire and empower subordinates to struggle towards the organization change effort, manage change effectively, capture global opportunities, and address the upcoming organizational challenges in order to achieve organization success.

2.2.5 Charismatic

This developmental leadership behaviour refers to the perception that acknowledge a good leader or subordinate who possesses certain intrinsic qualities or dispositions and personal characteristics which fosters improvement and professional development.

2.3 Teachers' Commitment to Change (TCC)

Commitment is defined as a power that binds an individual to a course of action of relevance to one or more intentions. It may also include *personal goals*, *capacity beliefs* and *context beliefs* that describe an individual level of commitment to change initiatives.

2.3.1 Personal Goals

This type of commitment refers to teachers' commitment to common goal as opposed to personal goals which have direct effect and positive influence on their own personal goals, situational beliefs, and their ability beliefs on school reform or change initiatives process.

2.3.2 Capacity Beliefs

This type of commitment refers to the psychological states that teachers must believe themselves capable of accomplishing school-based reform or change initiatives. It may include teachers' self-efficacy, self-confidence, academic self-concept, and aspects of self-esteem.

2.3.3 Context Beliefs

This type of commitment refers to the teachers' belief about whether the school administration will actually provide the professional development or other resources needed to successfully implement a change in their instructional practices.

3. RESEARCH DESIGN

The resign design is shown in Figure 1. The relevant hypotheses of the model and the questionnaire design are presented below.

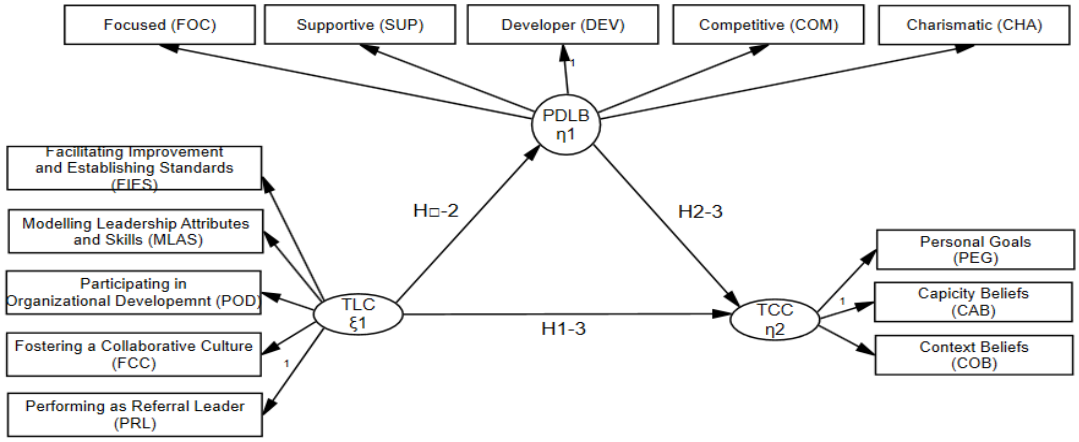

Fig. 1. Research Model for Structural Equation Modelling Analysis

Note:
H□-2. Teachers' Leadership Competencies is significantly related to Principals' Developmental Leadership Behaviour.
H1-3. Teachers' Leadership Competencies is significantly related to Teachers' Commitment to Change.
H2-3. Principals' Developmental Leadership Behaviour is significantly related to Teachers' Commitment to Change.

4. QUESTIONNAIRE DESIGN

A set of 10-point Likert scale [ranging from 1 = "Least Agreeable" (LA) to 10 = "Most Agreeable" (MA)] questionnaire, so-called Niche-Malaysian Leadership Commitment Scale (NMLCS) was administered to the samples. According to Zainuddin Awang (2014), this scale is suitable to be utilized in Structural Equation Modelling (SEM) as the finding will be more accurate in determining the convergent and discriminant validity of a newly proposed model.

The questionnaire consists of four different parts, i.e. Part I on Demographic of Respondents; Part II on Teachers' Leadership Competencies Scale (TLCS) with thirty-one items; Part III on Principals' Developmental Leadership Behaviour Scale (PDLBS) with twenty-one items; and Part IV on Teachers' Commitment to Change Scale (TCCS) with twelve items. All and all, the NMLCS consists of sixty-four items which may address an early indication of the importance of teachers' leadership in Malaysian classrooms.

In fact, the NMLCS was newly developed by the researchers based on literature review and comprehensive discussions with a group of school teachers which aims to produce quality teachers for the future. This newly developed TLCS was constructed based on five guiding principles, i.e. (1) Facilitating Improvement and Establishing Standards (FIES) with seven items; (2) Modelling Leadership Attributes and Skills (MLAS) with seven items; (3) Participating in the Organizational Development (POD) with seven items; (4) Fostering a Collaborative Culture (FCC) with six items; and (5) Performing as Referral Leader (PRL) with seven items.

The PDLBS, on the other hand, was adapted from the Effective Developmental Leadership Trait Instrument (EDLBI) developed by Wilson (2004). It consists of five different constructs, i.e. (1) Focused (FOC) with four items; (2) Supportive (SUP) with four items; (3) Competitive (COM) with five items; (4) Developer (DEV) with five items; and (5) Charismatic (CHA) with seven items.

Similarly, the TCCS was also adapted from other existing scale, namely the Three Revised Components of Teachers' Commitment to Change Scale developed by Ford (1992) and Bandura (1986). The three revised components also refer to the three constructs of TCCS utilized in this study, i.e. (1) Personal Goals (PEG); (2) Capacity Beliefs (CAB); and (3) Contexts Beliefs (COB) with four items each.

Additionally, the origin version of Niche Malaysian Leadership Commitment Scale (NMLCS) which was prepared in English were then translated into Malay language since most of the samples were non-English speakers. The NMLCS was then undergone back-translation to English language again. This 'back technique' was significantly important (Frazer & Lawley, 2000) in order to enable the respondents to give their genuine responds,

as well as to avoid cultural differences which may confound the results (Salciuviene, Auruskeviciene, & Lydeka, 2005).

Fortunately, the translation process had to undergone two steps in order to establish its validity. First, the questionnaire was translated into Malay by an accredited bilingual lecturer and language expert from Faculty of Language and Communication, Sultan Idris Education University, who were proficient in both English and Malay Language.

Next, the Malay version of the questionnaire was then undergone back-translation into the English version by another accredited bilingual lecturer, whose mother-tongue was Malay. This lecturer also from the Department of Language and Communication at Sultan Idris Education University.

Meanwhile, to ensure the NMLCS has reasonable construct validity, both statistical analysis procedures, i.e. Exploratory and Confirmatory Factor Analysis were conducted.

5. ANALYSIS AND RESULTS

5.1 Sampling

The data utilized in this research was collected based on two phases particularly from 51 high performing secondary schools (HPSS) in Malaysia which comprises of 23 Daily Secondary Schools (DSS), 19 Fully Residential Secondary Schools (FRSS), and 9 from Religious Secondary Schools (RSS). The first set of data was utilized for the purpose of preliminary study which involve 13 distinct high performing secondary schools (HPSS) in Malaysia. Simply state, the data will be utilized to perform Confirmatory Factor Analysis (CFA). The samples were randomly selected from 5 Daily Secondary Schools (DSS), 6 Fully Residential Secondary Schools (FRSS), and 2 Religious Secondary School (RSS) in Malaysia. 17 sets of questionnaires were distributed to each of these 13 high performing secondary schools. A total of 221 set of questionnaires were circulated, of which 210 questionnaires were return and 208 were valid for analysis.

While, the second set of data was also obtained from the three types of high performing secondary schools (HPSS) in Malaysia, which consists of 18 sets from Daily Secondary Schools (DSS), 13 sets from Fully Residential Schools (FRSS), and 7 sets from Religion Secondary Schools (RSS) in Malaysia. This data set was used to perform Structural Equation Modelling (SEM) analyses. This phase of data collection also employed a multistage cluster sampling technique. The number of the population is 146,513 (KPM, 2014), it was expected that the sample would compromise 640 teachers (Cohen et al., 2007) from 38 schools. According to Creswell (2008), the larger the sample the more convincing and reliable the survey was. A total of 646 set of questionnaires were circulated, 17 sets for each school, of which 586 sets were return and 582 were valid for analysis.

5.2 Reliability and Validity Test

The Cronbach Alpha coefficients were used to measure the internal consistency of the concerned scales, i.e. TLCS, PDLBS, and TCCS (Nunnally & Bernstein, 1994). Thus, the construct which had Cronbach Alpha coefficients greater than 0.70 have been retained for further analysis (Hair, Black, Babin, Anderson & Tatham, 2010; Hancock & Muller, 2010). Meanwhile, measures with item-to-total correlation larger than 0.3 are considered to have criterion validity and to be categorized as satisfactory (Hair et al., 2010).

The original questionnaire was translated into Malay language by experts using the ‘back translation’ technique. The items are reviewed by a panel of Niche Research Grant Scheme of Sultan Idris Education University to ensure the translation of meaning and terminology met the theoretical background as the technique was recommended by Sireci, Yang, Harter and Ehrlich (2006).

The questionnaire was then distributed to seven trained teachers in order to evaluate the clarity of each item (Flowers, 2006) based on the scale of one to ten and record it in the space provided for improvements or to be dropped out (Johnson & Christensen, 2008; Flowers, 2006). Besides, it also aims to identify whether the questionnaire was actually interpreted in the way it was designed specifically for the target population, as well as its suitability for Malaysian context. The results of item clarity is depicted in Table 1.

Table 1. Item Clarity Average Scores

Domain	Construct	Average Score of the Construct	Average Score of the Domain
Teachers' Leadership Competencies (TLC)	Facilitating Improvement and Establishing Standards (FIES)	9.81	9.50
	Modelling Leadership Attributes and Skills (MLAS)	9.38	
	Participating in Organizational Development (POD)	9.13	
	Fostering a Collaborative Culture (FCC)	9.72	
	Performing as Referral Leader (PRL)	9.46	
Principals' Developmental Leadership Behaviour (PDLB)	Focused (FOC)	9.21	9.45
	Supportive (SUP)	9.74	
	Developer (DEV)	9.49	
	Competitive (COM)	9.33	
	Charismatic (CHA)	9.49	
Teachers' Commitment to Change (TCC)	Personal Goals (PEG)	9.20	9.19
	Capacity Beliefs (CAB)	9.10	
	Context Beliefs (COB)	9.29	
	Total Average Score for the instrument		9.38

Consequently, it is important to get feedback on quality of the instrument in order to ensure appropriate terminologies or words were used for better understanding. According to Tuckman and Waheed (1981) in Sidek Mohd Noah and Jamaludin Ahmad (2005), item with average score equivalent to 70% or above was considered to have high content validity. The results of content validity are presented in Table 2 below.

Table 2. Content Validity Scores

Panel	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6	Panel 7	Cum. Score
(%)	81.71	81.42	81.85	81.42	81.21	80.60	80.42	81.23

Meanwhile, to verify the conceptualization on the constructs and its dimensions of TLCS, PDLB, TCCS, both Exploratory and Confirmatory Factor Analysis were utilized. The Exploratory Factor Analysis (EFA) through orthogonal rotation with varimax method was performed. It applied the following rules as proposed by Hair et al. (2010) and Tabachnick and Fidell (2007):

- Barlett's Test of Sphericity should be significant ($p<.05$);
- Kaiser-Meyer-Olkin Measure of Sampling Adequacy ($\geq.5$);
- Eigenvalues >1;
- Items with the factor loading >.5 were retained;
- The construction of factors were based on leadership competency theory and previous studies.

Table 3. Exploratory Factor Analysis and Internal Consistency Values of NMLCS

Construct	Factor	Number of item per construct	Percentage of variance	Cumulative percentage	Cronbach's Alpha (α)
TLC	Facilitating Improvement and Instruction	5	15.25	15.25	0.78
	Modelling Leadership Attributes and Skills	7	14.06	29.31	0.89
	Participating in Organizational Developmer	6	10.65	39.97	0.82
	Fostering a Collaborative Culture	6	5.14	45.11	0.73
	Performing as Referral Leader	7	4.80	49.91	0.83
PDLB	Charismatic	9	24.49	24.49	0.91
	Developer	9	24.37	48.86	0.90
	Focused	3	12.40	61.27	0.70
TCC	Capacity Beliefs	7	31.25	31.25	0.86
	Personal Goals	5	25.03	56.28	0.79

Confirmatory Factor Analysis for individual construct in the three proposed model, i.e. TLC, PDLB, and TCC is employed to test the stability of sixty four items of NMLCS utilizing AMOS Version 22 (Arbuckle, 2013). The researchers analysed this hypothesized tree-construct model with all thirteen factors as indicators of the variables. The dispersion parameter of TLC, PDLB, and TCC models were estimated using the Maximum Likelihood procedure. This procedure incorporates both observed and unobserved (i.e. latent) variables. Multiple indices were also selected to provide comprehensive data regarding model fit (Hu & Bentler, 1999). Therefore, the researchers examined chi-square per degree of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Goodness of Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA) to evaluate the goodness-of-fit of the model that fits the data. Nonetheless, these indices were less suitable to be utilized in determining the fitness of the model (Icobucchi, 2010) since the chi-square index highly depends on sample size (Bryne, 2010; Schumacker & Lomax, 2004). Thus, indices such as Comparative Fit Index (CFI) and Goodness of Fit Index (GFI) were also being evaluated whereby value of .90 is utilized as cutoff value of the acceptable fit (Nunnally & Bernstein, 1994; Schumacker & Lomax, 2004). Meanwhile, χ^2/df ratio value of less than 3 also been utilzed as a lower cutoff value of the acceptable fit. The RMSEA value of less than .60 indicates a good fit, while the value as high as .80 indicates

a reasonable fit (Hu & Bentler, 1999). The summary of Confirmatory Factor Analysis and Internal Consistency Value are depicted in Table 4.

Table 4. Summary of Fit Indices from Confirmatory Factor Analysis and Internal Consistency Value

Model	χ^2/df	CFI	GFI	RMSEA	Cronbach's Alpha (α)
Unmodified hypothesized three-construct model	1.945	.978	.946	.068	.903

The Structural Equation Modelling approach was employed to test the proposed model and hypotheses. This approach is a multivariate statistical technique for testing structural theory (Hair et. al., 2010). It incorporates Confirmatory Factor Analysis, Multiple Linear Regression and Path Analysis. Thus, the data analysis in this study employed AMOS Version 22 through Maximum Likelihood procedure. In the proposed model (Figure 1) TLC is considered exogenous variable while PDLB and TCC are considered endogenous variables. Nonetheless, PDLB is considered as endogenous variable when it linked to TCC. The individual questionnaires items were composited into specific factor groups. The four rules below were applied for the hypotheses' structure (Byrne, 2010):

i. each observe variable has a nonzero loading on the latent factor within the structure, but have a loading of zero towards other latent factors;
ii. no relationship among measurement errors for observed variables;
iii. no relationship among residuals of latent factors and;
iv. no relationship among residuals and measurement errors.

The analytical results generated from the path diagram revealed a satisfactory fit for the proposed model, as illustrated in Figure 2 below. The fit indices (GFI = .946, CFI = .978, NFI = .956, and RMSEA = .068) indicates the structural model meets the required levels of satisfactory fit. The χ^2/df ratio also indicates a reasonable fit at 1.945. In other words, the proposed model meet the criteria of good construct validity. The summary of fit indices of the model are depicted in Table 5 below.

Table 5. Summary of Fit Indices of the Model

Fit Indices	Literature	Recommended Value	Value Obtained
ChiSq/df	Marsh & Hocevar (1985)	< 5.0	1.945
	Bentler (1990)	< 5.0	
GFI	Chau (1997)	>.90	.946
	Segars & Grover (1993)	>.90	
CFI	Bentler (1990)	>.90	.978
	Hatcher (1994)	>.90	
NFI	Bentler & Bonett (1980)	>.90	.956
RMSEA	Byrne (2001)	<.08	.068

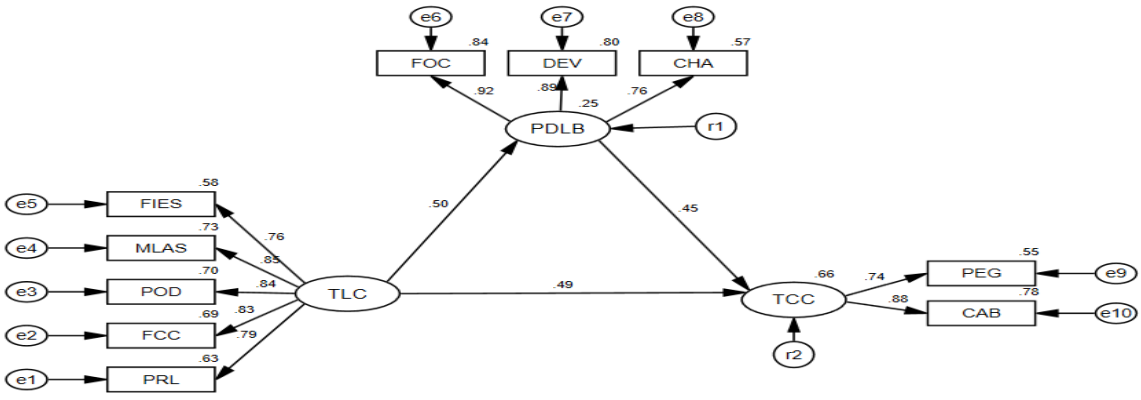

Fig. 2. Result of Theoretical Model Analysis

The three valid hypothesized (H□-2, H1-3, and H2-3) relationships and the result of the proposed model are shown in Table 6 below.

Table 6. Summary of Observations from Model Analysis

Hypothesis	Path	*Beta*	*p*	Results
H□-2	TLC → PDLB	.496	.000	Statistically significant
H1-3	TLC → TCC	.487	.000	Statistically significant
H2-3	PDLB → TCC	.452	.000	Statistically significant

6. DISCUSSION AND CONCLUSION

The following discussion is obtained based upon path analysis as depicted in Figure 2 above. The analysis shows that TLC has positive direct influence on PDLB and PDLB has positive direct effect on TCC whereby H□-2 and H2-3 are supported. Meanwhile, TLC also has indirect effect on TCC which shows H1-3 is supported. In other words, the direct and indirect effect illustrate that without intervene variable (PDLB), TCC can also be influenced directly. Thus, the findings indicate that teacher leaders' roles positively and continuously influences teachers' leadership competencies which will enhance teachers' commitment to change their daily roles as classroom instructional leaders to school-based teacher leaders. This implies that the teacher leaders' role is a critical component in sustaining school-based teachers' leadership competencies as well as to shift the paradigm of teachers' isolation to collaboration setting. The search on finding the optimal mix-that assortment of leadership competencies, developmental leadership behaviours and teachers' commitment to change that work best in Malaysian setting also been revealed.

Even though the empirical results of this study support the current proposed model, several limitations and future directions are briefly described. First, in order to grasp a more sophisticated evaluation of teachers' perception toward school principals' developmental leadership behaviours, a more complex and a context-specific phenomenon is needed (Pellettiere, 2006). Second, to obtain better understanding of the relationships among TLC, PDLB and TCC, it would be better to collect data from other ordinary secondary schools and primary schools in future studies, instead of mainly focusing on high performing secondary schools. Third, the characteristics of the high performing secondary schools involve in this study would differ from other types of secondary schools in other areas or countries. Thus, the results obtained from this study should not be assumed to represent the general case. Nonetheless, it may serve as fundamental reference for other schools which environments are similar to those in Malaysia. It may also contribute to the body of knowledge in future research.

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REFERENCES

Arbuckle, J.L. (2013). *IBM® SPSS® Amos™ 22 User's Guide.* IBM Corp, US: Amos Development Corporation.

Andrews, D., Crowther, F., Hann, L., & McMaster, J. (2002). *Teachers as leaders: RE-imaging the profession*. The Practising Administrator, (1).

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Barth, R. (2001). *Learning by heart*. San Francisco: Jossey-Bass.

Bentler, P.M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin, 107* (2), 238-46.

Bentler, P.M., & Bonnet, D.C. (1980). Structural Tests and Goodness of Fit in the Analysis of Covariance Structures. *Psychological Bulletin, 88*(3), 588-606.

Byrne, B.M. (2001). *Structural equation modeling with LISREL, PRELIS AND SIMPLIS: Basic concepts, applications and programming.* Mahwah, NJ: Erlbaum.

Bryne, B.M. (2010). *Structural Equation Modeling with AMOS: Basic concepts, application and programing.* London: Lawrence Erlbaum Associates.

Chau, P.Y.K. (1997). Re-examining a model for evaluating information center success using a structural equation modeling approach. *Decision Sciences, 28*(2), 309-334.

Chesterton, P., & Duignan, P. (2004). *Evaluation of the national trial of the IDEAS Project,* Report to DEST March.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. New York: Routledge.

Creswell, J.W. (2008). *Educational research*. New Jersey: Pearson-Merrill Prentice Hall.

Crowther, F., Kaagan, S.S., Ferguson, M., & Hann, L. (2002a). *Developing Teacher Leaders: How Teacher Leadership Enhances School Success*, Sage Publications, California.

Crowther, F., Hann, L., & Andrews, D. (2002b). *Rethinking the Role of the School Principal: Successful School Improvement in the Postindustrial Era*. The Practicing Administrator, Australia.

Elmore, R.E. (2000). *Building a New Structure for School Leadership*. The Albert Shanker Institute, Winter.

Flowers, C. (2006). Confirmatory factor analysis of scores on the clinical experience rubric: A measure of dispositions for preservice teachers. *Educational and Psychological Measurement, 66*(3), 478-488.

Ford, M. E. (1992). *Human Motivation: Goals, Emotions, and Personal Agency Beliefs*. Newbury Park, CA: Sage Publications.

Frazer, L., & Lawley, M. (2000). *Questionnaire design & administration: a practical guide*. Brisbane: John Wiley & Sons Australia, Ltd.

Fullan, M. (2010). *The moral imperative realized*. Thousand Oaks, CA: Corwin Press.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2010). *Multivariate data analysis*. New Jersey: Pearson Prentice Hall.

Harris, A. (2002*). Distributed Leadership in Schools: Leading or Misleading*. Keynote paper presented at the BELMAS annual conference, Aston University Lakeside Conference Centre, Birmingham, England.

Hancock, G. R., & Muller, R.O. (2010). *The reviewer's guide to quantitative methods in the social sciences*. New York: Routledge.

Hatcher, L. (1994). *A step-by-step approach to using the SAS System for factor analysis and structural equation modelling*. Cary, NC: SAS Institute Inc.

Heschel, A.J. (1962). *The Prophets*. New York: Harper Row.

Hu, L. & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Icobucchi, D. (2010). Structural Equation Modeling: Fit indices, sample size, and advanced topics. *Journal of Consumer Psychology*, 20(1), 90-98.

Johnson, R.B., & Christensen, L.B. (2008). *Educational research: Quantitative, qualitative and mixed approaches*. Thousand Oaks: Sage Publications.

Kementerian Pendidikan Malaysia (2014). *Institut Pendidikan Guru Malaysia*. Kuala Lumpur: Kementerian Pendidikan Malaysia.

Lashway, L. (2003). Distributed Leadership. *Research Roundup 19*(4), Summer, Available: http://eric.uoregon.edu/publications/rounup/Summer_2003.html

Marsh, H.W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological bulletin, 97*(3), 562.

Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric theory*. New York: McGraw-Hill.

Pearce, C.L., & Sims, H.P. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management and teams: An examination of aversive, directive, transactional, transformational and empowering leader behaviors. Group Dynamics: Theory, *Research and Practice*, *6*(2), 172-197.

Pellettiere, V. (2006). Organization self-assessment to determine the readiness and risk for a planned change. *Organizational Development Journal*, *24*(4), 38-43.

Salciuviene, L., Auruskeviciene, V., & Lydeka, Z. (2005). An assessment of various approaches for cross-cultural consumer research. *Problems and Perspectives in Management, 3*, 147-159.

Schumacker, R.E., & Lomax, R.G. (2004). *A beginner's guide to structural equation modelling* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.

Segars, A.H., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: a confirmation factor analysis. *MIS Quarterly, 17*(4), 517-525.

Sidek Mohd Noah & Jamaludin Ahmad (2005). *Pembinaan modul: Bagaimana membina modul latihan dan modul akademik*. Serdang: Penerbit UPM.

Silins, H., & Mulford, B. (2002). Leadership and school results, In K. Leithwood & P. Hallinger (Eds). *International handbook of educational leadership and administration*. Kluwer, Norwell MA, 561-612.

Sireci, S. G., Yang, Y., Harter, J., & Ehrlich, E.J. (2006). Evaluating guidelines for test adaptations: A methodological analysis of translation quality. *Journal of Cross-Cultural Psychology*, *37*(5), 557-567. Doi: 10.1177/0022022106290478.

Spillane, J.P., Halverson, R., & Diamond, J.B. (2001). Investigating School Leadership Practice: A Distributed Perspective. *Educational Researcher*, April, 23-28.

Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistic*. Boston: Allyn and Bacon.

Tuckman, B.W., & Waheed, M.A. (1981). Evaluation an individualized science programme for community college students. *Journal of research in science teaching, 18*, 489-495.

Zainudin Awang (2014). *A Handbook on SEM for Academicians and Practitioners: The Step by Step Practical Guides for the Beginners.* Bandar Baru Bangi. MPWS Rich Resources.