# ASSESSING THE SCHOOL-BASED PROFESSIONAL LEARNING IN MALAYSIAN CONTEXT (Part II)

**Mahaliza Mansor, Masri Baharom**

Faculty of Management and Economics, Sultan Idris Education University, Malaysia.
Teacher Training Institute, Campus Sultan Abdul Halim, Malaysia.
mahaliza@fpe.upsi.edu.my, masri@ipsah.edu.my

## Abstract

*The purpose of this paper is to propose a structural equation model to investigate the relationships among school-based professional learning leaders` roles, professional learning models and teachers` practice as well as to demonstrate the direct and indirect effect of these variables. An empirical study is conducted in 41 secondary schools (N = 385) in Malaysia and the collected survey data are used to test the relationships among the three dimensions expressed in the proposed structural equation model. 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` reference, especially for those whose circumstances are similar to those in Malaysia. This structural equation model hopefully can provide useful information for those involved in school-based professional learning, teacher educators, teachers as well as trainee teachers.*

## 1. Introduction

Teaching is creative, complex and requires high skills. Hence, teachers must constantly deepen their knowledge and skills to remain effective throughout their careers. Teachers` knowledge and skills can be enhanced through the effective school-based professional learning. This is because teachers need to continually updated their skills in line with changes to either the content knowledge or teaching and learning approaches [40]. Teachers who stop learning after the pre-service training will fail to full fill their roles effectively and become `prisoners of their own experiences` [39]. Therefore, continuous professional learning is a must for every teachers.

Teachers` knowledge and skills can be enhanced through effective school-based professional learning. According to researchers [13], [6] and [50] effective professional learning has the following elements; continuous, school-based and job-embedded, incorporates multiple data sources to plan, implement and evaluate professional practices as well as involves teachers and principals in identification and design of learning experiences to meet individual and collective needs. Thus, teachers will be more effective if professional learning activities have been planned and implemented in school effectively.

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. This plan emphasis on site-based professional learning and let manager manage concept which has been governed by respective school administrators [32]. By instilling this plan, it showed how serious the MOE in enhancing teachers knowledge and skills nationwide.

However, according to the Annual Report of Inspectorate and Quality Assurance 2008, [33], regarding the subjects observed in secondary schools found that:

i. Supervision of the principals are at moderate levels, while the findings of the supervisions were underutilized especially in guiding and improving the quality of teaching and learning as well as to plan staff development sessions regarding to the teachers` needs.

ii. Schools were found to have less series of consistent and effective training for teachers to strengthen their teaching methods and delivery techniques as well as to increase their knowledge and skills related to current pedagogy.

The findings of this report is also supported by a study carried by researchers [35]. They found that professional learning opportunities were limited either carried out by MOE, or at schools level. According to them, 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. Therefore, an effective school-based professional learning model which fit the Malaysian context should be identified.

Previously, in Malaysia teachers professional learning models were predominantly ad hoc where one-off workshops were conducted by MOE, SEDs or DEOs. There was a lack of congruence between the school administrators` roles, teachers` needs about professional learning and practices and inconsistency in terms of planning, purpose, activities and teacher involvement [2]. Hence, schools have been enforced by MOE to implement school-based professional learning to increase teacher involvement and continuously to improve their professionalism.

Many Western studies have focus on the characteristics and operation of school-based professional learning, but little is known about relationships between the school leaders` roles, teachers` professional learning models and practices [2;23;49;12;5;38;31;22], as well as to search the optimal mix [13;14] in Malaysian context. This study intends to propose a model to investigate the relationships among the discussed variables using structural equation modeling. The research participants were from 41 secondary schools in Malaysia. The study particularly targeted at the trained teacher and explored their perception of the actual condition of school leaders` roles, teachers` professional learning models and their effect on teachers` practice.

## 2. Theoretical framework

This section reviews the literature to identify the relevant practices comprising school-based professional learning leaders` roles, professional learning models and teachers` practice.

### 2.1 Professional learning leaders` roles

According to Lindstrom and Speck [24] professional learning leaders` roles are concerned with certain roles that can lead to organizational culture changes which can create a professional learning community. They must have a clear understanding, as well as the skills and abilities to lead professional learning efforts within their school through shared leadership [47]. Studies conducted by researchers [2], [23], and [49] regarding teachers` perspective showed that school administrator roles have influenced the professional learning activities in school. Their findings show that there are positive relationship between administrator leadership and teachers` learning. This showed that how important the school leaders role in enhancing school-based professional learning activities.

Lindstrom and Speck [24] identify 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 [22]. Detailed was discussed below:

### 2.1.1. 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.

### 2.1.2. 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.

### 2.1.3. The school leader as implementer

The role as implementer 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.

### 2.1.4. 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 sources regarding actions taken to evaluate school development.

Thus, according to the above literature, professional learning leader roles can be classified into four dimension as suggested by Lindstrom and Speck 2004: builder, designer, implementer and reflective leader, which are used in our model.

### 2.2 Professional learning models

Professional learning is defined as the processes design to enhance teachers` knowledge, skills and attitudes either individually or collaboratively for the purpose of improving students` learning [46; 10]. Furthermore, according to Sparks and Loucks-Horsley [46], professional learning is a planning and design of learning which embodies a set of assumptions about where knowledge about teaching practices come from and how the teacher acquire or extend their knowledge. Studies conducted by researchers [12;14], [5] and [38] regarding teachers` perspective showed that there was relationship between professional learning model and teachers` practice. This showed that how important the professional learning models in enhancing teachers` practices.

Professional learning models must in different types of supports and challenges that aligned with teachers` need in order to engage effectively in the activities and grow from them [10] either through individual or collaborative learning. Creating various types of learning models, Killion [21] discovered, ignites and sustains teachers' excitement for "learning, growing and changing their practices". Therefore, this study highlighted seven currently practiced professional learning models that have different features and functions to view teachers` perception about school-based professional learning in Malaysia. Five are from Model of Staff Development by Sparks and Loucks-Horsley [46] and two models are from the Professional Learning Model by Roberts and Pruitt [42]. The models are:-

### 2.2.1. Individually-guided learning

Individually-Guided learning is learning designed by the teachers themselves and it is not necessarily occur in a formal settings. Teachers determine their own learning goals and choose activities they believed can achieve these goals, such as reading and writing professional academic journals or academic material.

### 2.2.2. Collaborative problem solving

Collaborative problem solving focused on a combination of learning styles as the result of the teacher involvement in systematic school improvement processes. For examples, curriculum planning, research on effective teaching and group problem-solving strategies. These activities can also be achieved through discussion, observation, training as well as trial and error method.

### 2.2.3. Teaching observation and assessment

Teaching can be monitored and analyzed objectively, this model relied primarily in pairs and is focused specifically on observations in each other's classroom. The aim is to provide teachers with feedback on their performance. Moreover, collegial observations will enhance reflection and performance. The activities involve such as peer coaching, clinical supervision and teacher evaluation.

### 2.2.4. Training

Training is workshop-type sessions in which the presenter is the expert who established the course content based on a set of clear learning objectives through various group activities. This activities involved lectures, demonstrations, role playing, simulations and micro teaching. Effective training involved the exploration of theory, demonstration of skills, stimulating practice, feedback on performance and coaching in the workplace.

### 2.2.5. Action research

Action research is an activity of how teachers conduct mini-experiments to improved students` achievements and the findings of the experiments are shared among friends. Teachers learned the basic techniques of research in the classroom, formulate research questions, collect and analyze data and use the findings to improve teaching practices.

### 2.2.6. Study groups

Study groups is a gathering of teachers who meet on a regular scheduled basis to discuss instructional issues that the group members have agreed to study. Learning outcomes of this group will be used as teaching strategies in the classroom. This activity will develop culture of collaboration among teachers, reflective discussion, sharing personal and teamwork practices that can improve teachers' commitment to the shared school vision and values.

### 2.2.7. Professional portfolios

Professional portfolio is a thoughtful document demonstrating a teacher's approach to teaching. It shows teacher's practice over time and reflection about it. The contents of the portfolio is the goal or purposes targeted by teachers and it might consist of written documentation such as lesson plans. Portfolio is a powerful tool for reflection on practice which helped teachers evaluate the decisions and actions taken.

According to the above literature, all these recently used professional learning models are included in our model.

## 2.3 Teachers` practice

Teachers` practice is an evaluation of whether teachers used their new knowledge and skills on the job [13]. Studies conducted by researchers [31] and [22] regarding teachers` perspective showed that school administrator roles have influenced the teaching practices in school. The findings showed that there is relationship between administrator leadership and teachers` practice. This showed that how important the school leaders role in enhancing teachers` practice.

There were at least three major aspects of used or implementation need to be considered in changes of teachers` practice. According to Hall and Hord [17] this changes of practice can be evaluate through two aspects: stage of concern and level of use. These two aspects have been derived from the Concerns-Based Adoption Model of change (CBAM). While, researcher [13;14] and [1] proposed teachers` practice is measured on three aspects: concern, level of use and differences in practice.

### 2.3.1. Concern

Concern refers to the extent teachers become more familiar with the change and more comfortable with related practices and consequences.

### 2.3.2. Usage of knowledge and skills

Usage of knowledge and skills refers to the extent teachers` actions or non-actions regarding the use of newly acquired knowledge and skills.
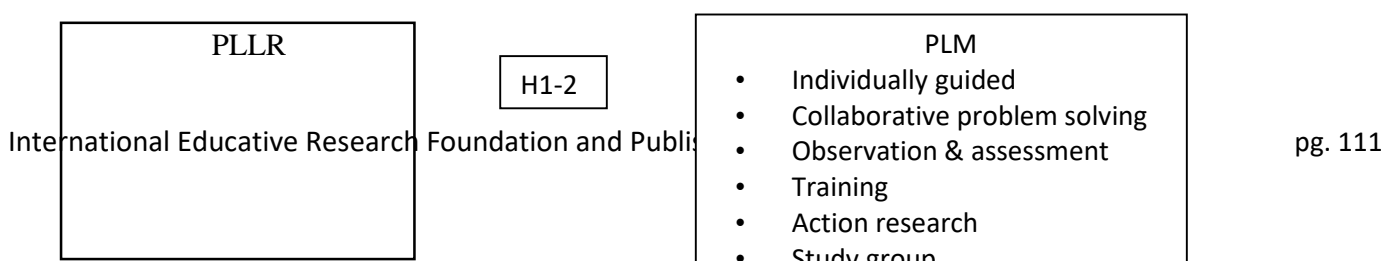
### 2.3.3. Differences in practice

Differences in practice refers to the extent teachers practices were different from what has been used in the past or in the present time.

Thus, according to the above literature, teachers` practice can be classified into three dimension as suggested by researchers [13;14] and [1]: concern, usage of knowledge and skills and differences in practice, which are used in our model.

## 3. Research design

The research design is shown in Figure 1. The relevant hypotheses of the model and the questionnaire design are presented below.
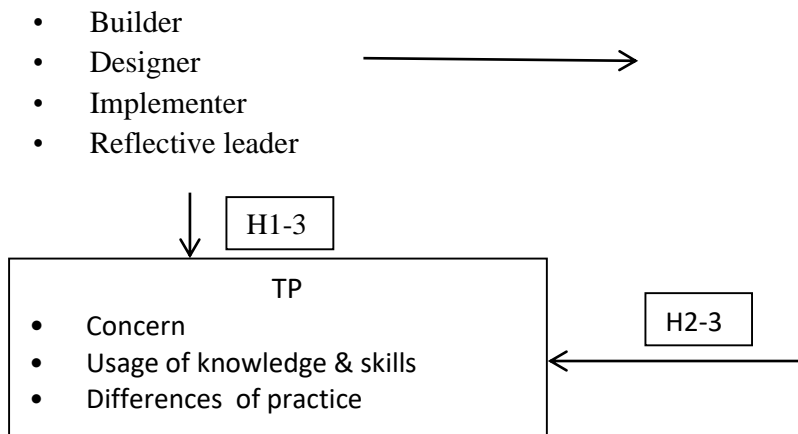
| PLLR | H1-2 | PLM<br>• Individually guided<br>• Collaborative problem solving<br>• Observation & assessment<br>• Training<br>• Action research<br>• Study group |
|---|---|---|

- Builder
- Designer
- Implementer
- Reflective leader

| H1-3 |

TP
- Concern
- Usage of knowledge & skills
- Differences of practice

| H2-3 |

**Figure 1: Research model for structural equation modeling analysis**

H1-2. Professional learning leaders` roles positively influences professional learning models.
H1-3. Professional learning leaders` roles positively influences teachers` practice.
H2-3. Professional learning models positively influences teachers` practice.

### 3.1 Questionnaire design

The questionnaire is composed of three parts including: professional learning leaders` roles (PLLR), professional learning models (PLM), and teachers` practice (TP). The questionnaire items were answered using a four-point Likert scale anchoring at 1, 2, 3,and 4 (strongly disagree, disagree, agree, strongly agree). According to Babbie [4] this scale is suitable to measures teachers` attitudes as well as opinions. Detailed definitions of the dimensions are described below:

#### 3.1.1. Professional learning leaders` roles.

The instrument used has been adopted from previous researchers [24] and [47]. Based on the literature review [24; 47; 22]. Four major constructs were considered, namely builder, designer, implementer, reflective leader.

#### 3.1.2. Professional learning models.

The instrument used has been adopted from previous researchers [41] and [2] with the consent through e-mail, [42] and [36]. Based on the literature review [46; 13; 50; 42] seven most frequently used teachers` professional learning models are extracted and considered in this study, namely individually-guided, observation and assessment, involvement in improvement process, training, action research, professional portfolios and study groups.

#### 3.1.3. Teachers` practice.

The instrument used has been adopted from previous researcher [17] for concern and usage of knowledge and skills dimensions. While for change in practices` dimension, it is adopted from Guskey [13].

## 4. Analysis and result

## 4.1 Sampling

**The data used in this research consists of 2 batch of questionnaires responses from participants in 60 regular secondary schools (*Sekolah Menengah Harian*) 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 were used in preliminary study as to perform exploratory factor analysis. 10 sets of questionnaires was distributed to each of these 19 regular secondary schools. A total of 190 survey forms were circulated, of which 170 surveys were return and 166 were valid for analysis [27].**

**While, the second batch of data was obtained from 41 regular secondary schools in Malaysia. A multistage cluster sampling techn**

**ique has been used in this phase of data collection. This set of data were used to perform analysis of structural equation model. The number of the population is 146,513 [34], it was expected that the sample would compromise 384 teachers [8] from 41 schools. A total of 410 survey forms were circulated, 10 forms for each school [28]. The 400 surveys were return and 385 were valid for analysis.**

### 4.2 Reliability and validity test

The Cronbach Alpha coefficients were used to measures the internal consistency of these scales [37]. In this study, the constructs which had Cronbach Alpha coefficients greater than 0.70 have been retained for further analysis [16; 15]. Furthermore, measures with item-to-total correlation larger than 0.3 are considered to have criterion validity [16]. The item-to-total correlation of each measures was more than 0.3, 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`. The items are reviewed by a panel of Sultan Idris Education University lecturers to ensure the translation of meaning and terminology met the theoretical background as the technique was recommended by Sireci, Yang, Harter and Ehrlich [45]. The panel consist of an assessment and measurement expert and two human resource development experts [28].

**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 [20; 11]. The purpose was to improve the items and to ensure it was suitable for Malaysian context. Furthermore, it was important to get feedback on quality of the questionnaire as it was easy to understand and used the appropriate language [30]. The samples were asked to evaluate about the clarity of each items by using the scale given [11]. 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 [44] 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 [30]. 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 | 86.84 |

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 has been used. The EFA applied the following rules as suggested [16] and [48]:

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 theory and previous studies. The results of exploratory factor analysis are presented in Table 2.

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

| Construct | Factor | Number of item per construct | Percentage of variance | Cumulative percentage | Cronbach's α |
|---|---|---|---|---|---|
| PLLR | Builder | 3 | 9.70 | | .642 |
| | Designer | 5 | 16.13 | 55.61 | .828 |
| | Implementer | 6 | 16.86 | | .781 |
| | Reflective leader | 5 | 12.62 | | .725 |
| PLM | Individually-guided learning | 4 | 8.76 | | .630 |
| | Training | 6 | 12.86 | 64.82 | .795 |
| | Action research | 5 | 12.15 | | .822 |
| | Professional portfolios | 4 | 13.16 | | .847 |
| | Study groups | 5 | 17.88 | | .944 |
| TP | Concern | 3 | 15.80 | | .710 |
| | Usage of skills and knowledge | 3 | 17.97 | 54.54 | .819 |
| | Differences in practices | 3 | 20.77 | | .815 |

Source: Mahaliza Mansor [26]

The confirmatory factor analysis was used to test the stability of factor from the three constructs, fifty two item SBPL using AMOS Version 18 [3]. We analyzed this hypothesized three-construct model with all ten factors as indicators of the variable. The parameters were estimated using maximum likelihood [29]. This approach incorporates both observed and latent variables. Multiple indices provided a comprehensive evaluation of model fit [18]. We examined chi-square per degree of freedom ratio (x²/df), Comparative Fit Index (CFI), 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. However, given the known dependency of the chi-squared index depends on sample size [7; 43] it is less suitable to use in determining the fitness of the model [19]. Therefore, indices such as CFI and GFI were also being evaluated. x²/df ratio value of less than 3 and value of .90 for CFI and GFI have been use as a lower cutoff value of the acceptable fit [37; 43]. In addition, the RMSEA value of less than .06 indicate a good fit, while the value as high as .80 indicate a reasonable fit [18]. The results of confirmatory factor analysis are presented in Table 3  and Table 4 below.

**Table 3 Confirmatory factor analysis and internal consistency values for constructs**

| Latent variables | Observe variables | Number of indicator per observed variables | Fit indices | | | | Cronbach's α |
|---|---|---|---|---|---|---|---|
| PLLR | | 19 | *x²/df* | CFI | GFI | RMSEA | .91 |
| | Builder | 3 | 2.19 | .93 | .92 | .05 | .83 |
| | Designer | 5 | | | | | .64 |
| | Implementer | 6 | | | | | .75 |
| | Reflective leader | 5 | | | | | .78 |
| PLM | | 24 | | | | | .89 |
| | Individually-guided learning | 5 | 2.42 | .85 | .84 | .06 | .63 |
| | Training | 4 | | | | | .74 |
| | Action research | 6 | | | | | .74 |
| | Professional portfolios | 5 | | | | | .84 |
| | Study groups | 4 | | | | | .92 |
| TP | | 9 | | | | | .84 |
| | Concern | 3 | 2.68 | .96 | .94 | .06 | .74 |
| | Usage of skills and knowledge | 3 | | | | | .70 |
| | Change in practices | 3 | | | | | .72 |

## 4.3 Analysis of structural equation model

The structural equation modeling approach was used to test the proposed model and hypotheses. This approach is a multivariate statistical technique for testing structural theory [16]. It incorporates both observed and latent variables as measurement model. The analysis was conducted by Amos Version 18 [3] through maximum likelihood method. In the proposed model (Figure 1) PLLR is considered exogenous variable and PLM as well

as TP are considered endogenous. However PLM is considered exogenous when it linked to TP. The individual questionnaires items were composited into specific factor groups.

The analytical results of the AMOS model reveal a satisfactory fit for our sample data. The final model is illustrated in Figure 2 below. The absolute fit indices (GFI = .96, and RMSEA = .06) indicates the structural model meets recommended levels. Thus represents a satisfactory fit for the sample data collected. The x²/df ratio also indicates a reasonable fit at 0.06. As the conclusion, the proposed model maintain good construct validity. The four rules below were applied for the hypotheses' structure [7]:

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 indices of the fit test of the model are shown in Table 4.

**Table 4: Fit test of the model**

| Measures | Indicators |
|---|---|
| Absolute fit measures | $x^2/$ with 32 degrees of freedom = 78.64 (p > .001); goodness of fit index (GFI) = .96; root mean square error of approximation (RMSEA) = .06 |
| Incremental fit measures | Comparative fit index (CFI) = .98; incremental fit index (IFI) = .98; Tucker-Lewis fit index (TLI) = .97 |
| Parsimonious fit measures | Parsimony normed fit index (PNFI) = .69; parsimony goodness of fit index (PGFI) = .56; normed $x^2$ 78.64/32 = 2.45 |

Source: Mahaliza Mansor [26]
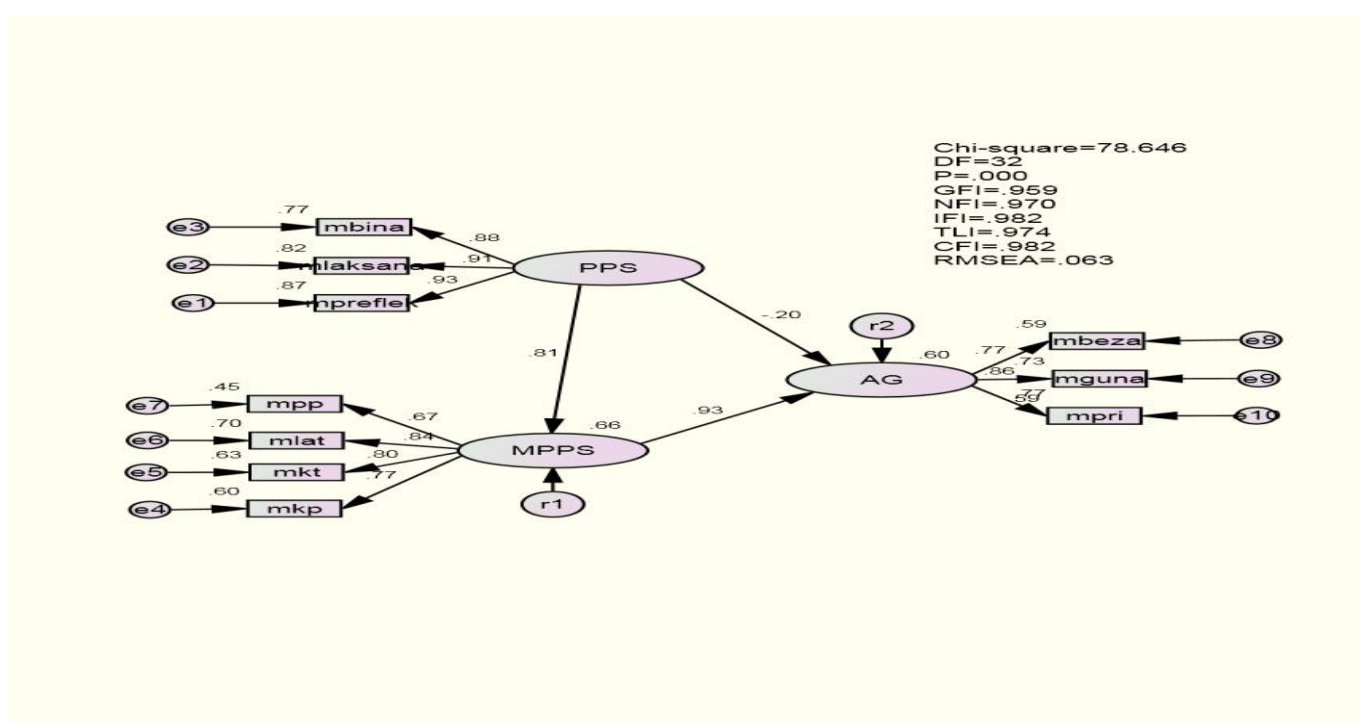
**Keys:**

| | | | |
|---|---|---|---|
| PPS | PLLR | mbina | Builder |
| MPPS | PLM | mlaksana | Implementer |
| AG | TP | mreflek | Reflective leader |
| mpp | Portfolio Professional | mbeza | Differences of practice |
| mlat | Training | mguna | Usage of knowledge & skills |
| mkt | Action Research | mpri | Concern |
| mkp | Study Group | | |

**Figure 2: Result of theoretical model analysis**

Source: Mahaliza Mansor [26]

Based on Figure 2, the three hypothesized (H1-2,H1-3, and H2-3) relationships and the result are summarized in Table 6.

**Table 5: Summarized observations from model analysis**

| Hypothesis | Path | Standardized Regression Weight | Standard Error | Critical Ratio | Results |
|---|---|---|---|---|---|
| H1-2 | PLLR → PLM | .81 | .03 | 16.73*** | Statistically significant |
| H1-3 | PLLR → TP | -.20 | .07 | -2.08 | Not significant |
| H2-3 | PLM → TP | .93 | .11 | 8.42*** | Statistically significant |

*p< .001*

## 5. Discussion and implication

The following discussion is based upon the results of Amos 18 analysis (Figure 2). It is noted that PLLR has positive direct influence on PLM and PLM on TP (H1-2 and H2-3 are supported). However, PLLR has an indirect influence on TP (H1-3 is not supported). PLLR has direct effect on PLM and PLM have direct effect on TP. However, PLLR also has indirect effect on TP. The direct effect and indirect effect illustrate that the intervene variable (PLM) is a mediator. The result of current study support the findings of prior studies concerning the influence of PLLR on PLM [2; 23; 49]. The influence of PLM on TP also has been supported [12; 14; 5; 38].However do not support the influence of PLLR on TP [31; 22] directly.

The findings indicate that professional learning leaders` roles positively and continuously influences professional learning models will enhance teachers` practice. This implies that the leaders` role is a critical component in sustaining school-based professional learning as well as to shift the paradigm of teachers` learning in isolation to learning in collaborative setting. The search on finding the optimal mix-that assortment of leaders` role, professional learning activities and teachers` practice that work best in Malaysian setting also has been revealed. This findings also useful to those involve in school-based professional learning, teacher educator, teachers as well as trainee teachers as it is a part of higher education curricular especially in teacher training institute throughout Malaysia.

Even though the empirical results of this study support the current model, at least three limitations should be carefully considered. First, since individual informants provide the empirical data, possible biases or preferences (e.g. learning styles, social preferences etc.) may exist due to different personal experiences or

educational backgrounds. Secondly, participant involve only from secondary school teachers, therefore in future studies it should be extended to primary school teachers. Thirdly, the data were collected in Malaysia; the characteristics of these schools surveyed may be quite different from those in other areas or countries. Hence, the present results should not be assumed to represent the general case. However, it may provide a fundamental reference for the schools located in other areas or countries whose environments are similar to those in Malaysia.

# References

[1]     Adey, P. (2005). *The professional development of teachers: Practice and theory.* Netherland: Springer.

[2]     Amin Senin. (2005). *Hubungan pengurusan pembangunan profesional sekolah dengan model pembangunan profesional serta pengaruhnya terhadap pengajaran guru di sekolah-sekolah menengah negeri sabah.* Unpublished Ph.D Thesis. Kota Kinabalu: Universiti Malaysia Sabah.

[3]     Arbuckle, J., L. (2009) *Amos 18 user`s guide*. Chicago: SPSS Inc.

[4]     Babbie, E. (2007). *Practice of social research*. United States: Cengage Learning.

[5]     Blank, R. K., de las Alas & Smith, C. (2008). *Does teacher professional development have effect on teaching and learning? Analysis of evaluation findings from programs for mathematics and science teachers in 14 states.* Washington, D.C.: Council of Chief State School Officers. Retrieved from<http:www.ccsso.org/projects/improving_evaluation_ofprofessional _development>

[6]     Bredeson, P. V. (2003). *Designs for learning*. Thousand Oaks: Corwin Press.

[7]     Byrne, B., M. (2010) *Structural equation modeling with AMOS: Basic concepts, applications and programming*. New York: Routledge.

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

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

[10]    Drago-Severson, E. (2004). *Helping Teachers Learn: Principal Leadership for Adult Growth and Development.* Thousand Oaks: Corwin Press.

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

[12]    Guskey, T.R.(1986). Staff development and the process of teacher change. *Educational Researcher*, 15(5) 5-12.

[13]    Guskey, T.R. (2000). *Evaluating professional development*. Thousand Oaks: Corwin Press.

[14]    Guskey , T.R.(2005). Take a second look at accountability. *Journal of Staff Development, 26*(1) 9-18.

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

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

[17]    Hall, G.,E. & Hord, S., M. (2010). *Implementing change: Patterns, principles and potholes.* Pearson: Boston.

[18]   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.

[19]   Icobucchi, D. (2010). Structural equation modeling: Fit indices, sample size and advance topics. *Journal of Consumer Psychology*, 20(2010) 90-98.

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

[21]   Killion, J. (1999). *What Works in the Middle: Results-Based Staff Development*. Oxford: National Staff Development.

[22]   Kose, B. W. (2009). The Principal's Role in Professional Development for Social Justice: An Empirically-Based Transformative Framework. *Urban Education*, *44*(6), 628-663. Doi:10.1177/0042085908322707.

[23]   Leithwood, K., Day, C., Sammons P., Harris, A., & Hopkins, D. (2006). *Successful school leadership: What is it and how it influences pupil learning* (Research Report RR800). England: Department for Education and Skills, University of Nottingham. Retrieved from http:/www.wallacefoundation.org.

[24]   Lindstrom, P. H., & Speck, M. (2004). *The principal as professional development leader*. Thousand Oaks: Corwin Press.

[25]   Mahaliza Mansor (2012). Assessing the school-based professional learning. In Malaysian context. In *South East Asian Association For Institutional Research 2012* (SEAAIR), Kota Kinabalu: Universiti Malaysia Sabah.

[26]   Mahaliza Mansor (2013). *Pembangunan model pembelajaran profesional berasaskan sekolah di sekolah menengah harian di Malaysia.* Unpublished Ph.D Thesis. Tanjong Malim: Universiti Pendidikan Sultan Idris.

[27]   Mahaliza Mansor & Norlia Mat Norwani (2010). Pembangunan profesional berasaskan sekolah: Satu tinjauan awal. In *International Management Education Conference 2010 (iMEC 2010)*, Melaka: Universiti Pendidikan Sultan Idris.

[28]   Mahaliza Mansor, Norlia Mat Norwani & Jamal @ Nordin Yunus (2010). Kesahan dan kebolehpercayaan alat ukur pentadbir sebagai pemimpin pembangunan profesional berasaskan sekolah (PPPS). In *Seminar Sehari Penyelidikan 2010*, Tanjong Malim: Fakulti Pengurusan dan Ekonomi, Universiti Pendidikan Sultan Idris.

[29]   Mahaliza Mansor, Norlia Mat Norwani & Jamal @ Nordin Yunus (2011). Inventori pembelajaran profesional: Pembinaan inventori, analisis faktor, kebolehpercayaan dan kesahan. In *Seminar Majlis Dekan-Dekan Fakulti Pendidikan IPTA 2011*, Serdang: Fakulti Pendidikan, Universiti Putra Malaysia.

[30]   Mahaliza Mansor, Norlia Mat Norwani & Shahril @ Charil Marzuki (2011). Validity and reliability of the school-based professional development leader roles inventory. *Management Research Journal, 1*(1),73-83.

[31]   Meher Rizvi (2008) The role of school principals in enhancing teacher professionalism. *Educational Management Administration & Leadership 36*(1) 85-100.

[32]   Ministry of Education. (2008a). *Garis panduan pengoperasian latihan dalam perkhidmatan*. Putrajaya: Kementerian Pelajaran Malaysia.

[33]   Ministry of Education (2008b). *Laporan Tahunan Jemaah Nazir dan Jaminan Kualiti 2008*. Putrajaya: KPM.

[34]   Ministry of Education (2009). *Laporan Tahunan 2009*. Putrajaya: KPM.

[35]   Muhammad Kamarul Kabilan & Abdul Rashid Mohamed (2009). Malaysian english teachers'

satisfaction level of their professional development. In *Seminar Jawatankuasa Penyelarasan Pendidikan Guru 2009*, Ipoh: Universiti Pendidikan Sultan Idris.

[36] Murphy, C. U., & Lick, D. W. (2005). *Whole-faculty study groups creating professional learning communities that target student learning*. Thousand Oaks: Corwin Press.

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

[38] OECD (2010).*TALIS 2008 Technical Report* . Retrieved from http://www.oecd.org/dataoecd/16/14/44978960.pdf .

[39] Omar Abdull Kareem (2010). Teacher capacity building in teaching and learning: The changing role of school leadership. In *International Management Education Conference 2010 (iMEC 2010)*, Melaka: Universiti Pendidikan Sultan Idris.

[40] Omar Abdull Kareem & Khuan Wai Bing (2005). Perkembangan Profesional Guru Secara-berterusan: Perspektif Pembangunan Sumber Manusia. *Jurnal Masalah Pendidikan* . Retrieved from http://myais.fsktm.um.edu.my/4991/

[41] Persico, M. (2001). *Exploring the relationship between the perceived leadership style of secondary principals and the professional development practices of their teachers.* Unpublished PhD Thesis. Bethlehm: Lehigh University

[42] Roberts, S. M., & Pruitt, E. Z. (2009). *Schools as professional learning communities: Collaborative activities and strategies for professional development*. Thousand Oaks: Corwin Press.

[43] Schumacker, R., E. & Lomax, R., G. (2004). *A beginner`s guide to structural equation modeling.* New Jersey: Lawrence Erlbaum Associates Publishers.

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

[45] 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

[46] Sparks, D., & Loucks-Horsley, S. (1989). Five models of staff development for teachers. *Journal of Staff Development*, *10*(4), 40-57.

[47] Speck, M., & Knipe, C. (2005). *Why can't we get it right?* Thousand Oaks: Corwin Press

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

[49] Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas, TX: National Staff Development Council.

[50] Zepeda, S. J. (2008). *Professional development*. New York: Eye on Education.