Development of Learning Leadership Indicators for Thai Secondary School Principals

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ABSTRACT

This research aimed to examine the key factors and indicators of learning leadership for secondary school principals in the northeast of Thailand. The researchers conceptualized learning leadership indicators to form a framework by analyzing documents and related previous research, coupled with interviewing five academic experts. This is followed by a survey of 780 school principals with the intention of testing the goodness-of-fit of the identified learning leadership indicators with the empirical data. Finally, the researchers analyzed the approach and guidelines for developing learning leadership skills. This study utilized a mixed mode method. The results disclosed that a total of 60 indicators were identified from nine key factors. The structural relationship model of learning leadership indicators was found to be consistent with the empirical data, with $\chi^2 =344.241$, df = 307, χ^2/df = 1.1213, CFI = 0.996, TLI = 0.995, RMSEA = 0.019, and SRMR = 0.019. The guidelines of the nine key factors with high factor loading indicators, include the criteria for enhancing the aims and objectives, the strategies involved by self-directed learning, workshops, training, benchmarking, and action research. The developmental procedure encompasses the identification of need assessment, strategic planning formulation, technique selection, implementation, and monitoring and assessment. The findings contributed significantly to the knowledge with regards to proposing guidelines and approaches that will guide secondary school principals in their quest to become efficient learning leaders.

Keywords: Guidelines for the development of learning leadership, key factors, learning leadership indicators, secondary school principals

INTRODUCTION

Effective leaders never cease to learn about any aspect of educational leadership. This is because school principals are conscious of the need to develop themselves and take every opportunity to apply this approach by enhancing the means and arrangements that allows them to promote single and shared learning to the extent of their administrative power (Somprach, Tang, & Popoonsak, 2016). Therefore, successful leadership involves taking every opportunity to learn. According to Kouzes and Posner (2016), learning leadership is defined as a strong factor of ordinance outcomes at the micro- and macro-level of school operation. Somprach et al. (2016) further emphasized that learning leadership can enhance school principals' ability to take into account their distinct leadership powers and weaknesses, so that they are able to introduce new methods of dealing with impending challenges and overwhelming problems. This is further supported by Kohlreiser (2013), as learning leadership can improve interactions between school principals and their subordinates by constructing solid links. In fact, school principals can handle conflict through successful learning leadership operations, and train their subordinates to enhance their abilities. As a result, learning leadership furnishes school principals with the ability to introduce long-lasting accomplishments, and offers school principals a "play to win" mentality to inspire novel approaches in staff performance.

According to Runcharoen (2014), school principals not only needs to be competence, knowledgeable, and creative when it comes to introducing learning innovations and extending the learning potential of school staff, but must also possess good occupational ethics. Moreover, Somprach (2012) indicated that learning leadership was a vital factor in job reform for organizational effectiveness, and was an important mechanism affecting processes, organizational structure, patterns, social interactions, beliefs, values, attitudes, and working behaviors. Since leadership is a powerful force when it comes to determining school effectiveness and student learning, as indicated by Louis and Leithwood (2010), this prevalent acceptance should be tested through the use of empirical data (Somprach & Tang, 2016).

The Office of Education Council (OEC) of the Ministry of Education (2011), which is the key body dealing with organizational policy advancement in terms of planning and setting education standards, has summarized three key features of education reform with regards to the second decade of this century (2009–2028). The three key features are (i) improving the quality and standard of education and learning of the Thai people; (ii) increasing life-long educational chances thoroughly and effectively, and (iii) encouraging participation from every sector, targeting on systematic reform and learning in Thailand. The Ministry of Education (2015) is currently fostering the transformation of the education system with a tactic based on enriching moral

and ethical values, in conjunction with a central program for cultivating excellence in education. It has proposed strategies to reform education in six main areas: (i) curriculum and learning procedures; (ii) teacher production and improvement; (iii) evaluation, quality assurance, and educational standard development; (iv) production and development of the workforce and research that fulfills the need for developing the country; (v) ICT for education; and (vi) management system.

Statement of the Problem

The current educational administration system requires an innovative method to develop learning leaders. Action learning has appeared as one of the most prevailing and operative devices engaged by global organizations to grow and shape their leader. Responding to the challenges of the Twenty-First Century, school principals have to resolve their precarious, multifaceted problems, as well as to cultivate the capabilities and traits required if they are to flourish in the 21st Century (Somprach & Tang, 2016). Kouzes and Posner (2016) further argued that good learning leadership was a practice, which should be strengthened on a daily basis, and which required school leaders to be constantly learning. Although Kouzes and Posner have suggested five fundamental phases to be a typical leader, namely believing in yourself, aspiring to excel, challenging yourself, engaging support, and practicing deliberately, yet to what extent these fundamental phases are relevant to Thai secondary school principals is still questionable.

Seijts (2013) made the point that there was no question that outstanding school principals with self-reliance proceed to make challenging resolutions. In addition, they exhibit a wish to lead and the normal capability to appeal subordinates. However, other school principals have been fostered, with many thriving regardless of being thrust, often hesitantly, into leadership roles. It can be concluded that school principals of whichever kind have been recognized to outshine of be unsuccessful to live up to their potential. Therefore, good leaders have to develop through constant learning about their personalities, and promoting this as a major concern. Since research on effective leadership styles has been only studied to a limited extent in Thailand (Somprach et al., 2016), an investigation of learning leadership indicators in the Thai context is urgently needed. By providing guidelines with regard to developing the learning leadership skills of secondary school principals, school organizations with any style of leadership culture need to dedicate themselves, to creating learning leadership as a matter of urgency, and offering a diversity of organized chances for learning. This is a necessity in order to respond to the recent Thailand education reforms.

Somprach et al., (2016) studied the association between school leadership and professional learning communities in Thai basic education schools. They found that the overall ratings for all the nine leadership styles, namely strategic, transformational, invitational, ethical, learning, political, entrepreneurial,

collaborative, and sustainable indicated that they were highly practiced by school principals. Their findings showed that the three most preferred leadership styles—political, sustainable, and ethical—failed to be significant predictors of the promotion of professional learning communities. On the other hand, learning leadership, which was not favored by school principals, was found to be the most significant predictor of the substitution and accomplishment of school cultures that stimulate collaborative working relationships and the maintenance of teachers' continuing learning. Somprach et al.'s findings imply that learning leadership seems to be neglected, although this leadership style clearly indicates why learning-centered leadership is pertinent to present methods and consequences that they supported as it is the fundamental reason for a school's reality and perseverance.

This study's outcome is a set of comprehensive guidelines to develop learning leadership skills that can be utilized to unleash internal-leaders and to the construction of a concrete base for an era of leadership development and mastery. The findings of this study offer an actual framework that can be used to aid individuals at all levels, functions and background, allowing themselves to take control of their personal leadership growth, and transform them into the greatest leaders they can be. In addition, the findings of this study would be useful for managing schools, and for formulating policies and objectives for planning educational management. In terms of information, it can

be utilized to monitor, assess, and evaluate principals' performance, ensure quality assurance, require them to reflect on their responsibilities with regard to their duty, and to set goals that are measurable.

Concluding the Concepts of Learning Leadership

The Centre for Educational Research and Innovation (Centre for Educational Research and Innovation [CERI], 2013) provided an in-depth investigation of what learning leadership means, conceptually and in practice. OECD (2013) defined learning leadership as being at the center of all modifications and plan processes, as learners' learning is at the heart of the school, with the core work being to ensure deep 21st Century learning, in any kind of environment. Dimmock (2012) defined learning leadership as (i) learning centered on emphasizing leadership of curricula, teaching, and learning; (ii) distributed so that leadership empowers teachers and builds the capacity of available human capital, and (iii) community networked, thereby benefiting from the resources of other schools and the community. The researchers have conceptualized learning leadership according to conclusions made in the CERI report (2013) as follows:

Learning Leadership is Critical For Reform And Innovation. Learning leadership is vital because it is so prominent in terms of ways and consequences, whether at the micro-level of schools and learning settings, or with regards to

larger systems. Learning is the central occupation of education, and consequently is the principal procedure and specialized feature of leadership. Hence, learning leadership is concentrated on generating and supporting settings that encourages good learning. Innovation is an essential aspect of the implementation of learning leadership in locating innovative instructions and manipulating learning settings.

Learning Leadership is Incorporated in the Design, Implementation, and Sustainability of Prevailing Innovative Learning Settings. Learning leadership is about setting ways and taking accountability for creating how it happens. It is used through distributed, connected activity, and through relationships. It spreads beyond formal staff to include a range of different partners, and may be implemented at different levels of the whole learning system. It includes "learning management" in the pledge to renovate, endure, and make modifications happen.

Learning Leadership Puts Generating the Circumstances for the 21st Century Learning and Teaching at the Center of Leadership Practice. Students' learning is at the heart of the school organization and is the central business that guarantees 21st Century learning. Designing and evolving innovative learning settings to meet such expectations requires highly challenging teaching inventories, and for everyone to continue learning, unlearning, and relearning. Continuous learning on the

part of all staff or partners is necessary for successful operation and sustainability.

Learning Leadership Requires the Demonstration of Creativity and Often Encouraging. The exercise of creativity includes inventing, designing, getting others on board, and re-designing the learning process. Transformation is aimed to encourage profound shifts in mind set and practice, as well as the capability to retain the individual's long-term vision, even if the preliminary point may be incremental. The leadership emphasis is on profound modifications to practice, structures, and cultures, but not just interfering, and guaranteeing that supportive situations are in place.

Learning Leadership Models Cultivate 21st Century Professionalism. Hence, learning leaders must be high-level knowledge workers through proficient learning, inquiry and self-evaluation. Leaders do not only involve themselves in suitable learning but also create conditions for others to do the same. They exhibit and extend a parallel professionalism through their wider communities. Professional learning combines theory and practice, with chances for applied testing in teaching and organization, learning from the involvement and taking account of reactions.

To achieve that, leaders must take accountability for guaranteeing that all teachers investigate and assess their practice. Mentors and other learning fellows share knowledge and work to research and collect

evidence on innovative and improved teaching practices and their implementation. Then collaboration will be achieved across the learning setting, with importance being given to peer learning from implicit knowledge, and the preferment of shared teacher decision-making on the assumption of evidence-informed practices (OECD, 2013).

Literature Reviews

Somprach et al., (2016) have explored the vital role of leadership styles on the part of school principals in inspiring teachers' involvement in professional learning communities in basic education schools in north eastern Thailand. A total of 731 respondents have participated in this quantitative survey study. Although teachers' involvement in professional learning communities was significantly associated with all the nine leadership styles studied at a significance level of 0.05, learning leadership had the strongest correlation (r value = 0.683; $p < 0.05$). On top of that, a stepwise regression analysis to identify significant predictors for teachers' participation in professional learning communities showed that learning leadership (β = 0.260) was the most important predictor, followed by transformational leadership (β = 0.242), collaborative leadership (β = 0.180), and invitational leadership (β = 0.150). In brief, these four variables showed a linear relationship with teachers' participation in professional learning communities. The adjusted R^2 value of 0.466 indicating the

impact of learning leadership on teachers' participation in professional learning communities, was 46.6%. All the four leadership styles accounted for 55.6% of the variation in teachers' involvement in professional learning communities.

Somprach and Tang (2016) utilized grounded theory as a systematic methodology involving the construction of learning leadership theory through the analysis of data. A total of six outstanding principals, three from each educational level, namely primary and secondary, were selected as respondents. Their findings revealed that the learning leadership on the part of school principals consisting of 10 attributes: (i) creativity and courage; (ii) powerful environment for learning; (iii) flexibility; (iv) integration; (v) technologies application; (vi) team learning; (vii) self-directed learning; (viii) transformational tailor-made processes; (ix) sufficiency economic philosophy, and (x) research. These learning leadership attributes of the chosen principals led to an improvement in the efficiency of management, teaching, and learning of the school community thus leading to the development of a learning community. Their findings are in line with the National Education Plan of Thailand (2009–2016).

Objectives of the Study

The main objective of this study is to develop the learning leadership indicators for school principals in the northeast of Thailand. More specifically, the study sought to:

1. Identify the key factors and indicators with regards to learning leadership for secondary school principals.

2. Test the goodness-of-fit of the learning leadership indicators with the empirical data.

3. Investigate the approach and identify guidelines for developing learning leadership on the part of secondary school principals.

METHODS

Research Design

Researchers employed a mixed mode method comprising of philosophical assumptions that guide the way in which the data are collected and analyzed, through a combination of qualitative and quantitative methods. The research process involves three phases namely planning, searching, discovery, reflection, synthesis, revision, and learning. The method emphasizes on collecting, analyzing, and combining both quantitative and qualitative data in a single study. Its vital principle is the use of quantitative and qualitative methods in combination to provide a better understanding of research problems than either method alone.

Research Samples and Procedures

This research is composed of three phases:

Phase 1: Conceptualization of Learning Leadership Indicators. This phase of the research includes activities with solid conceptual components in order to identify the indicators of learning leadership. According to Brink, Van Rensburg, and Van der Walt (2012), conceptualization refers to the process of emerging and filtering non-concrete ideas. During this phase, researchers categorized and developed learning leadership indicators to form a framework by analyzing documents and related previous research, as well as interviewing five academic experts. Thus, the actions include thinking, rethinking, theorizing, making decisions, and reviewing ideas with the help of experts. Researchers involved applied the skills and capabilities of creativity, analysis and insight, as well as using the fixed grounding of existing research on learning leadership to conceptualize the indicators.

Phase 2: Constructing a Survey. Researchers employed a five-scale rating survey questionnaire as a method of collecting quantitative data. At this phase, the research population consisted of all the secondary school principals who are affiliated with Secondary Education Service Area Office 19 to 33 under the administration of the Basic Education Commission in the northeast of Thailand. Thompson (2004) proposed that at least 200 respondents must be tested in order to achieve an established solution through factor analysis. Meyers, Gamst, and Guarino (2006) proposed that a suitable sample size depended on the numbers of items available for factor analysis. Rules of thumb for formulating an adequate sample

size (N) are identified as being of restricted use in achieving an acceptable probability for the required empirical outcomes (e.g., model convergence, statistical precision, statistical power) for a particular application of confirmatory factor analysis (CFA) with real data (Marsh, Hau, Balla, & Grayson, 1998). General rules of thumb for defining an adequate N for a specific application of CFA include, but are not restricted to, $N \geq 200$, ration of N to the number of variables in a model (p), $N/p \geq 10$; the ration of N to the number of model parameters (q), $N/q \geq 5$; and a reverse relationship between construct reliability and adequate N. Even when model-data assumptions are made that are seldom observed in practice, and replicated data are analyzed, the performance of these rules of thumb has restricted the capability of methodologists to identify conclusive guidelines for adequate N across the myriad of model-data conditions observed in practice (Gagné & Hancock, 2006; Jackson, 2001). The central problem with these rules of thumb stated that adequate N for CFA is subject to many factors that naturally differ across any two studies using real data and vague theoretical models (e.g., distribution of variables, reliability of indictors, size of the model, degree of model misspecification).

After taking into account the aforementioned consideration, it was decided that the ratio of parameter and samples should be 20:1. In this research, there were 38 parameters that led to a sample of not less than 760. A multistage sampling technique was administered, and the required sample size was 780 participants, as stated by Yamane's (1970) formula at the 95% confidence level. The survey was mainly designed as a quality assessment of the developed learning leadership indicators in Phase 1. The aim of Phase 2 was to make use of theories and/or hypotheses pertaining to the phenomenon under consideration. The process of measurement was to provide the fundamental connection between empirical observation and the theoretical construct of quantitative relationships involving empirical data. The relationships are represented by regression or path coefficients between the learning leadership indicators.

Phase 3: Investigating the Approach and Guidelines for Developing Learning Leadership Skills. A focus group discussion was used to bring together nine experts from various backgrounds and with a great deal of experience to discuss the approach and review the guidelines for developing learning leadership skills. The group of experts consisted of three college lecturers at the associate professor level who are doctoral degree holders, three directors of educational service areas with doctoral degrees, two school principals with doctoral degrees, and an educational supervisor. The strong point of this focus group discussion was that it permits the experts to exchange their ideas and opinions in order to deliver an understanding of what the expert group thought about the most appropriate approach, about the assortment of view and indications, and

about the discrepancies and distinctions that exist in a particular community in terms of principles and their experiences and practices. This focus group discussion was used to explore the meanings of the survey findings in Phase 2 that cannot be explained statistically, the range of opinions or views on learning leadership skills, and to collect an extensive amount of local experience before developing guidelines in terms of learning leadership development.

The final step was to evaluate the suitability of the developed approach and the guidelines of learning leadership skills development with the help of 12 experts using an assessment of its suitability and possibility of application. The 12 experts comprised three university lecturers at the associate professor level who are doctoral degree holders, three doctoral degree experts in educational administration or authors with equivalent of books related to leadership development, three directors of educational service areas with doctoral degree, two school principals with doctoral degrees, and an educational supervisor in the field of educational assessment.

Data Analysis

Quantitative data was analyzed using descriptive statistics and Structural Equation Modelling (SEM), while the qualitative data was analyzed using content analysis. Researchers used SEM techniques to evaluate how closely a theoretical model fits an actual data set in order to test the hypothesized model. SEM is a combination of factor analysis and regression or path analysis. The interest of SEM often relates to the study of theoretical constructs, which are represented by the latent factor. The relationships between the theoretical constructs are represented by regression or path coefficients between the factors. The structural equation model implies a structure for the covariance between the observed variables. SEM provides a very wide-ranging and appropriate framework for statistical analysis that includes several traditional multivariate procedures such as factor analysis, regression analysis, discriminate analysis, and canonical correlation as a special case. Structural equation models are often envisioned through the use of a graphical path diagram. The statistical model is usually exemplified in a set of matrix equations.

Mplus program was used to analyze the relationship among the factor groups for research hypotheses within SEM that allows the model to be detailed graphically, by permitting the user to draw the path diagram directly in an interactive command window. Use of those analyses is consistent with previous leadership research (e.g., Prasertcharoensuk, Somprach, & Tang, 2017; Prasertcharoensuk & Tang, 2016; Prasertcharoensuk & Tang, 2017; Thanomwan, Keow Ngang, Prakittiya, & Sermpong, June 2017). Confirmatory factor analysis (CFA) was used to examine correlations between latent variables and the observed variables and path analysis was used to examine the structural model (correlation between latent variables).

CFA is a commonly used statistical device for investigating the nature and relationships among latent constructs. CFA clearly tests a prior hypotheses about relationships between observed variables and latent variables or factors. CFA is part of SEM, and plays a vital role in measurement model validation in path or structural analyses (Brown, 2006; MacCallum & Austin, 2000). Researchers assessed the measurement model as to whether or not the measured variables had accurately reflected the desired constructs or factors, before assessing the structural model.

In this study, the aim of SEM is twofold. First, it aims to obtain estimates of the parameters of the model, such as the factor loading, the variances and covariance of the factor, and the residual error variances of the observed variables. The second aim is to assess the fit of the model, for example, assessing whether or not the model itself provides a good fit to the data.

Absolute fit indices indicate how well a preceding model fits the sample data (McDonald & Ho, 2002) and establishes which proposed model has the best fit. These measures offer the most vigorous suggestion as to how well the proposed theory fits the data. Unlike incremental fit indices, its aim is not to rely on a comparison with a baseline model, but instead to measure how well the model fits in comparison to no model at all (Jöreskog & Sörbom, 1993). The variance–covariance matrix was analyzed using the maximum-likelihood estimation and using multiple indices of model fit including the Chi-Square statistic (χ^2), the

Standardized root mean square residual (SRMR), the Comparative fit index (CFI), the Goodness-of-fit statistic (GFI), the Adjusted goodness-of-fit statistic (AGFI), Normed-fit index (NFI), the Tucker-Lewis index (TLI), and the Root mean square error of approximation (RMSEA).

Content analysis is a research tool used to govern the occurrence of certain words or concepts within texts and sets of texts. The researchers quantify and analyze the presence, meanings, and relationships of such words and concepts, then make inferences about the messages within the texts. First, the researchers would transcribe all the data collected from the interviews to get a general sense of the whole, and of the ideas presented. To conduct a content analysis on such text, the text is coded, or broken down, into manageable categories on a variety of levels, that is, word, word sense, phrase, sentence, or theme, and then it is examined using conceptual analysis.

RESULTS AND DATA ANALYSIS

The results of this study are presented in line with the research objectives indicated earlier. The initial results are the conceptualization in terms of learning leadership, to identify the key factors and indicators of learning leadership for secondary school principals. This is followed by factor loading and an assessment of the validity of the observable variables to test the goodness-of-fit of the learning leadership indicators with the empirical data. Finally, approaches and guidelines for developing learning leadership skills are presented.

Identification of Learning Leadership Indicators

According to the investigation of the synthesis of concepts, theories and previous research, the key factors of learning leadership are (i) creativity and courage; (ii) creation of an environment that supports learning and innovation; (iii) flexibility; (iv) integration; (v) the application of high technology in management and learning; (vi) team learning; (vii) self-directed learning; (viii) transformational tailor-made processes; and (ix) ethics in sufficiency philosophy. The findings of the first phase indicated that there are 60 learning leadership indicators, which derived from the nine key factors, as shown in Table 1. This is coupled with the five experts' recommendations with regards to fitting the 60 learning leadership indicators with the nine key factors based on the Thai context. The majority of the five experts suggested to use the mean score of 3.00 or more as a cut-off point, and the coefficient of dispersion as 20% or less, in order to synthesize those factors on the grounding of existing research on learning leadership.

Table 1
Learning leadership indicators

Factors of learning leadership	No. of indicator
Creativity and courage	7
Creation of an environment that supporting learning and innovation	6
Flexibility	6
Integration	6
Usage of high technology in management and learning	6
Team learning	8
Self-directed learning	9
Transformational tailor-made processes	6
Ethics in sufficiency philosophy	6
Total	60

Goodness-of-Fit of the Learning Leadership Indicators with the Empirical Data

In the second phase of this study, researchers aimed to obtain estimates of the parameters of the learning leadership model, the factor loading, and the validity of the observable factors of learning leadership. As indicated in Table 2, the factor loading of all the learning leadership factors ranged from 0.901 to 0.964, and are statistically significant at 0.01. Factor loading refers to the importance of the standard indicators of each factor in the learning leadership model of secondary school principals that had been taken into consideration. The co-variance with the learning leadership factors ranged from 81.20-92.90%. The factor with the highest factor loading was the creation of an environment that supports learning and innovation. This was followed by self-directed learning, team learning, creativity

and courage, usage of high technology in management and learning, transformational tailor-made processes, flexibility, and the ethics in sufficiency philosophy. The factor that had the lowest factor loading was integration. As a result, all the key factors are found to be important constructs of learning leadership.

Table 2
Factor loading of learning leadership factors

Factors	Factor loading (β)	Prediction coefficient (R^2)
Creation of an environment that supports learning and innovation	0.964	0.929
Self-directed learning	0.952	0.906
Team learning	0.950	0.902
Creativity and courage	0.949	0.900
Usage of high technology in management and learning	0.932	0.869
Transformational tailor-made processes	0.918	0.842
Flexibility	0.908	0.824
Ethics in sufficiency philosophy	0.906	0.821
Integration	0.901	0.812

In structural equation modeling, the fit indices establish whether, overall, the model is acceptable. The result revealed that the learning leadership model has a goodness of fit with the obtained data of, χ^2 = 344.241, df = 307, χ^2/df = 1.1213, CFI = 0.996, TLI = 0.995, RMSEA = 0.019, and SRMR = .019. The relative chi-square is also called the normed chi-square. This value equals the chi-square index divided by the degrees of freedom (χ^2/df). The criterion for acceptance varies across researchers, ranging from less than 2 (Ullman, 2001) to less than 5 (Schumacker & Lomax, 2004). SRMR values (0.019) lower than 0.05 indicate well-fitting models (Byrne, 1998; Diamantopoulos & Siguaw, 2000). A value of CFI 0.996 Diamantopoulos and Siguaw recognised as indicative of good fit (Hu & Bentler, 1999). A cut-off point of 0.95 has been recommended for the GFI (Miles & Shevlin, 1998). Values of 0.90 or greater indicate well-fitting models for the AGFI (Hooper, Coughlan, & Mullen, 2008). Besides, Hu and Bentler (1999) recommended NFI and TLI values of .95 or higher. Recently, a cut-off value for RMSEA close to .06 (Hu & Bentler, 1999) or a stringent upper limit of 0.07 (Steiger, 2007) is recommended. Although the chi square is the standard statistic to assess the overall fit of the model to the data, it is practically impossible not to reject the null hypothesis when large samples were used (Jöreskog & Sörbom, 1993). Finally, it was found that the learning leadership model agreed with the empirical data. As a result, the model was acceptance and researchers could establish whether specific paths were significant as illustrated in Figure 1. Table 3 indicates the three most highly weighted indicators of each learning leadership factor.
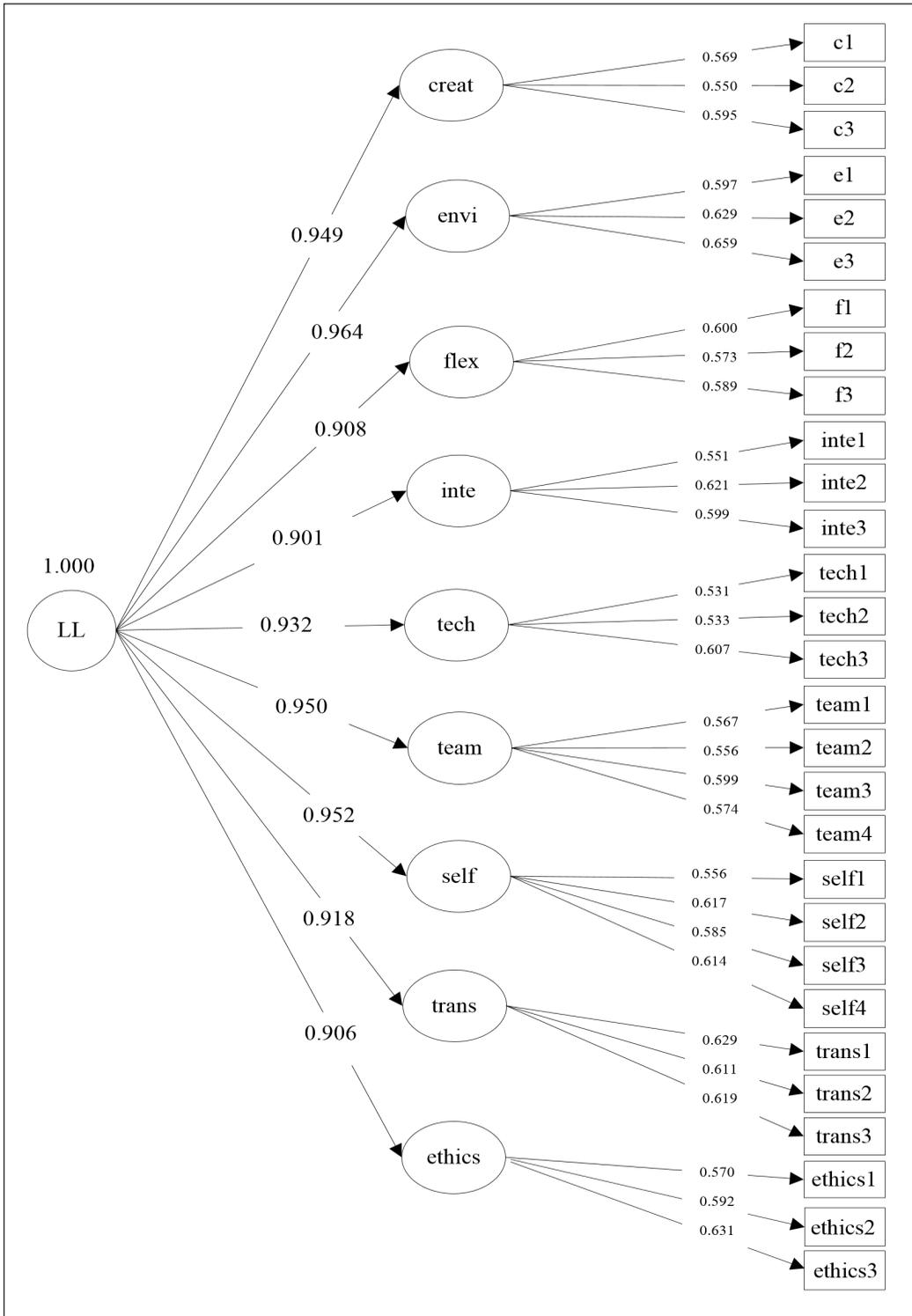
Figure 1. Learning leadership model

Table 3
The first three most highly weighted indicators

Key factors	Indicators
Creativity and courage	Elaborate thinking Rapid thinking Connected and critical thinking
Creation of an environment that supports learning and innovation	System management approach Construction of innovation Learning development
Flexibility	Being open to new ideas Being responsive to rapid change Providing freedom in ideas or recommendations
Integration	Application of the approach Construction a knowledge base Learning from experience
Usage of high technology in management and learning	Management by technology application Technology application policy Technology evaluation
Team learning	Creating innovations for learning and teaching Designing and constructing learning models in school Setting common goals
Self-directed learning	Research and development Planning for further study Building intrinsic motivation
Transformational tailor-made processes	Task assignment Professional development Acceptance of individual differences
Ethics in sufficiency philosophy	Deep and sustainable knowledge Social justice responsibility Understanding and ethical reasoning

Approach and Guidelines for Developing Learning Leadership Skills

Based on the three most highly weighted indicators of each learning leadership factor, coupled with the findings from the focus group discussion involving nine experts, researchers managed to draft the approach and guidelines needed to develop the learning leadership skills of secondary school principals. These are as follows:

1. Teachers' learning management should be focused by considering both physical and mental issues, in order to improve the creation of an environment that supports learning and innovation factors. The principals should expand their libraries to become a learning center, and also seek cooperation from other sectors.

2. Principals are encouraged to plan their own learning development, build their internal motivation, and

develop their critical, analytical and reflecting thinking, in order to promote their own self-directed learning.

3. In order to enhance team learning, principals should be required to attend training courses so that they are able to design a learning model utilizing systematic concepts, preserving learning customs and emphasizing learning belief and values.

4. Case studies boost the creativity and courage of principals by enhancing their thinking skills in terms of making them more deliberate, by sharpening their advanced thinking skills, and by speeding and connecting their abilities, which are keys for successful performance and innovation.

5. The principals should act as significant role models in terms of various programs related to evaluation and quality management, and also introduce policies for supporting the usage of technology. This should be emphasized to promote the usage of high technology in management and as a learning factor.

6. Principals are encouraged to attend training courses and learn from excellently performed school organizations with regards to various aspects such as job assignment, career development, smart human management, and conflict management. A consequence of this would be to change their mind set in terms of individual differences as a means of improving their transformational tailor-made processes.

7. To increase flexibility, principals should adapt themselves to change by attending seminars to raise their awareness, improve relationships and increase motivation, thus providing opportunities for them to receive comments from various channels before they draw up their organizational development programs.

8. Self-sufficiency economy philosophy includes self and social responsibilities and discipline which have been adopted by most of the schools. However, this knowledge needs to be broadened and deepened to be sustainable. More policies and work plans for social responsibility and fairness should be introduced, and patience and responsibility should be emphasized in order to elaborate ethics in sufficiency philosophy.

9. Training, seminars, and empirical learning should be implemented to extend and adapt knowledge, thus integrating it into actual learning experiences. This approach enables us to enhance integration in the field of science and techniques.

With regards to the aforementioned guidelines, the following steps are recommended as an approach to develop learning leadership skills:

Step 1: Determine the needs for learning leadership development

Step 2: Plan the learning leadership development

- Objectives and projects
- Project framework
- Determination of development means – self-development, training, study trips, workshops, career training and consultation, and initiating career learning community.

Step 3: Select methods

Step 4: Develop

Step 5: Monitor, observe and assess.

Finally, the drafted guidelines and approach were evaluated by 10 experts regarding their suitability in identifying the learning leadership skills of secondary school principals in Thailand. All the 10 experts had made quite positive comments and ranked the criteria of suitability and possibility assessment highly, including the suitability, possibility and usefulness of the developed approach and guidelines. Table 4 indicates the assessment results from the 10 experts.

Table 4
Suitability and possibility assessment

Suitability and possibility	Mean score ($\overline{X}$)
Suitability	
Concept and principle	4.43
Monitoring, observation, and assessment	4.42
Possibility	
Learning leadership development objectives	4.47
Concept and developing principle	4.45

DISCUSSION AND CONCLUSION

A model linking learning leadership with its key factors and indicators was proposed and tested. The findings showed that all the nine key factors have strong significant and positive effect on learning leadership. Considering the first three orders, it was found that the highest prediction effect was

creation of an environment that supports learning and innovation, self-directed learning, and team learning. Hence, good learning leaders have to follow a challenging and never-ending path of learning, which requires an open mind. However, having this character required the school principals to put ego aside and treat collaboration as more important than anything ever before.

The vital findings of this study are on the importance of the standard factor loading of each key factor in the learning leadership model. These findings revealed that all of the synthesized factors of learning leadership conformed well at a statistically significant level with the empirical data (Tuksino, 2009). Hence, all of the nine key factors have been identified as essential factors, and seem to be in accordance with both theory and previous research studies (Somprach et al., 2016; Somprach & Tang, 2016). This is for two mains reasons. First, an empirical definition was adopted based on the work of various scholars as revealed in the literature, including domestic and international articles which were elaborately reviewed. This enables the researchers to increase the possibility of accurately defining the terms according to the objectives of the research. Moreover, the results indicate that the assigned indicators conformed very well with the empirical data at a statistically significant level. This result is parallel with Wirachchai's (2002) study. Wirachchai mentioned that the empirical definition was close to the theoretical definition, and was supported by theory, concepts, academic documents, and studies. Second, researchers created a theoretical conceptual framework that was acceptable, in order to assess the quality of the developed indicators. Concepts were also identified through the interviews involving educational experts in Thailand who possessed significant levels of experience in terms of educational management in Thailand.

Nevertheless, the results illustrated that the GFI of the learning leadership model, followed by the designated criteria, revealed a structural relationship between the learning leadership of the principals and the empirical data. The most significant key factor in terms of learning leadership was the creation of an environment that supports learning and innovation. This implies that physical and mental environments play an important role in stimulating learning and is not limited only to the classroom. In the current digital era, knowledge can easily be accessed, and provided room for learning resources with a cost free basis. Thus, learning leadership practice enables principals to manage conflict through successful leadership interactions, and by coaching their staff to develop their potential, as indicated by Somprach et al., (2016). The suggested approach to developing learning leadership skills will help principals to develop resilience in the face of adversity, as indicated by Kohlreiser (2013).

Obviously, a better understanding of the relations among the indicators is essential for learning leadership model research. This study provides initial evidence about their causal relations. Furthermore, the findings of the experts have provided clear and practical messages for school principals that learning leadership is part of innovation learning creation. As a result, school principals should understand the strengths and weaknesses of their team, and be flexible in building new methods that challenging learning abilities (Somprach &

Tang, 2016). It is, therefore, recommended that school principals should communicate well among the team, resolve conflicts among the team members, and train their team to develop their potentialities while they are utilizing the created guidelines.

Finally, researchers would like to suggest to the Thailand Ministry of Education that they should prepare a leader preparation training program, including the learning leadership skills development approach of this study. School administrators at all levels must play a role in the learning process as "learning leaders" who lead learning as they learn to lead. The two most important key factors, namely the "creation of an environment that supports learning and innovation" and "self-directed learning," should be highlighted during the professional development process. The emphasis is on demonstrable behaviors, focusing on a team, and promoting learning across the board, and on learning that supports transformative actions, as these involve changes in throughputs and are measured by results (Altman & Iles, 1998). As to the structural model of learning leadership, its main aim is to highlight the centrality of leadership and team work in secondary school organizational learning. It can, however, become an analytical tool by serving as a comparative benchmark for learning organizations, and for furthering much-needed empirical study on how organizations learn.

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