Benchmark for Building Professional Learning Communities in Schools: From Tools and Guideline to Practice in Thai Educational Context

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Abstract

This research was a part of research project entitled "Development of a Benchmark for Building Professional Learning Communities in Schools". The purposes of this study were (1) to develop the factors and indicators of professional learning communities (PLCs), and (2) to develop the criterion and indicators of PLCs building benchmark. This study employed the research & development methodology. The population of this research comprised administrators and teachers in basic education institutions. Samples of this research were 1,800 administrators and teachers from 180 basic education institutions, that selected by two-state random sampling. The instruments consisted of two key evaluation checklists. These evaluation checklists comprised five components according to factors and indicators of PLCs which developed. The data analysis of this research divided into two aspects, i.e., (1) the quantitative data were analyzed by using the descriptive statistics, i.e., frequency, percentage, mean, and standard deviation, also using the Mplus program for building the multilevel factor mixture model (ML-FMM) of PLCs in schools, and (2) the qualitative data were analyzed by using the content analysis technique. The results of model were conveyed the key information to evaluate the PLCs and to develop the PLCs building benchmark for schools. The evaluation capacities of them were expected that created while benchmarking in schools that applied from benchmarking processes of the Xerox Corporation, USA. Ultimately, it expected that conveyed the successful building the professional learning communities in schools to the Thai government to reach the national education standards based on the national education provision.

Introduction

A new approach for reculturing schools in the current of educational reform was called by educational policy makers and practitioners. International evidence indicated that whole school need to work and learn together to take that change. Hence, schools as communities where the learning were continuous, reflective, and focused on student learning. Therefore, the continuums of teachers learning were supporting the development of schoolwide professional learning communities (PLCs).

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The recent literatures discussed that organizational learning as mechanics or processes with the competency to reach the type of reculturing toward professional learning communities. The educational researchers and educators were addressed the challenges in trying to creating and sustaining the professional learning communities over time throughout the whole school system. The significantly approach that they suggested to schools was a benchmarking at the process of establish the professional learning communities.

According to the results of educational research on professional learning communities (PLCs), the PLCs consisted of five significant components that there were (1) shared norms and values, (2) collective focus on student learning, (3) collaboration, (4) deprivatized practice, and (5) reflective dialogue. Therefore, the PLCs were promoted by factors of the educational organizations that divided into two levels: (1) individual level, and (2) schools level.

However, there did not find the construction of PLCs' composite indicator that recognized the nature of those factors. Thus, this research constructed PLCs' composite indicator through the multilevel factor mixture model, it had an assumption conformed to that conditions.

Therefore, the PLCs' composite indicator building will be undertook by using the ten steps of the European Commission directorate general Joint Research Centre (EC/JRC) and the Organization for Economic Cooperation and Development (OECD). The qualities of that composite indicator will be examined; relevance, accuracy, timeliness, accessibility, interpretability, and coherence.

There will be developed the benchmark for building professional learning communities in schools, when this research had the PLCs' composite indicator through the multilevel factor mixture model. Ultimately, this research will be developed this benchmark based on benchmarking processes of the Xerox Corporation, USA. It expected that as tools and guideline for building the school professional learning communities in Thailand. Thus, conceptual framework of this study was shown as figure 1.

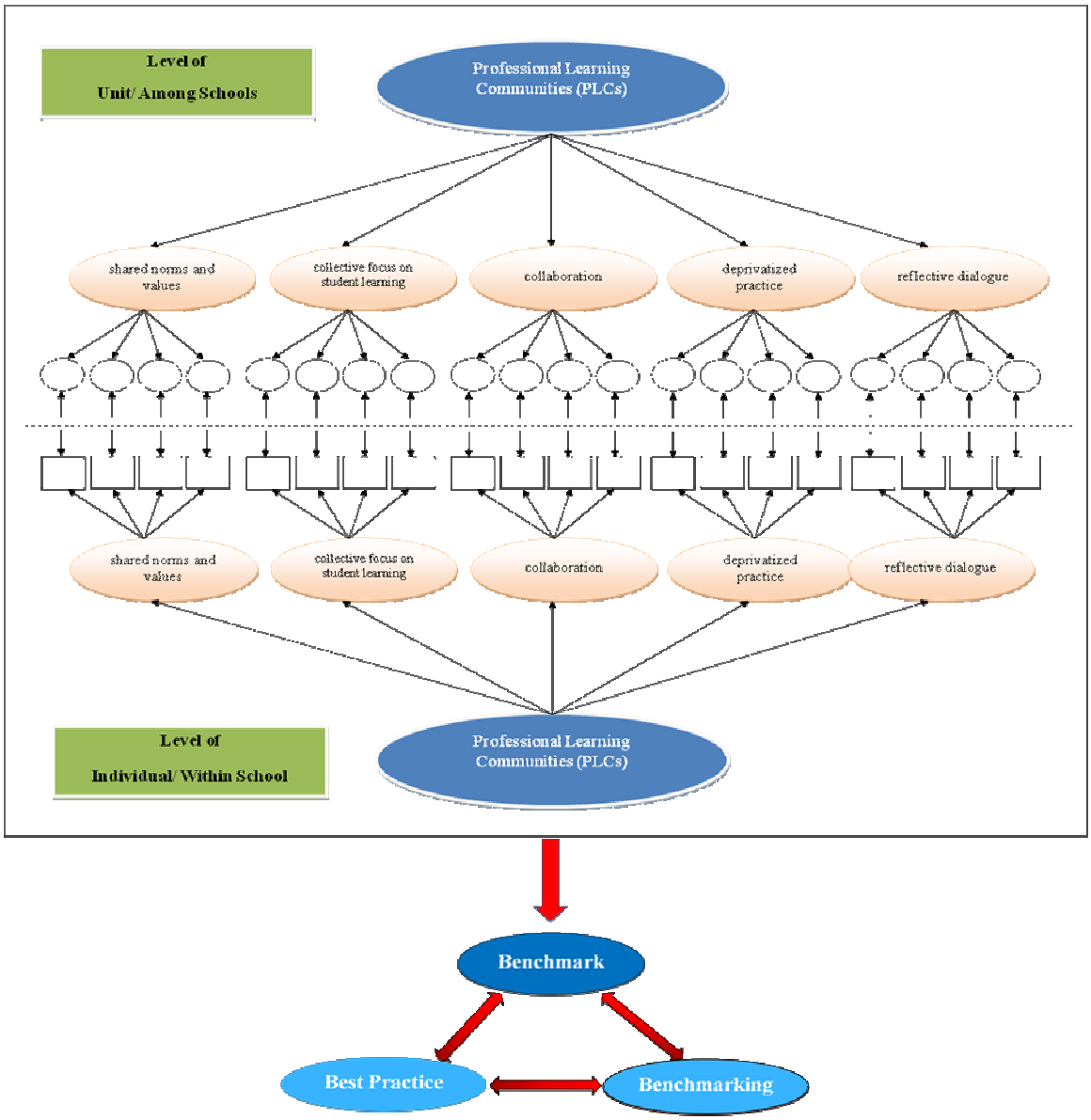

Figure 1. The multilevel factor mixture model (ML-FMM) of PLCs and the components of benchmark as a conceptual framework of this study

Objective

The major objective of this research was to develop the benchmark that comprising criterion and indicators for building professional learning communities (PLCs) in schools, whereas the minor objective of this research consisted of two items that there were (1) to develop the factors and indicators of professional learning communities (PLCs), and (2) to develop the criterion and indicators of PLCs building benchmark.

Method

The population of this research comprised administrators and teachers in basic education institutions, academic year 2008-2009, that there were 32,186 institutions.

Samples of this research divided into two groups, i.e., (1) the 1,800 administrators and teachers from 180 basic education institutions, that selected by two-state random sampling to build and develop the multilevel factor mixture model (ML-FMM) of professional learning communities

The instruments consisted of two key evaluation checklists for administrators and teachers that developed from educational researchers, i.e., Bryk, Camburn & Louis (1999), Silins, Mulford & Zarins (2002), Mulford (2006), Andrews & Lewis (2007), Bolam et al. (2008) and Ford, Branch & Moore (2008). These evaluation checklist were had five components according to factors and indicators of professional learning communities (PLCs) which developed.

The data collection of this research divided into three steps: (1) step I was documentary research for developing factors and indicators of PLCs; (2) step II was survey research for developing indicators and criterion of benchmark for building PLCs, this benchmark comprised administrators' benchmark and teachers' benchmark, responders were 1,800 administrators and teachers from 180 basic education institutions; (3) step III was building PLCs benchmark and its guideline to practice, this benchmark based on PLCs' score that top 25 percent of all schools were 45 schools.

The data analysis of this research divided into two aspects, i.e., (1) the quantitative data were analyzed by using the descriptive statistics, i.e., frequency, percentage, mean, and standard deviation, also using the Mplus program for building the multilevel factor mixture model (ML-FMM) of professional learning communities, and (2) the qualitative data were analyzed by using the content analysis technique.

Conclusion

This research aimed to develop the benchmark that comprising criterion and indicators for building professional learning communities (PLCs) in schools. The results of this research divided into two parts: part I was developing the factors and indicators of professional learning communities (PLCs); part II was developing the criterion and indicators of the PLCs building benchmark. The findings of these were as follows.

Part I: developing the factors and indicators of professional learning communities (PLCs).

The results of documentary research that there were more 40 articles or research papers related to PLCs in schools which well known such as; Bryk, Camburn & Louis (1999); King & Newmann (2001); McLaughlin & Talbert (2001); Bryk & Schneider (2002); Silins, Mulford &

Zarins (2002); Seashore, Anderson & Riedel (2003); Hord (2004); Bulkley & Hicks (2005); Stoll et al. (2005); Gile & Hargreaves (2006); Forde et al. (2006) Andrews & Lewis (2007); Gajda & Koliba (2007); Ford, Branch & Moore (2008); Bolam et al. (2008). There synthesized the PLCs divided into five components: (1) shared norms and values, (2) collective focus on student learning, (3) collaboration, (4) deprivatized practice, and (5) reflective dialogue. Details of these components were concluded as follows.

1. Shared norms and values was utilizing the notions and desired code of conducts of administrators and teachers/ educational personnel to perform for creating their sense to be a mere part of school, and for collective responding about technical knowledge that school needs to use it for reaching the key educational goals and outcomes of school.

2. Collective focus on student learning was performance of administrators and teachers/ educational personnel for integrating the school management, teaching techniques and others strategies of learning to connect to students' learning process according to high expectation and commitment of administrators and teachers/ educational personnel.

3. Collaboration was collective performance in social activities of administrators and teachers/ educational personnel according to assigned tasks of individuals and of mutual school to get an advantage or benefit about skills related to successfulness and expertise of performance, acquired knowledge and empowered capacity of school.

4. Deprivatized practice was performance of administrators and teachers/ educational personnel which opened their tasks to public activities. There received a creatively feedback from colleagues for learning, reviewing and creating their performance that based on socialization and risk management.

5. Reflective dialogue was conversation among administrators and teachers/ educational personnel which emphasized an expression about organization, equity, justice, autonomy and self-determination of them and school for reflecting the school management, instruction and learning activities of school. There based on the continuous performance in their works for reaching a high advantage or benefit that was learning of students.

The components of PLCs according to above had a construct validity by consideration form the experts. This research developed the components of PLCs for administrators and teachers. Both PLCs of administrators and of teachers were also comprised five factors and 77 indicators. The reliability of PLCs of administrators by cronbach s' coefficience method was 0.88 and of PLCs of teachers was 0.92. The results from multilevel factor mixture model (ML-FMM) analysis, as for the PLCs of administrators was conducted by single level analysis, shown factors of PLCs that high weighted were factor namely shared norms and values, reflective dialogue, collective focus on student learning, collaboration, and deprivatized practice, respectively. Whereas, the PLCs of teachers was conducted by two-level analysis (level one was teacher and

level two was administrator), shown factors of PLCs that high weighted were factor namely collective focus on student learning, collaboration, and deprivatized practice, reflective dialogue, shared norms and values, respectively.

Part II: developing the criterion and indicators of PLCs building benchmark.

Building PLCs benchmark based on PLCs' score that top 25 percent of all schools. There were 45 schools. This research developed both PLCs of administrators and of teachers that also comprised five factors and 77 indicators. The criterion and indicators of both PLCs building benchmark were shown as follows.

1. The PLCs benchmark of administrators.

Table 1 shown criterion and indicators of administrators' PLCs benchmark. There found that factor namely, Building the shared norms and values were 15 indicators. Indicator that high mean of performance was sharing role and leadership among colleagues for working an assigned task and/ or school management (mean = 4.84, 2 hr(s)/week).

Factor namely, Performing the collective focus on students' learning were 17 indicators. Indicator that high mean of performance was creating the conditions for stimulating students to be an active learner and for providing the trustworthy teaching techniques to students. (mean = 4.42, 16 times/semester).

Factor namely, collaborative practice were 15 indicators. Indicator that highest mean of performance was collaborating with the colleagues to utilize the professional networks or related association for interchanging the professional learning. (mean = 4.29, 8 hrs/semester).

Factor namely, deprivatized practice were 15 indicators. Indicator that highest mean of performance was Opening to evaluation from directors, colleagues, school committees or parents for continuously improving the school management. (mean = 4.29, 2 times/semester).

Factor namely, reflective dialogue were 15 indicators. Indicator that highest mean of performance was Expressing the decision and leadership of head and/ or personnel that participating in decision making at all level of school. (mean = 4.69, 8 times/semester).

Table 1 The criterion and indicators of PLCs benchmark of administrators.

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
1. Building the shared norms and values			
1.1 Share educational values based on "all students can be learned and developed" among colleagues.	4.02	0.45	4 times/semester
1.2 Offer enough time for participating in planning and developing the school.	4.07	0.45	1 hr(s)/week
1.3 Share role and leadership among colleagues for working an assigned task and/ or school management.	4.84	0.37	2 hr(s)/week
1.4 Share an experience and a successfulness of professional performance among colleagues.	3.98	0.58	2 hr(s)/week
1.5 Share an experience of learning and developing the students among parents and communities.	3.69	0.60	2 times/semester
1.6 Study and review the self learning process for contributing the learning of students.	3.84	0.71	1 hr(s)/week
1.7 Offer collective responsibility for driving the students to learn.	4.22	0.42	2 times/semester
1.8 Acquire the companies for self development and self professional progress from the professional networks or related associations.	4.27	0.45	16 times/semester

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
1.9 Respect to dignity and difference of individuals and rely on the colleagues and directors.	4.04	0.21	92 %/semester
1.10 Congratulate and celebrate the successfulness of school and personnel both inside and outside school.	4.20	0.40	90 %/semester
1.11 Inspire oneself to perform with the tolerance or none disappointment for working an assigned task and/ or school management.	4.78	0.42	98 %/semester
1.12 Actively acquire the notions, media, techniques and approaches related school management from colleagues and other schools.	4.33	0.48	80 %/semester
1.13 Feel the school as place that stimulate and challenge the development of educational profession.	4.07	0.25	95 %/semester
1.14 Understand the self role and self function, and connect that to another one for the mutual role and function of school with systemically.	4.67	0.48	96 %/semester
1.15 Engage the evaluation and monitor for self development, educational profession and students' learning process.	4.44	0.50	90 %/semester
2. Performing the collective focus on students' learning			
2.1 Analyze and synthesize the lesson learned from colleagues or directors who are the best or good practice.	3.98	0.34	2 times/semester
2.2 Build the information/ database and/ or collect the data for monitoring the students' progress.	3.64	0.57	1 hr(s)/ week
2.3 Offer a creative feedback to colleagues and/ or teamwork who assigned to develop the students and related activities.	3.93	0.72	82 %/semester
2.4 Launch the project or program for enhancing the gifted students.	3.89	0.75	1 project(s)/semester
2.5 Create the conditions for stimulating students to be an active learner and for providing the trustworthy teaching techniques to students.	4.42	0.50	16 times/ semester
2.6 Follow up and develop the professional progress of individual teachers.	3.44	0.69	4 times/semester
2.7 Hold up the workshop/ action meeting for teachers or personnel to produce and develop their materials with efficiency for classroom learning activities.	4.07	0.65	2 times/semester
2.8 Conduct the classroom action research or education research with colleagues, experts and researchers among other officials for solving the students' problems and/ or the qualities of educational provision.	3.27	0.54	0.50 piece(s)/semester
2.9 Conduct the research for solving the problems of school management.	3.16	0.47	0.50 piece(s)/semester
2.10 Disseminate the education research or classroom action research to colleagues inside school.	3.84	0.52	1 times/semester
2.11 Disseminate the education research or classroom action research to colleagues outside school.	3.27	0.54	1 times/semester
2.12 Disseminate the education research or classroom action research to colleagues both inside and outside school.	3.13	0.40	1 times/semester
2.13 Engage the collecting the intellectual sources from all sectors both inside and outside school for solving the students' problems and for developing the students to be an excellence learner and to get a full capacity of them.	3.89	0.93	12 times/semester
2.14 Receive guidance of the consultant team from government and/ or private sectors for enhancing the gifted students and/ or for solving the problems of disability students.	3.07	0.25	6 times/semester
2.15 Acquire new notions and teaching techniques from colleagues both inside and outside school.	3.87	0.46	3 times/semester
2.16 Apply to membership of development project or pilot project of the office in the educational service area level, province level and/ or national level.	3.98	0.45	2 project(s)/semester
2.17 Use the information/ database about instructions, managements and innovations/ research findings that has a significant practice from other schools, universities or external offices.	4.07	0.25	8 times/semester
3. Collaborative practice			
3.1 Collaborate with colleagues to develop the school curriculum for providing the students' opportunity to reach the key learning processes.	4.09	0.29	3 hr(s)/semester
3.2 Collaborate with colleagues to learn and to review the assigned tasks and instructions.	4.04	0.37	8 hr(s)/semester
3.3 Collaborate with colleagues to launch the project for developing and enhancing the gifted students.	4.11	0.57	10 hr(s)/semester
3.4 Collaborate with colleagues to solve the addressed problems of school.	4.22	0.42	10 hr(s)/semester
3.5 Collaborate with colleagues to build and to develop the learning sources both inside and outside school.	3.80	0.55	16 hr(s)/semester
3.6 Collaborate with colleagues to develop and to empower the evaluation capacities for transferring that to students.	4.09	0.47	8 hr(s)/semester
3.7 Collaborate with colleagues to site visit and/ or for training and seminar which enlightening the learning processes, acquiring innovations and professional knowledge with continuum.	4.22	0.42	12 hr(s)/semester
3.8 Collaborate with colleagues to develop the instruments for evaluating the students' academic achievement.	3.84	0.52	2 hr(s)/semester
3.9 Collaborate with colleagues to evaluate a successfulness of strategies or teaching techniques that affect to the students' learning.	3.98	0.55	2 hr(s)/semester
3.10 Collaborate with colleagues to improve and to develop the strategies or teaching	4.04	0.52	2 hr(s)/semester

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
techniques for utilizing a mutual practice in school.			
3.11 Collaborate with colleagues to utilize a new strategies or teaching techniques for reaching a mutual goal of school and/ or teamwork.	3.91	0.51	2 hr(s)/semester
3.12 Collaborate with colleagues to reflective dialogue the other strategies or notions of performance for acquiring the best practice.	3.76	0.61	2 hr(s)/semester
3.13 Collaborate with colleagues to interested cooperate and to offer a kindly relationship together for enhancing the practical unity of school.	3.91	0.42	12 hr(s)/semester
3.14 Collaborate with colleagues to provide a full responsibility for enhancing the practical efficiency of school.	4.18	0.39	12 hr(s)/semester
3.15 Collaborate with colleagues to utilize the professional networks or related association for interchanging the professional learning.	4.29	0.55	8 hr(s)/semester
4. Deprivatized practice			
4.1 Regard to viewpoint of school management from colleagues, teamwork, school committees, students and parents.	4.04	0.21	16 times/semester
4.2 Attend to training or coaching in assigned tasks and learning activities from teamwork.	4.13	0.46	4 times/semester
4.3 Offer the time or opportunity for participating in learning activities together with colleagues/ teamwork.	4.11	0.32	3 hr(s)/semester
4.4 Share or interchange the materials, books and a new management approach among colleagues/ teamwork.	4.18	0.49	2 times/semester
4.5 Share or interchange the information about results of developing students' learning process together with colleagues/ teamwork to convey it to solve and/ or develop the students with continuum.	3.93	0.69	2 times/semester
4.6 Open to evaluation from directors, colleagues, school committees or parents for continuously improving the school management.	4.29	0.46	2 times/semester
4.7 Improve and change the school management according to an approach of colleagues or administrators who are the best or good practice.	4.09	0.60	2 times/semester
4.8 Share and learn a new things together with colleagues, teamwork and/ or students for revisioning of learning, acquiring the innovations, and for continuously creating the professional knowledge.	4.07	0.65	4 times/semester
4.9 Utilize the acquired knowledge from practice, training, workshop, seminar and/ or site visit both inside and outside school with continuum.	4.13	0.46	90 %/semester
4.10 Share or interchange the viewpoint, information and database both inside and outside school about results of developing students' learning process together with colleagues/ teamwork to convey it to solve and/ or develop the students with continuum.	3.98	0.26	4 times/semester
4.11 Analyze and review the results of performance to acquire the alternative approach of problem solving that optimized to colleagues/ teamwork.	3.90	0.71	4 times/semester
4.12 Collect and maintain the results of performance with systemically to make a database for self development and educational quality assurance.	3.71	0.55	3 times/semester
4.13 Receive guidance for solving the obstacles or problems in performance and regard to supervision from directors and experts within school.	3.47	0.55	3 times/semester
4.14 Receive guidance for solving the obstacles or problems in performance and regard to supervision from directors and experts outside school.	3.09	0.36	2 times/semester
4.15 Acquire and utilize the findings of research from outside school that related and significantly affected to practice for developing self performance.	4.07	0.39	88 %/semester
5. Reflective dialogue			
5.1 Express the fairness of human management based on performance capacity for promoting the rank or income and enhancing the continuum of professional learning with sincerely.	4.02	0.34	8 times/semester
5.2 Express the love, commitment, concerning and feeling to take care and to be a mere ownership of school.	4.07	0.25	8 times/semester
5.3 Express the efficiency of materials and teaching techniques in school.	4.22	0.42	12 times/semester
5.4 Express the students' qualities that solved their problems, and the obstacles that addressed in problem solving process.	4.27	0.45	10 times/semester
5.5 Express the sufficiency and reaching in learning sources both inside and outside school.	4.33	0.48	10 times/semester
5.6 Express the equality and opportunity to engage in professional development both inside and outside school.	4.38	0.49	8 times/semester
5.7 Express the propriety and efficiency of time schedule for collective performance within school.	4.36	0.48	5 times/semester
5.8 Express the concerning in the learning process of students within school.	4.44	0.50	10 times/semester
5.9 Express the equity and equality of assigning tasks within school.	4.16	0.37	8 times/semester
5.10 Express the participating in the processes of problem solving and developing the students in school from the other sectors both inside and outside school.	4.22	0.42	8 times/semester
5.11 Express the clarity and propriety of regulation of school and related offices.	4.20	0.40	5 times/semester
5.12 Express the accountability and good governance within school.	4.11	0.32	3 times/semester
5.13 Express the decision and leadership of head and/ or personnel that participating in decision making at all level of school.	4.69	0.47	8 times/semester
5.14 Express the driving mechanics and developments of instructions or learning activities within school.	4.67	0.48	12 times/semester
5.15 Express the driving mechanics and developments of interchanging in professional networks and/ or related associations.	4.60	0.50	16 times/semester

* Level of performance based on 5-point rating scale of Likert.

2. The PLCs benchmark of teachers.

Table 2 shown criterion and indicators of teachers' PLCs benchmark. There found that factor namely, Building the shared norms and values were 15 indicators. Indicator that high mean of performance was sharing role and leadership among colleagues for working an assigned task and/ or instruction. (mean = 4.22, 3 hr(s)/week).

Factor namely, Performing the collective focus on students' learning were 17 indicators. Indicator that high mean of performance was offering a creative feedback to students who assigned tasks and related activities. (mean = 4.41, 88 %/semester).

Factor namely, collaborative practice were 15 indicators. Indicator that highest mean of performance was collaborating with the colleagues to develop and to empower the evaluation capacities for transferring that to students. (mean = 4.28, 12 hrs/semester).

Factor namely, deprivatized practice were 15 indicators. Indicator that highest mean of performance was sharing or interchanging the materials, books and a new instruction approach among colleagues/ teamwork. (mean = 4.24, 3 times/semester).

Factor namely, reflective dialogue were 15 indicators. Indicator that highest mean of performance was expressing driving mechanics and development of instructions or learning activities within school. (mean = 4.44, 8 times/semester).

Table 2 The criterion and indicators of PLCs benchmark of teachers.

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
1. Building the shared norms and values			
1.1 Share educational values based on "all students can be learned and developed" among colleagues.	3.74	0.74	6 times/ semester
1.2 Offer enough time for participating in planning and developing the school.	3.61	0.64	2 hr(s)/ week
1.3 Share role and leadership among colleagues for working an assigned task and/ or instruction.	4.22	0.49	3 hr(s)/ week
1.4 Share an experience and a successfulness of professional performance among colleagues.	4.08	0.59	3 hr(s)/ week
1.5 Share an experience of learning and developing the students among parents and communities.	3.60	0.70	4 times/ semester
1.6 Study and review the self learning process for contributing the learning of students.	3.62	0.57	2 hr(s)/ week
1.7 Offer collective responsibility for driving the students to learn.	3.91	0.58	5 times/ semester
1.8 Acquire the companies for self development and self professional progress from the professional networks or related associations.	3.85	0.58	3 times/ semester
1.9 Respect to dignity and difference of individuals and rely on the colleagues and directors.	3.66	0.72	78 %/ semester
1.10 Congratulate and celebrate the successfulness of school and personnel both inside and outside school.	3.64	0.70	77 %/ semester
1.11 Inspire oneself to perform with the tolerance or none disappointment for working an assigned task and/ or instruction.	4.03	0.62	82 %/ semester
1.12 Actively acquire the notions, media, techniques and approaches related instruction from colleagues and other schools.	3.55	0.55	75 %/ semester
1.13 Feel the school as place that stimulate and challenge the development of educational profession.	4.05	0.68	83 %/ semester
1.14 Understand the self role and self function, and connect that to another one for the mutual role and function of school with systemically.	4.15	0.55	86 %/ semester
1.15 Engage the evaluation and monitor for self development, educational profession and students' learning process.	4.19	0.56	88 %/ semester
2. Performing the collective focus on students' learning			
2.1 Analyze and synthesize the lesson learned from colleagues or directors who are the best or good practice.	4.06	0.66	2 times/ semester
2.2 Build the information/ database and/ or collect the data for monitoring the students' progress.	4.08	0.63	1 hr(s)/ week

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
2.3 Offer a creative feedback to students who assigned tasks and related activities.	4.41	0.57	88 %/ semester
2.4 Launch the project or program for enhancing the gifted students.	4.14	0.51	2 project(s)/ semester
2.5 Create the conditions for stimulating students to be an active learner and for providing the trustworthy teaching techniques to students.	4.19	0.56	4 times/ semester
2.6 Follow up learning and develop the academic progress of individual students.	4.19	0.56	92 %/ semester
2.7 Attend to workshop/ action meeting to produce and develop materials with efficiency for classroom learning activities.	4.19	0.56	85 times/ semester
2.8 Conduct the classroom action research or single research with colleagues, experts and researchers among other officials for solving the students' problems and/ or the qualities of educational provision.	4.07	0.41	2 piece(s)/ semester
2.9 Conduct the classroom action research or single research for solving the students' problems and/ or the qualities of educational provision.	4.29	0.48	1 piece(s)/ semester
2.10 Disseminate the education research or classroom action research to colleagues inside school.	4.16	0.46	1 times/ semester
2.11 Disseminate the education research or classroom action research to colleagues outside school.	3.58	0.76	1 times/ semester
2.12 Disseminate the education research or classroom action research to colleagues both inside and outside school.	3.22	0.51	1 times/ semester
2.13 Engage the collecting the intellectual sources from all sectors both inside and outside school for solving the students' problems and for developing the students to be an excellence learner and to get a full capacity of them.	3.65	0.69	4 times/ semester
2.14 Receive guidance of the consultant team from government and/ or private sectors for enhancing the gifted students and/ or for solving the problems of disability students.	3.88	0.62	3 times/ semester
2.15 Acquire new notions and teaching techniques from colleagues both inside and outside school.	3.96	0.60	5 times/ semester
2.16 Apply to membership of development project or pilot project of the office in the educational service area level, province level and/ or national level.	4.04	0.64	1 project(s)/ semester
2.17 Use the information/ database about instructions, and innovations/ research findings that has a significant practice from other schools, universities or external offices.	3.82	0.75	4 times/ semester
3. Collaborative practice			
3.1 Collaborate with colleagues to develop the school curriculum for providing the students' opportunity to reach the key learning processes.	4.21	0.45	4 hr(s)/ semester
3.2 Collaborate with colleagues to learn and to review the assigned tasks and instructions.	4.10	0.44	10 hr(s)/ semester
3.3 Collaborate with colleagues to launch the project for developing and enhancing the gifted students.	4.14	0.40	16 hr(s)/ semester
3.4 Collaborate with colleagues to solve the addressed problems of school.	4.08	0.37	12 hr(s)/ semester
3.5 Collaborate with colleagues to build and to develop the learning sources both inside and outside school.	4.20	0.45	16 hr(s)/ semester
3.6 Collaborate with colleagues to develop and to empower the evaluation capacities for transferring that to students.	4.28	0.47	12 hr(s)/ semester
3.7 Collaborate with colleagues to site visit and/ or for training and seminar which enlightening the learning processes, acquiring innovations and professional knowledge with continuum.	4.21	0.40	8 hr(s)/ semester
3.8 Collaborate with colleagues to develop the instruments for evaluating the students' academic achievement.	4.27	0.46	6 hr(s)/ semester
3.9 Collaborate with colleagues to evaluate a successfulness of strategies or teaching techniques that affect to the students' learning.	3.93	0.58	3 hr(s)/ semester
3.10 Collaborate with colleagues to improve and to develop the strategies or teaching techniques for utilizing a mutual practice in school.	4.08	0.51	5 hr(s)/ semester
3.11 Collaborate with colleagues to utilize a new strategies or teaching techniques for reaching a mutual goal of school and/ or teamwork.	3.58	0.76	3 hr(s)/ semester
3.12 Collaborate with colleagues to reflective dialogue the other strategies or notions of performance for acquiring the best practice.	3.68	0.86	8 hr(s)/ semester
3.13 Collaborate with colleagues to interested cooperate and to offer a kindly relationship together for enhancing the practical unity of school.	4.15	0.42	8 hr(s)/ semester
3.14 Collaborate with colleagues to provide a full responsibility for enhancing the practical efficiency of school.	4.11	0.61	12 hr(s)/ semester
3.15 Collaborate with colleagues to utilize the professional networks or related association for interchanging the professional learning.	4.01	0.62	6 hr(s)/ semester
4. Deprivatized practice			
4.1 Regard to viewpoint related self instruction from colleagues, teamwork, school committees, students and parents.	4.12	0.51	4 times/ semester
4.2 Attend to training or coaching in assigned tasks and learning activities from teamwork.	4.14	0.42	3 times/ semester
4.3 Offer the time or opportunity for participating in learning activities together with colleagues/ teamwork.	4.19	0.43	8 hr(s)/ semester
4.4 Share or interchange the materials, books and a new instruction approach among colleagues/ teamwork.	4.24	0.53	3 times/ semester
4.5 Share or interchange the information about results of developing students' learning process together with colleagues/ teamwork to convey it to solve and/ or develop the students with continuum.	4.18	0.51	3 times/ semester
4.6 Open to evaluation from directors, colleagues, school committees or parents for	4.11	0.43	2 times/ semester

Items	Level of performance*		Number/ Percentage of performance
	Mean	SD	
continuously improving the instruction.			
4.7 Improve and change the instruction according to an approach of colleagues who are the best or good practice.	4.03	0.22	3 times/ semester
4.8 Share and learn a new things together with colleagues, teamwork and/ or students for revisioning of learning, acquiring the innovations, and for continuously creating the professional knowledge.	4.13	0.45	4 times/ semester
4.9 Utilize the acquired knowledge from practice, training, workshop, seminar and/ or site visit both inside and outside school with continuum.	4.15	0.42	85 %/ semester
4.10 Share or interchange the viewpoint, information and database both inside and outside school about results of developing students' learning process together with colleagues/ teamwork to convey it to solve and/ or develop the students with continuum.	4.12	0.42	2 times/ semester
4.11 Analyze and review the results of performance to acquire the alternative approach of problem solving that optimized to colleagues/ teamwork.	4.12	0.51	2 times/ semester
4.12 Collect and maintain the results of performance with systemically to make a database for self development and educational quality assurance.	4.13	0.41	4 times/ semester
4.13 Receive guidance for solving the obstacles or problems in performance and regard to supervision from directors and experts within school.	4.00	0.45	3 times/ semester
4.14 Receive guidance for solving the obstacles or problems in performance and regard to supervision from directors and experts outside school.	3.60	0.62	2 times/ semester
4.15 Acquire and utilize the findings of research from outside school that related and significantly affected to practice for developing self performance.	4.03	0.42	82 %/ semester
5. Reflective dialogues			
5.1 Express the fairness of human management based on performance capacity for promoting the rank or income and enhancing the continuum of professional learning with sincerely.	3.80	0.78	5 times/ semester
5.2 Express the love, commitment, concerning and feeling to take care and to be a mere ownership of school.	3.87	0.74	4 times/ semester
5.3 Express the efficiency of materials and teaching techniques in school.	3.80	0.66	6 times/ semester
5.4 Express the students' qualities that solved their problems, and the obstacles that addressed in problem solving process.	4.10	0.61	5 times/ semester
5.5 Express the sufficiency and reaching in learning sources both inside and outside school.	4.18	0.52	5 times/ semester
5.6 Express the equality and opportunity to engage in professional development both inside and outside school.	4.20	0.46	5 times/ semester
5.7 Express the propriety and efficiency of time schedule for collective performance within school.	4.28	0.47	4 times/ semester
5.8 Express the concerning in the learning process of students within school.	4.40	0.49	8 times/ semester
5.9 Express the equity and equality of assigning tasks within school.	4.04	0.55	6 times/ semester
5.10 Express the participating in the processes of problem solving and developing the students in school from the other sectors both inside and outside school.	4.18	0.44	8 times/ semester
5.11 Express the clarity and propriety of regulation of school and related offices.	3.92	0.62	4 times/ semester
5.12 Express the accountability and good governance within school.	4.16	0.51	3 times/ semester
5.13 Express the decision and leadership of head and/ or personnel that participating in decision making at all level of school.	4.27	0.52	5 times/ semester
5.14 Express the driving mechanics and developments of instructions or learning activities within school.	4.44	0.55	8 times/ semester
5.15 Express the driving mechanics and developments of interchanging in professional networks and/ or related associations.	4.24	0.54	10 times/ semester

* Level of performance based on 5-point rating scale of Likert.

Ultimately, this research aimed to utilize above benchmark based on benchmarking processes of the Xerox Corporation, USA. It expected that as tools and guideline for building the school professional learning communities in Thailand. The guidelines of PLCs according to benchmarking processes were four main steps that comprised ten sub steps. Details of these steps were concluded as follows.

1. Planning step. School should more concern and offer enough time for this step to reduce a mistake and to assure that next steps are more effectiveness and efficiency. This step comprised three sub steps such as (1) identify what is to be benchmarked, (2) identify comparative companies, and (3) determine data collection method and collect data.

For identifying what is to be benchmarked. There is identifying the opportunity and priority of subject that will be benchmarked. School should start at an analysis of school performance process that based on the criterion for internal school improving and responding to needs and expectation of students. For identifying comparative companies. There is selecting the benchmarking partner. School should regard to internal or external school based on the criterion about compatible context between schools. As for determining data collection method and collect data. There is reaching the key information for benchmarking. School should use mixed method among quantitative and qualitative techniques. Most of techniques are interviewing, inquiring, surveying, testing and site visiting, so that receiving a depth data and completed data on time for reflecting the successfulness and capacity to reach the best practice from benchmarking partner.

2. Analysis step. School should self study for self determination. This step comprised two sub steps such as (1) determine current performance "gap", and (2) project future performance levels. For determining current performance "gap". There is analyzing the efficiency and capacity of school for comparing that between school and benchmarking partner. School should identify the gap or difference of efficiency and capacity of school in the present, and should predict that in the future. In addition, School should acquire a sound practice and an input for usage in own school from benchmarking partner. As for projecting future performance levels. There is estimating the efficiency and capacity of school on the next period. School should identify a milestone for closing performance gab and shifting level of performance to higher.

3. Integration step. School should promote an acceptance in action plan among members or teamwork. This step comprised two sub steps such as (1) communicate benchmark findings and gain acceptance, and (2) establish functional goals. For communicating benchmark findings and gaining acceptance. There is providing what to be benchmarked and related action plan to teamwork or members of school. School should convince head of division to approve and engage to that action plan. School must determine an appropriately approaches and channels for communication to them. As for establishing functional goals. There is assigning tasks for members based on milestone which everyone will be shared their function to perform. However, these functions must be acceptance from them for maximizing the possibility of action plan.

4. Action step. School should optimize an action plan to performance. This step comprised three sub steps such as (1) develop action plans, (2) implement specific actions and monitor progress, and (3) recalibrate benchmarks. For developing action plans. There is clarifying an action plan to teamwork or members of school. School should determine the related details about objectives, activities, schedule, teamwork, budget, and monitoring. For implementing specific actions and monitoring progress. There is launching action plans and reporting the results. School should conduct a pilot study at some section/unit of school before take action at entire school. Consequently, School should report both formative and summative results to an executive. As for recalibrating benchmarks. There is examining the concordance between results

and goals of benchmarking. School should review the results of performance and identify the status of reaching the goals, needs for reviewing the goals, lesson learned from benchmarking, and suggesting for benchmarking in the future.

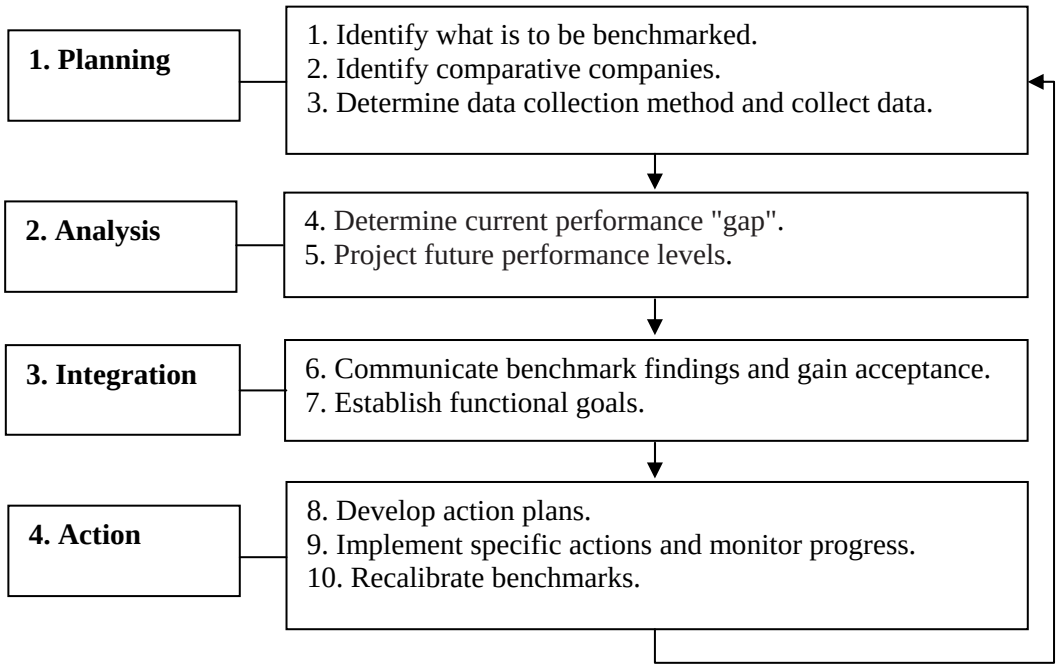

Figure 2: The steps of Xerox`s benchmarking process.

Discussion

Research findings of this research consisted of two issues for discussion. There were (1) factors and indicators of professional learning communities (PLCs), and (2) guideline to practice. The details of these were as follows.

For factors and indicators of the professional learning communities (PLCs), there found five components: (1) shared norms and values, (2) collective focus on student learning, (3) collaboration, (4) deprivatized practice, and (5) reflective dialogue. These factors were differential weight. PLCs' factors according to administrators, the high weighted factor were factor namely shared norms and values, reflective dialogue, collective focus on student learning, collaboration, and deprivatized practice, respectively. Whereas, the PLCs' factors of teachers, the high weighted were factor namely collective focus on student learning, collaboration, and deprivatized practice, reflective dialogue, shared norms and values, respectively. Thus, there would be concluded that the natural performance of administrators affecting to natural performance of teachers. In the other word, PLCs' factor could be divided into two levels; level one was teacher, and level two was administrator. This research indicated that multilevel factor mixture model of PLCs was compliance with the nature of educational data. In addition, This PLCs model was differentiated to classical PLCs model which was single level (Allua, Stapleton & Beretvas, 2008; Sun &

Willson, 2008; Lubke & Muthén, 2007). Consequently, the key information of PLCs in this research will be able to contribute to educational practitioners for making the decision on building schools toward the sustainable professional learning communities.

As for guideline to practice, this research developed indicators and criterion of PLCs benchmark that as a new tools for Thai administrators and teachers to build and sustain the professional learning communities in schools. This research proposed guideline to practice according to ten steps of Xerox Corporation, because this well known for other countries, also practical significance for another organizations. School should establish goals of benchmarking base on the continuously improvement in own school. On the benchmarking process, school should learn more and more to get approaches to reach the best practice of benchmarking partners. Whereas, the aims of benchmarking don't terminate at receiving status of own school which gap between own school and the best school (benchmarking partner), but school must take a know-how from the best school to shift own level of performance to higher (Codling, 1995; Zairi, 1996; Robere, 2000; Johnson, 2002).

The results of this research on the initial phase were able to reflect the evaluation of the professional learning communities in schools that considered in term of evolution over time followed their stage of development, such as some schools were at a early stage of developing the characteristics of professional learning communities, others were further along the process, while some were more established. Consequently, the final phase results of this research were able to build the benchmark according to the viewpoints and needs of the intended users or stakeholders.

Moreover, the key intended users or schools used the professional learning communities building benchmark as tools to compare and learn with other schools that were the best practice, so that toward the sustainable professional learning communities in their schools and educational service areas.

The evaluation capacities of them, there expected that created while the comparing and learning process under the benchmarking that applied from benchmarking processes of the Xerox Corporation, USA. Ultimately, it expected that conveyed the successful building the school professional learning communities in Thailand to the Thai government to reach the national education standards based on the national education provision.

Suggestion

1. Educational offices, especially schools and educational service areas should utilize this benchmark as tools and guideline to build the professional learning communities in schools, so that developing and monitoring the progress of educational reform which related to teachers' capacity at all levels such as individual, team and organization. There will be able to enhance the learning of students.

2. Next research should conduct pilot study based on building professional learning communities throughout benchmarking process in this research. There will be provided the strategies which practical significance for driving the sustainable professional learning communities in schools. Then, extending the best practice to other schools through educational networks.

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