THE DEVELOPMENT OF PRINCIPAL CURRICULUM LEADERSHIP CAPABILITIES MODEL FOR SECONDARY SCHOOLS IN SHANGHAI, CHINA

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Abstract: The purpose of this study aimed to develop principal curriculum leadership capabilities model for secondary schools in Shanghai. Both qualitative content analysis and quantitative survey were employed by this study. From the findings, the highest curriculum leadership capabilities of principals of current practice and expectations are the same factor, namely, empathizing. Findings from the gap analysis showed that the priorities of improvement of curriculum leadership capabilities for principals listed by the ranking of: (1) knower and expertise, (2) skills in curriculum development process, (3) diagnosis, (4) building a learning school, (5) strategy, (6) influencing, (7) self-regulation, (8) flexibility and responsiveness, and (9) decisiveness. All above major findings and the foundational theories including Shanghai context and academic leadership capabilities framework (Fullan & Scott, 2009) along with its supported theories were utilized to create the model. The proposed model was constructed in form of bloom graphics presenting its vision, mission, objectives, as well as its applications. It will be applied to equip principals well to shape the future curriculum leadership: leading from *curriculum* to *currere* in order to meet the needs of students and the society, and also, make principals become change capable curriculum leaders who have been dedicating to school sustainable development orientated to "Go global, and Stay local".

Keywords: Curriculum Leadership, Leading curriculum, Leadership Capabilities.

Introduction

As one the United Nations member countries, the government of China had made a solemn commitment to *Education for All. The Decade of Education for Sustainable Development (2005-2014)* put forward by UNESCO has been strongly advocating for national education policies to take action to ensure the sustainable development of education.

Base on the performance of PISA 2009 & 2012, secondary education in Shanghai should definitely be called "a stunning success"(OECD, 2010a, p. 3). At the same time, the sustainability of school development was under the spotlight in secondary education in Shanghai. It was set to the priority to balance Education in

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high level of student achievement. In another words, Shanghai government emphasized on gradually eliminating the gap between the strength and weakness schools and making efforts to reach balanced development of education in further higher quality level under the background of the existed students' achievement. Based on this, *Three-Year Action Plan for Promoting Curriculum Leadership of Principals* (2010-2012) was issued by Shangha Municipal Education Bureau in 2010. Shanghai principals began to undertake curriculum leadership activities in the background of national-wide 3-level curriculum management policy. They are thrown into dramatically change and work in "decentralized" with "centralization". It is a turnaround moment for them.

It is known that there is a large population of Shanghai, including over 12 million inhabitants and 13 million floating population. It was pretty challenges for education to consider and meet the diverse and various needs which came from this kind of large population. Meanwhile, with the development of the social and economic development, secondary education was requested to balance curriculum and pedagogy between globalization and localization.

All these changes reflected in deepening curriculum reform, which have been accompanied by greater curriculum choice for students and more latitude for local authorities. Curriculum is all life of students in schools, yet curriculum is slow to adopt change in any forms. So it calls for school leaders to look forward of school change in order to keep pace with rapidly evolving conditions, other than merely run the current curriculum well. Therefore, Shanghai education bureau set the priority of principal curriculum leadership, in order to build change capable and resilient schools for student achievement. This study just focused on curriculum leadership capabilities of principal who contribute to sustainability of secondary education.

Research Objectives

There are four objectives for the research as follows:

1. To determine the desirable curriculum leadership capabilities of principals;
2. To identify the current curriculum leadership capabilities of principals in secondary schools in Shanghai;
3. To identify the expected curriculum leadership capabilities of principals in secondary schools in Shanghai;
4. To develop a model for principal curriculum leadership capabilities for secondary schools in Shanghai

Literature Review

The review of literature in this study was described into three parts. The first part discussed about the context of curriculum reform in Shanghai, including the basic educational system, basic education curriculum, political and social-cultural context of curriculum reform and principal curriculum leadership development in shanghai as well. The second part discussed about two couples of interchangeable conceptions, namely, leadership & management as well as capability & competency. The extension viewed the theories of professional capabilities framework (Scott, G., 2003), the emotional competencies model (Goleman, 1998), reflection practice (Schön, 1983), core competence (Morgan, 1998), and academic leadership capability

framework (Fullan & Scott, 2009). The final part related researches concluded to types of curriculum, curriculum development process, related curriculum theories, the conception of curriculum leadership, curriculum leadership development, curriculum leadership models in practices. In addition, the review of content analysis methodology was depicted in this part.

Conceptual Framework

The conceptual framework depicted theoretical framework and the procedure of this study. The details were shown in Figure 1.

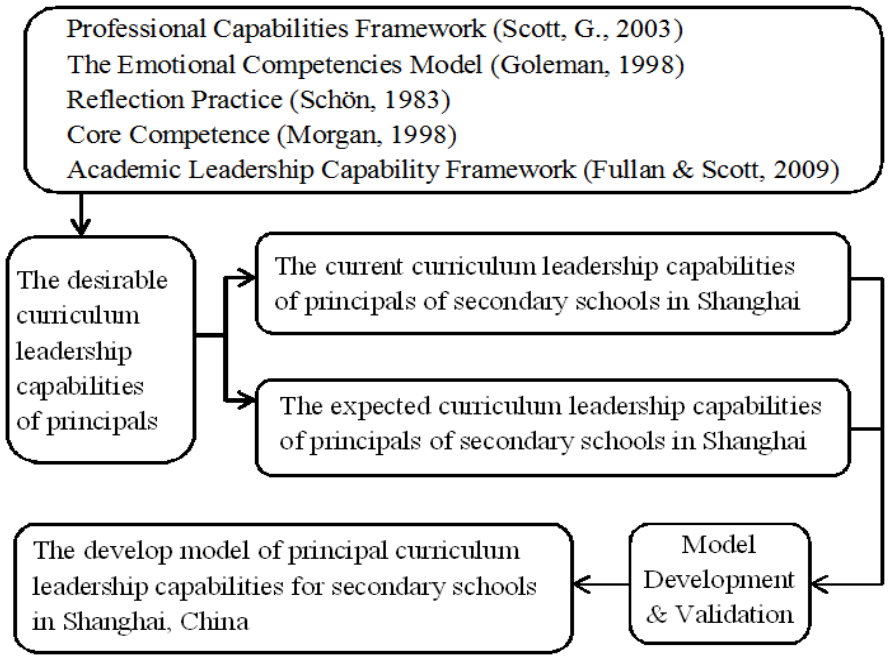

Figure 1: Conceptual Framework of Principal Curriculum Leadership Capabilities Model for Secondary Schools in Shanghai

Method/ Procedure

Both qualitative and quantitative methods were used to achieve the research objectives in this study. The qualitative content analysis was employed to determine the desirable competencies of curriculum leadership. The data from content analysis was interpreted into the scales and items of the fifth part questionnaire. In quantitative approach, the questionnaire was employed to survey the population to identify the current and expected curriculum leadership capabilities of principals in secondary schools in Shanghai. Gap analysis was used to determine the priorities of improvement of curriculum leadership capabilities of principals in secondary schools in Shanghai. And then, the proposed model was developed by the researcher, as well as validated and approved through focus group.

Qualitative Content Analysis

Resources selection: The books only on basic education were selected from three libraries which are St. Gabriel library, Cathedral of Learning library of Assumption University in Thailand, and the library in East China Normal University in Shanghai.

Population: All available books with the above criteria were in three libraries.

Samples: 153 books selected from three libraries for qualitative content analysis.

Validity and reliability: The result of content analysis for validation was examined and approved by 5 educational experts. With regards to reliability, the researcher ran the whole research as the main instrument and five experts' examination of the content validity, made the research achieve both intra-observer consistence and inter-observer reproducibility.

Data collection and analysis: The excerpts from books were collected and analyzed by content analysis. Data analysis was presented by dendrogram, clustering by the researcher.

Quantitative Survey

Population and samples: There are 628 public secondary schools (Grade 6-9) in all 17 different school districts which contained in four size kinds of schools, namely, Grade 6-9, Grade 9-12, Grade 1-9, and Grade 1-12 schools in Shanghai. The population of the study was 628 principals who worked in those schools. Samples size of 242 principals was determined from the given population by Krejcie and Morgan (1970) verification table.

Research instrument: The instrument designed for ascertaining curriculum leadership capabilities of principals was created from Scott (2008) and the researcher. The questionnaire was comprised of five parts. Part 1 about demography. Personal, interpersonal and cognitive capabilities of part 2, 3, and 4 questionnaires were adopted from "leadership capabilities survey" by Scott (2008) validated in a wide array of educational leadership researchers in the past two decades. And the fifth part questionnaire of skills and knowledge was developed by the researcher based on findings of content analysis.

Validity and reliability: The content validity of the questionnaire, 5 experts were invited to examine the questionnaire items as researcher adapted the three parts of questionnaire and one self-developed part of the questionnaire. Content validity of questionnaire was tested using Index of Congruence (IOC) method created by Rovineli & Hambleton (1977).

For reliability of the questionnaire, a polite test was conducted on 60 principals excluded the samples in this study. The Cronbach's Alpha was computed at .986.

Data collection: All the data were gathered from principals of 17 schools districts in full over the period of three months, from March to June, 2015. In the end, 306 of 343 questionnaires distributed were submitted by the respondents. Consequently, all the data generated from the 263 valid questionnaires from the returned ones were used to statistical analysis to accomplish the research objective 2 & 3.

Data analysis: All collected data were statistically analyzed by using content analysis and appropriate statistical tests to meet the objective 1 to 4.

For objective 1, the researcher employed content analysis as the main research methodology, and utilized dendrogram, clustering to present data analysis.

For objective 2, descriptive statistics, such as frequencies, percentage, was used to analyze the demographic data; mean($\bar{x}$), standard deviation (S.D.) was described to identify the current curriculum leadership capabilities of principals of secondary schools in Shanghai to reach objective 2;

For objective 3, mean($\bar{x}$), standard deviation (S.D.) was described to identify the expected curriculum leadership capabilities of principals of secondary schools in Shanghai to reach objective 3. And then, gap analysis was used to identify the priorities of development of principal curriculum leadership capabilities for secondary schools in Shanghai, by ranking the Mean differences from paired samples t-test.

In order to ascertain the mean and standard deviation, an interpretation criterion (Likert, Roslow, & Murpehy, 1934) for this study as follows:

Mean score (5) 4.50-5.00 = high
Mean score (4) 3.50-4.49 = upper middle
Mean score (3) 2.50-3.49 = middle
Mean score (2) 1.50-2.49 = lower
Mean score (1) 1.00-1.49 = low

For objective 4, the proposed model was underpinned and guide to create by the findings from research objectives 1 to 3 and the foundational theories of academic leadership capabilities framework along with its supported theories and needs of shanghai education. After that, the proposed model was validated and approved by 20 experts through focus group. And then, the objective 4 was met.

Findings/Result

For objective 1, the findings of key competencies from content analysis was report to one domain of skills & knowledge, along with four factors: knower & expertise, skills in curriculum development process, building a learning school, and self-organization. Supported by the theory of Academic leadership capabilities framework and integrated with three leadership capabilities domains of them, the desirable curriculum leadership capabilities of principals were determined to meet objective1, which was composed of four domains, namely, personal capabilities, interpersonal capabilities, cognitive capabilities, and skills & knowledge. 20 indicators of findings were categorized into four factors, which were tabulated into the scales and items of the fifth part “skills and knowledge” of the questionnaire in Table 1.

Table 1: The Scales and Items of Skills and Knowledge for Instrument

Skills and Knowledge	
Scales	Items
Knower &Expertise	Having a high level of up-to-date pedagogical knowledge;
	Having a high-level, up-to-date knowledge of relevant current developments in hidden curriculum content;
	Having a high-level, up-to-date knowledge of relevant current developments in null curriculum content;

Table 1: The Scales and Items of Skills and Knowledge for Instrument

Skills and Knowledge	
Scales	Items
	Understanding how to develop an effective distinctive school curriculum; Applying advanced, up-to-date technology for the construction of school curriculum and learning environment;
Skills in Curriculum Development Process	Understanding how to design and conduct an evaluation of a secondary education course; Knowing how to product a comprehensive curriculum plan by leading a curriculum team; Knowing how to successfully implement a curriculum plan or improvement; Knowing how to align curriculum to make sure school the written, taught, and the tested curricula is closely congruent; Knowing the steps to successful curriculum integration, and in what situation to integrate curriculum and instruction; Be able to initiate curriculum decision making structure involved in stakeholders;
Building a Learning School	Knowing how to create a collaborative learning culture for all in school; Providing focused and sustained professional Development; An ability to build professional learning communities in school; Understanding how school operates
Self-organization	Being able to manage my own ongoing professional learning and development; Being able to use IT effectively to communicate and perform key work functions; Being able to organize my work and manage time effectively; Setting curriculum priority, having a strong ego and confidence of school curriculum successful; Conducting themselves in a respectable, professional manner.

For objective 2 & 3, regardless of the findings from demographic information of principals, the findings from the current and expected curriculum leadership capabilities was presented in Table 2.

Table 2: Summary of Mean and Ranking of Current and Expected Curriculum Leadership

Capabilities of Principals of Secondary Schools in Shanghai

Curriculum Leadership Capabilities (CLC)	Mean		S.D.		Rank	
	$\bar{x}_c$	$\bar{x}_e$	C	E	C	E
Personal Capabilities (PC)						
Self-regulation (SR)	3.812	4.712	.388	.540	6	6
Decisiveness (DS)	3.877	4.696	.453	.580	3	7
Commitment (CM)	3.976	4.720	.438	.563	2	5
Interpersonal Capabilities (IC)						
Influencing (IN)	3.853	4.751	.371	.513	4	2
Empathizing (EM)	4.061	4.815	.322	.520	1	1
Cognitive Capabilities (CC)						
Diagnosis (DI)	3.600	4.680	.483	.634	10	10
Strategy (ST)	3.657	4.685	.471	.558	8	9
Flexibility & Responsiveness (FR)	3.833	4.728	.454	.606	5	4
Interpersonal Capabilities (IC)						
Knower &Expertise (KE)	3.418	4.623	.525	.648	11	11
Skill in Curriculum Development Process (SCDP)	3.414	4.596	.579	.697	12	12
Building a Learning School (BLS)	3.613	4.686	.484	.624	9	8
Self-organization (SO)	3.712	4.739	.419	.568	7	3
PC	3.888	4.718	.371	.507	2	2
IC	3.957	4.782	.331	.488	1	1
CC	3.697	4.697	.451	.561	3	3
SK	3.542	4.663	.463	.568	4	4
CLC	3.765	4.715	.369	.473		

Notes: $\bar{x}_c$= current mean; $\bar{x}_e$= expected mean; C= Current; E= Expected.

Table 2 illustrated the mean, S.D., and the ranking of current and expected curriculum leadership capabilities (CLC) of principals of secondary schools in Shanghai. The mean of the current practice was 3.765 which meant that current practices of principals is upper middle. The mean of the expectations was 4.715, which means the expectations is high.

The ranking from the highest to the lowest of current capabilities of the respondents was interpersonal capabilities ($\bar{x}_c$ =3.957), personal capabilities ($\bar{x}_c$ =3.888), cognitive capabilities ($\bar{x}_c$ =3.697 and), and skills & knowledge ($\bar{x}_c$ =3.542). The ranking of the expected capabilities was same as that of current capabilities was same as that of current practice, they are interpersonal capabilities ($\bar{x}_e$ =4.782), personal capabilities ($\bar{x}_e$ =4.718), cognitive capabilities ($\bar{x}_e$ =4.697), and skills & knowledge ($\bar{x}_e$ =4.663).

Meanwhile, Table 4.19 elaborated that the first three ranking of the highest factors of current curriculum leadership capabilities of respondents were Empathizing ($\bar{x}_c$ =4.061), Commitment ($\bar{x}_c$ =3.976), and Decisiveness ($\bar{x}_c$ =3.877). Yet, the first three ranking of the highest expected factors were Empathizing ($\bar{x}_e$ =4.815), influencing ($\bar{x}_e$ =4.751) and Self-organization ($\bar{x}_e$ =4.739) successively. Empathizing became the highest factors both in the current practices and expectations of the respondents.

The findings from gap analysis of curriculum leadership capabilities of principals in secondary schools was summarized to show the principals' consideration of the priorities of improvement should focus on the 9 factors, listed by the ranking of: (1) knower & expertise, (2) skills in curriculum development process, (3) diagnosis, (4) building a learning school, (5) strategy, (6) influencing, (7) self-regulation; (8) flexibility & responsiveness; (9) decisiveness.

Model Development and Validation

Model Development

The total MDF of principal curriculum leadership capabilities for secondary schools in Shanghai is 0.950. The indicators, which MDF was less than 0.950, were rejected in the proposed model. In ascertaining initial parameters to develop the model, the researcher concentrated on the highest MDF ranking of the four dimensions of 9 factors with 28 indicators, which were greater than the total MDF score.

The needs of shanghai secondary education, the academic leadership capabilities framework and its supported theories including Emotional Competencies Model (Goleman, 1998), reflection Practice (Schön, 1983), core Competence (Morgan, 1998), were viewed as the foundational theories.

It was the indicators found in the findings and foundational theories that guide how to create the draft model.

Model Validation

The draft model of principal curriculum leadership capabilities for secondary schools in Shanghai was validated through focus group. There were twenty experts, including an professor, president, vice-president, directors of educational research officer and leaders training division in three different Institutes of Education, and other 12 principals of shanghai secondary or high schools in the group workshop. The group experts analyzed and examined the draft model, the comments achieved to the consensus were made to: 1) put the factors of "empathizing" with highest mean score in the current practices and expectations into the draft model, 2) depict "the process of shaping future curriculum leadership" in the image of the draft model.

Addressing the revision of the draft model, the proposed model was finished in Figure 1.The proposed model was constructed in form of bloom graphics representing all factors that must be enhanced for principals to bridge the gap in order to shape the future curriculum leadership: leading from Curriculum to Currere, which meets the needs of students and society by comprehensive utilizing the profile capabilities.

Explanation of the Proposed Model

The image of the proposed model was presented in Figure 1, the core circle announced just the vision of the proposed model. There were three graphics like petals tightly surrounded the core circle. These three petal old graphics, which stemmed from the theories of reflective practice, emotional intelligences, and core competencies, presented the objectives of the proposed model, which indicated the principals should make effort on moving forward to them.

The four domains of Skills and knowledge, cognitive capabilities, personal capabilities, interpersonal capabilities were applied in developing this model. Yet, they were not directly shown on model because the 10 factors of these capabilities have been put together on the model in order to make more solid and explicit. The10 rounded graphics just represented those 9 factors in accordance with the findings of the MDF ranking and 1 factor from the highest current practices and expectations. The concrete 28 indicators of the first 9 factors could be specified as the goals of the draft model, which were not described within the Figure 1, just listed in the Goals of the following explanation of the Model shown as below:

Figure 2: The Development Model of Principal Curriculum Leadership Capabilities for Secondary Schools in Shanghai

Vision: Schools sustainable development oriented “Go global, and Stay local”.

Mission: Successfully shaping the future curriculum leadership to meet the needs of the students and society;

Objectives: Promoting the principals to be change capable curriculum leaders who are competent, reflective, and emotional, equipped well with curriculum leadership capabilities;

Goals: According to the research findings, implementing the objectives are the main goals for developing principal curriculum leadership capabilities model for secondary schools in Shanghai. Therefore, the theory of ALCF was applied as a tool for achieving the goals because the tool guided principals to continuously enhance their curriculum leadership capabilities so as to enable the schools to sustainably develop in both current and future. Each of the total 28 goals categorized into 9 factors was described in details as follows.

For factor 1: Knowledge & expertise:

Goal 1: To identify the sources of null curriculum content;

Goal 2: To make sense of the hidden curriculum content;

Goal 3: To apply technology to school curriculum and learning environment;

For factor 2: Skills in curriculum development process:

Goal 4: To make curriculum decisions involved in stakeholders;

Goal 5: To conduct curriculum integration—planned subject connections;

Goal 6: To conduct an evaluation of a secondary education course;

Goal 7: To initiate and develop a curriculum;

Goal 8: To product a comprehensive curriculum plan by leading a curriculum team

Goal 9: To successfully implement a curriculum plan or improvement;

For factor 4: Building a Learning School

Goal 10: Understanding how school operates;

Goal 11: To create a collaborative learning culture for all in school;

For factor 3: Diagnosis

Goal 12: To Identify the key issue or opportunity from a mass of information in any case;

Goal 13: To Recognize the link between seemingly unconnected activities;

Goal 14: To diagnose the latent causes of an issue and take appropriate action to address it;

Goal 15: To recognizing patterns in a complex situation;

For factor 5: Strategy

Goal 16: To see the best way to respond to perplexing situation;

Goal 17: To think creatively and laterally;

Goal 18: To see and then act on an opportunity for a new direction;

Goal 19: To outline and assess the likely bad result of another way of action;

For factor 6: Influencing:

Goal 20: To influence people’s behavior and decisions in effective ways;

Goal 21: To understand how the different groups that make up my school operate and influence different situations;

Goal 22: To work constructively with people who are over-enthusiastic or resistors;

For factor 7: Self-regulation:

Goal 23: To keep calm under pressure or when things take an unanticipated turn;

Goal 24: To bounce back from adversity;

Goal 25: to defer judgment and not jump in too quickly to resolve a problem;

For factor 8: Flexibility & responsiveness:
Goal 26: To adjust the action plan in response to problem that are identified during its implementation;
For factor 9: Decisiveness:
Goal 27: To be confident to take calculated risks;
Goal 28: To tolerate ambiguity and uncertainly.

An Application of the Model

Step one: Professional development
I. *Training programs*: The researcher set the "skills and knowledge" domain as the first priority of professional development. The first11 goals will be reached by providing principals with training programs with strategies or measures in details.

II. *Series workshop*: the workshops will be provided the opportunities for principals to promote their capabilities combined with Diagnosis, Strategy, Influencing, Self-regulation, Flexibility &Responsiveness, and Decisiveness by discussing and summarizing the offered 17 questions to reach the other 17 goals.

Step two: From knowledge to action: shaping the future curriculum leadership
The researcher put forward to lead from *curriculum* to *currere* in the future curriculum leadership. It is well known that the word of "curriculum" roots from the Latin word "currere". The Latin word "currere" is a verb, which means "to run", and the word "curriculum" used in the current is a noun, which normally points to the learning program. According to this, the meaning of "*curriculum*" here refers to make a curriculum run, and the meaning of "*currere*" is to run a curriculum.

The process of shaping the future curriculum leadership is to equip principals well with curriculum leadership capabilities to from a competent curriculum leader to a capable one, namely, to lead school from "making the national designated curriculum run" to "running a curriculum for the actual needs".

It is the foundation to understand the knowledge and skills of curriculum leadership. Principals come into being knowers & expertise, which will guide them to diagnose the issues and needs of school curriculum, make a right direction and an appropriated strategy with flexibility and responsiveness.

Competent curriculum leaders aims to make the designated curriculum run. In order to achieve national-wide curriculum standard, they are required to: 1) identify the national and local curriculum standard; 2) align the curriculum; 3) manage curriculum implementation; 4) evaluate the curriculum; and 5) maintain curriculum. They are required to create an authentic collaborative learning environment and resource for the school as well.

Capable curriculum leaders go beyond competent curriculum leaders. They should prepare for leading curriculum development for learners' needs. Therefore, they should lead a curriculum team to:

1) identify the benchmarks by evaluating the gap of national and local content standards, by assessing the needs, analyzing the social-economic-political situation, and planning the learning outcomes; 2) develop the integrated curriculum by integrated thinking, integrated approaches selection, and integrated the core concept

or theme of curriculum; 3) implement the integrated curriculum by differentiating classroom, scaffolding the instruction, and alternative assessment; and 4) make continuous curriculum change. They are also required to enhance self-organization to make themselves more knowledgeable and effective in the work, and influence others to commit to curriculum vision and school development, as well as make their own strong enough to take calculated risks and tolerate the ambiguity and uncertainly. Then, the future principal curriculum leadership will be well done.

Discussion

The findings from the current practices explained that current curriculum leadership capabilities (CLC) is upper middle. Among them, the ranking of current practices from highest to lowest are successively: interpersonal capabilities, personal capabilities, cognitive capabilities and skills & knowledge. It showed that it imperative for the current secondary school principals to improve their skills and knowledge of CLC. But, the findings showed that the ranking of the expectations was the same as that of current practices from highest to lowest, along with the highest factor “empathizing” and the two lowest factors “knower & expertise” and “skills in curriculum development process”. It followed that the principals longed to keep their previous advantages and expected them reach to high level. But, their courage and vigor had no enough to challenge their relatively weak domain or factors. Motivation for principals would be conducive for their following training or work. The findings of gap analysis explained that the highest domain was skills and knowledge and the lowest domain was interpersonal capabilities. The two highest factors were knower & expertise and skills in curriculum development process. It announced again that the professional knowledge and skills is the priority of principal curriculum leadership capabilities for secondary schools in shanghai. Once principals were equipped well with curriculum leadership capabilities, the future curriculum leadership would be shaped by leading from curriculum to currere. Then, principals automatically could become capable curriculum leaders who have been dedicating to school sustainable development oriented to “go global, and stay local”.

Recommendations

The development model was believed to be conducive to all levels of curriculum leaders and educational bodies. From this study, the recommendations are proposed to municipal education bureau, leader training department of educational institutes of school districts, principal as follows:1) The articulate and appropriated advocate from the municipal educational bureau or local educational office, such as the benchmarks and the direction; 2) To meticulously screen out the competent experts to guarantee the qualities’ of the instructors and mentors who accompanying with the professional development programs for principals and the practical use of the model; 3) Set the curriculum priority in schools, as well as lead team to conduct curriculum activities involving in all stakeholders.

Moreover, the future researchers’ could widen the research population to examine all principals in primary, middle, and high schools in different cities, or to examine the middle leaders and teachers in schools of basic education. And the

development of hidden or integrated curriculum also could be researched to achieve to holistic education in the future.

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