Full Length Research Paper

The development of professional learning community in primary schools

Samoot Sompong[1]*, Prawit Erawan[2] and Sudharm Dharm-tad-sa-na-non[2]

[1]Educational Administration and Development, Faculty of Education, Mahasarakam University, Thailand.
[2]Department of Educational Administration, Faculty of Education, Mahasarakam University, Thailand.

The objectives of this research are: (1) To study the current situation and need for developing professional learning community in primary schools; (2) To develop the model for developing professional learning community, and (3) To study the findings of development for professional learning community based on developed model related to knowledge, comprehension, and competency in developing professional learning community, teaching behavior and students' quality. The research area was purposively selected three primary schools. Participatory Action Research was administered in 6 phases; there were 7458 participants. The instrument used for data collection in this study was questionnaire. The statistics used were frequency, percentage, mean, and standard deviation. The findings are as follows: (1) The current situation in developing professional learning community showed that the administrators' overall opinion in all 5 aspects is in "High" level; (2) The model for developing professional learning community consisted of 4 major factors: (a) Preparation for learning organization; (b) Development of shared norm and value; (c) Learning from common work practice, and (d) the expected outcome. (3) The evaluative finding of teachers' knowledge, comprehension, and competency in developing professional learning community was in "high" level.

Key words: Model development, development of professional learning community, professional learning community in primary school.

INTRODUCTION

The National Education Act 1999 and the Revised Issue 2002 Thailand offered national reform for more than 10 years. But, the evaluative findings from different work showed that Thai students' learning achievement from quality measurement on average was in "Low" level. Specifically, the O-net (Ordinary National Educational Test), or the international students' evaluation of the organizational members for economic development cooperation (PISA- Program for International Student Assessment) showed that very little number of students could have high score. For reading competency, Mathematics and Science Competency, they had low score continuously especially in Mathematics and Science. Thai students belonged to the "Low" score group. In addition, according to the second round of external quality assessment (2006-2010) from data base

*Corresponding author. E-mail: sompongsamoot@gmail.com.

of The Office for National Education Standard and Quality Assessment (Public Organization) presented to the Office of Basic Education Commission, it was found that in early childhood and Basic Education Level, Standard 4, the students are competent in analytical thinking, synthetic thinking, critical thinking, creative thinking and vision; in Standard 5, the students have necessary knowledge and skill based on curriculum. The evaluative findings were in "Fair" level from the 2 Standards (The Office of National Testing, 2012)

Comparing with international level, the students had lower level of skills in Language and ICT than their neighbor countries. Thai students' overall competency in competition was lower than the neighboring countries in ASEAN Region especially in Singapore and Malaysia. Every ASEAN member country will enter into ASEAN Community in 2015. It is necessary for Thai Educational Reform to use the new paradigm in cooperating ASEAN Alliance and use teacher community base by focusing on important changes which include: teachers should be learning managers who can change instructional process into learning process by maintaining academic excellence, and preparing the students to obtain learning skill, life skill and work skill in the 21st Century. Furthermore, it is necessary to change the classroom into learning area. Thailand should include the educational reform system which is relevant to problem situation as well as need for human resource with quality and competency for global competition (Panich, 2012).

The development of educational quality by system entails developing the professional learning community for teachers as practitioners and to share and learn how to practice. The practice of sharing and learning aims to aid students' learning; it is also for complex intelligence development to prepare students for social life in the 21st Century through learning. The focus is on human growth by learning from real practice. Teachers change their role into coach. According to the approach of development in professional learning community, the teachers were learners who learned through the students' learning method. The students learn in team. Teachers work and learn as a teamwork, focusing on the teachers' learning from work practice and not teachers' training (Panich, 2012). The Professional Learning Community includes the group of persons who share or discuss, through critical question, daily life work practice, reflection of work practice and collaborated work practice focusing on learning as well as teachers' professional progress (Mitchell and Sackney, 2001; Toole and Louis, 2002).

From educational context, professional learning community includes pattern and behavior, the relationship between persons and patterns of belief or norm such as goal and value. Its definition consists of 2 parts: Process including sharing and discussion, asking and critiquing, reflection and collaboration of shared power for work practice; the part of expected outcome in work practice (Intanam, 2010).

Bryk et al. (1999) and Kruse et al. (1995 cited in Bulkley and Hicks, 2005) specified that professional learning community of school consisted of 5 major factors as follows: (1) the shared norms and values, (2) collective focus on student learning, (3) collaboration, (4) de-privatized practice, and (5) reflective dialogue. These factors are not in hierarchy. They were used for classifying the differences between community as well as professional knowledge, from other kinds of school culture. Although all of these factors are classified into classes clearly, there is high relationship in some factors or some might affect others. Wenger (1998 cited in Giles and Hargreaver, 2006) supported that for school development and improvement, there should be strong implementation of professional learning community. The professional learning community of school consists of 3 major issues: Collaboration or discussion or reflection by experts or school experts;2, congruent goal focusing on teaching work practice, and learning in collaborative work;3, collection and evaluation, and information for searching as well as decision making in continuous work progress.

In the present, educational quality development by professional learning community system has been implemented in many countries such as the United States of America, Japan, Singapore etc. These schools used Dufour's principles which are, 'what is the student need to learn? By which method? Can the students know from these things?' The teacher team analyzed and developed the test findings (Hinman, 2007) in Thailand, the model for developing the Professional Learning Community was administered in school and Educational Service Area levels as stage for sharing and providing the learning process. The future skill in Thailand context was constructed by project- based learning including the inspiration for developing the learning process in Bo-kaew-wittaya School, Kampamgpech Province, small sized school and large sized school of Pa-re-rai Municipal School, Roi-ed Province.

There was the design of livelihood and culture learning for Bangkok Pleonpattana School and educational management of human's life as school model for Lam-plai-mad Pattana School, Buriram Province. All of these were accepted as alternative for new and effective educational management.

Therefore, the researcher was interested in developing educational quality and learning management process for problem solving through the construction of professional learning community in primary schools for it to be guidelines for educational reform. Teachers are responsible for their students and are part of the professional learning community.

LITERATURE

From educational context, it is concluded that professional

learning community includes pattern and behavior; for instance, the relationship between person and pattern of belief or norm such as goal and value. The definition of professional learning community consisted of 2 parts: Process including sharing and discussion, asking and critiquing, reflection and collaboration in shared power for work practice. The part of expected outcome in work practice includes professional teachers impacts on students' learning (Intanam, 2010).

On the factor of professional learning community, educational researchers such as Bryk et al. (1999) and Kruse et al. (1995 cited in Bulkley and Hicks. 2005) specified that professional learning community of schools consisted of 5 major factors as follows: (1) shared norms and values, (2) collective focus on students' learning, (3) collaboration, (4) de- privatized practice, and (5) reflective dialogue. These factors are not in a hierarchy. They were used for classifying the differences between community as well as professional knowledge, from other kinds of school culture. Although all of these factors were classified into classes clearly, there was high relationship in some factors or some factors might affect others. Wenger (1998 cited in Giles and Hargreaver, 2006) said that for there to be school development and improvement, strong professional learning community should be implemented. Professional learning community of school consisted of 3 major issues: First, Collaboration, discussion or reflection by school experts; second, congruent goal focusing on teaching work practice, and learning in collaborative work; third, collection and evaluation, information for searching and decision making for continuous work progress.

In the United States of America, professional learning community was administered in primary schools in Missouri (Rentfro, 2007), Virginia (Burnette, 2007), secondary schools of Texas (Phillips, 2003), secondary schools of Arizona (Beyond, n. d) and secondary schools of California. The teacher team analyzed the test and evaluative findings to be higher (Hinman, 2007). In Thailand, the model for developing professional learning community was administered in schools and Educational Service Area levels as stage for providing the learning process.

The researcher was interested in developing educational quality and learning management process with quality to be a part of problem solving. This is done through the construction of professional learning community in primary schools as guidelines for educational reform. It starts with the teachers who are responsible for their students. The professional learning community extends from schools' teacher team to administrators at national level.

Research objectives

1. To study the current situation and need for developing professional learning community in primary schools.
2. To develop a model for developing the professional learning community in primary schools.
3. To study the findings of professional learning community based on developed model related to: (1) knowledge, comprehension, and competency in developing professional learning community, (2) teaching behavior, (3) innovation in instructional development, (3) satisfaction on development model for professional learning community, (4) teachers' cooperation and experience sharing and (5) students' quality.

The steps taken in the research study

The research design was Participatory Action Research (PAR) administered in 6 phases as follows:

Phase 1: The study of basic information includes 2 sub-phases: (1) the study of related literature, (2) the study of the situation and need for developing professional learning community in primary schools under the jurisdiction of The Basic Education Commission. In this phase, the researcher studied document, approach, rationale, related theoretical approach with development of professional learning community. Then, the data were collected. The sample of the study consists of 379 administrators and 379 teachers. They were selected by multi-stage sampling.

The research was done in 3 schools: small sized school, medium sized school, and large sized school based on criterion of The Office of Nongbualampoo Primary Educational Service Area 1. They were selected by purposive sampling based on the following criteria: the school must be willing to participate in development, there must be convenient transportation, and low score in O-NET in 2012.

Phase 2: the selection and preparation of target school include 3 sub-phases: 1) collaborative study of schools in developing professional learning community, 2) teacher training in professional learning community, and 3) field trip study in model schools of professional learning community. The researcher implemented it at national level. Later on, the problem and need of schools in developing the professional learning community of school were cooperatively studied. The school administrators and teachers were trained and had field trip study in Lamplaymad School, Buriram Province, for 3 days.

Phase 3: the development of the model for constructing professional learning community in schools consisted of 2 Sub-phases as: (1) the researcher and school staffs collaborated in constructing the professional learning community in schools, (2) the model was evaluated by external experts. The researcher held workshop for school staffs in research area schools, 1 school for each

session. They collaborated in synthesizing the information in Phase 1, and Phase 2, and determining the tentative model for developing the professional learning community of each school. One tentative model was obtained for each school. Then, each school collaborated in establishing the practice guidelines to be handbook model. In addition, the model was evaluated by experts based on propriety in context, feasibility, accuracy, and utility of model. Later on, it was revised and improved according to the experts' recommendations.

Phase 4: the implementation of development in schools based on the developed model consisted of 2 sub-phases as: (1) the researcher and school staff collaborated in planning for practice, (2) collaborative implementation based on specified action plan. The researcher and school staff collaborated in planning for practice by studying the handbook model, holding conferences for developing one's comprehension based on construction of professional learning community for school teachers according to the specified plan. The researcher observed, interviewed, and provided recommendations during the development.

Phase 5: the presentation of performance and sharing consisted of 2 sub-phases as follows: 1) conclusion and preparation, 2) establishment of stage for presenting their learning performance, discussion, reflection of imple-mentation. The researcher and all 3 schools held work-shop, concluded the performance of school development based on the model, administrators' performance, teachers' instructional management performance, and students' performance. The school administrators and teachers presented their development performance by exhibition, teacher representative's discussion, reflection of experience obtained from development based on construction of professional learning community, problem, obstacle, and recommendation. The researcher recorded the information from teachers' discussion, including their strength, weak point, and performance from exhibition as supplementary information for discussion of the findings.

Phase 6: the evaluation of school development based on developed model consisted of 3 sub-phases: (1) collaborative determination of expected outcome and evaluation technique, (2) collaborative evaluation of the existed outcome from implementation based on the model, and 3) reflection of evaluative findings as feedback for teachers, researcher, and school in order to determine the expected outcome and evaluative technique, data source, data collection technique, construction of evaluative instrument as well as planning, duration, activity, and school staffs' role as evaluators. Then, it was implemented based on specified plan. The evaluative findings were collected and analyzed. The conclusions were drawn and presented to the whole school teachers to be considered, analyzed, and critiqued. The researcher provided recommendations for improving

and correcting the model, and encouraged the teachers' team to use the revised model for general work development.

CONCEPTUAL FRAMEWORK OF THIS RESEARCH

This is presented in Figure 1.

METHODS

The instrument used for data collection was questionnaire which had 3 parts as follows: the first part was the checklist regarding respondents' demographic data and school data consisting of 5 phases. the second part covered one's opinion on the current situation and need for developing professional learning community in primary schools. it was ranked on a 5 level rating scale. there are 5 aspects: 1) the development of shared norm and value; 2) collective focus on students' learning; 3) collaboration with teacher colleagues; 4) de-privatized practice or advice for work practice and 5) dialogue or discussion for reflecting on one's work performance.
the third part was an open-ended question as well as supplementary recommendations.

RESEARCH FINDINGS

In the current situation in developing professional learning community of primary schools, the administrators' opinion in the 5 aspects was in "High" level. The mean values were ranked in order from high to low as follows: reflecting on one's work practice, the development of common norm and value, advice for work practice, and practice with common goal for students' learning.

For the situation and need for developing professional learning community of primary schools, the administrators' opinion in the 5 aspects was in "High" level. The mean values were ranked in order from high to low as follows: the administrators, advice for work practice, collaboration with colleagues, practice with common goal for students' learning, reflecting on work practice, and development of common norm and value. For teachers, the mean values were ranked in order from high to low as follows: advice for work practice, practice with common goal for students' learning, collaboration with colleagues for learning, reflecting on work performance, and development of common norm and value.

The researcher collaborated with the school to hold workshop for developing professional learning community based on each school's context. The findings of the development are as follows.

The model for developing the professional learning community of schools consisted of major and sub-factors which were common for all the 3 schools as follows: (1) preparation for learning organization consisted of 2 sub-factors- internal condition of school, and development of organizational culture for facilitating learning; 2) the development of shared norm and value consisted of 2 sub-factors- students' learning, and school staffs' shared
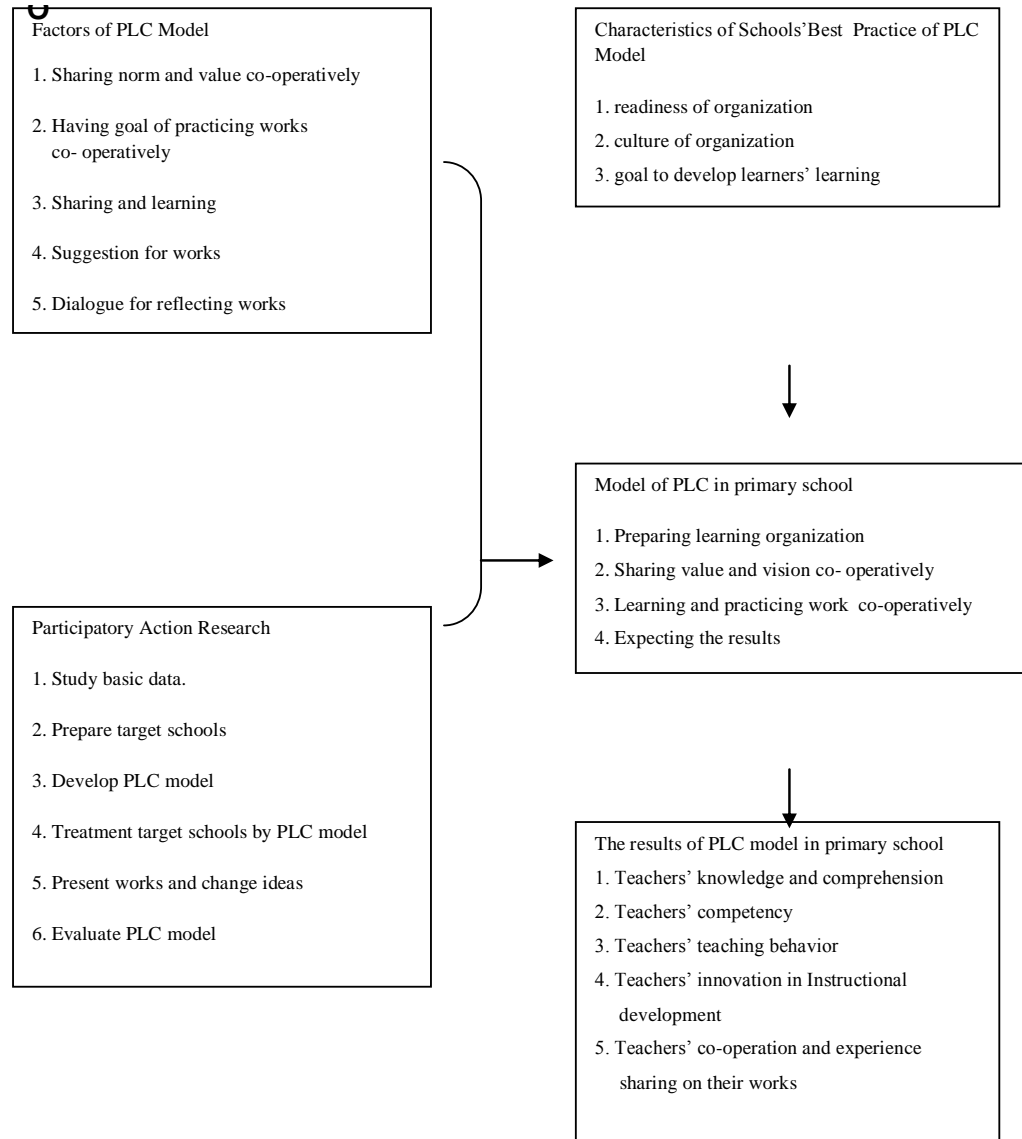
Factors of PLC Model

1. Sharing norm and value co-operatively

2. Having goal of practicing works
   co- operatively

3. Sharing and learning

4. Suggestion for works

5. Dialogue for reflecting works

Characteristics of Schools'Best Practice of PLC Model

1. readiness of organization

2. culture of organization

3. goal to develop learners' learning

Model of PLC in primary school

1. Preparing learning organization

2. Sharing value and vision co- operatively

3. Learning and practicing work co-operatively

4. Expecting the results

Participatory Action Research

1. Study basic data.

2. Prepare target schools

3. Develop PLC model

4. Treatment target schools by PLC model

5. Present works and change ideas

6. Evaluate PLC model

The results of PLC model in primary school

1. Teachers' knowledge and comprehension

2. Teachers' competency

3. Teachers' teaching behavior

4. Teachers' innovation in Instructional
   development

5. Teachers' co-operation and experience
   sharing on their works

Figure 1. Conceptual framework.

learning by using PLC process; 3) learning from common work practice consisted of 3 sub-factors- shared learning of teacher group, development of learning process and AAR (After action review): shared success in school; and 4) the expected outcome consisted of 4 sub-factors- knowledge and comprehension of development of teachers' learning community, teachers' teaching inno-vation, students' learning performance, and friendship in school.

The findings of development of professional learning community based on developed model related to knowledge and comprehension, competency in deve-loping professional learning community, teaching behavior, innovation of instructional development, satisfaction on model for developing professional learning community, teachers' collaboration and shared work

experience, and students' quality in all the 3 schools are as follows:

Findings of knowledge and comprehension in developing professional learning community showed that the developing the professional learning community. Their scores were 80 points above or 66.67%. Their scores were 70 to 79 points (31.25%). Their scores were lower than 70 points (2/08%).

The evaluative findings of competency in developing professional learning community showed that the teachers in all of the 3 schools were competent in developing the professional learning community; they were in the "Highest" level. The mean values were ranked in order from high to low as follows: aspect 4: advice for work practice; aspect 2: collective focus on

students' learning; aspect 3: collaboration with teacher colleagues for learning; aspect 1: the development of common norm and value, and aspect 5: discussion on reflecting the work practice.

The survey findings of teachers' instructional innovation showed that every teacher had instructional innovation of development for professional learning community. Ban-bog-none-rieng School had 26 topics of thinking skill. Toong-po-na-udom School had 13 topics of instructional innovation in students' discipline development. Ban-song-pleuy School had 9 topics of instructional innovation in reading for comprehension.

The findings of teachers' teaching behavior showed that the teachers' behaviors changed, as the teachers gave importance to preparing students more than before. Every school used the Contemplative Education at least 15-20 min before class. The teachers collaborated in planning and designing the Contemplative Education Activity to be appropriate with students in each class. The teachers all agreed that the Contemplative Education Activity helped the students to concentrate on learning. As a result, the students were interested in and concentrated on learning especially in early childhood. The students were interested in the activity for a longer period of time.

The findings of satisfaction on the model for developing professional learning community in schools showed that the teachers had satisfaction in every item. It was at "High" level. The highest level of mean value was for item 4: Contemplative Education Activity Management for developing students' internal intelligence. The students' satisfaction was at the highest level. The lowest level of mean value was or item 14: teaching innovation for students' learning.

The findings of teachers' collaboration and shared work experience, according to synthesized information showed that the teachers collaborated in instructional work, teaching, discussion, informal reflection of small group working every day, and experience sharing every week. When teachers had their opportunity to discuss their learning and teaching, they had successful ideas and experience as self-development from their colleagues.

DISCUSSION

The teachers in all of the 3 schools had knowledge in development findings of model for developing professional learning community in primary schools.

The model for developing the professional learning community in primary schools consisted of 4 major factors and 11 sub-factors as follows: 1) preparation for learning included 2 sub-factors- preparation of internal school environment, and development of organizational culture for facilitating the learning; 2) development of shared value and vision included 2 sub-factors - students' learning and school staffs' shared learning by using the PLC process; 3) learning from shared work practice included 3 sub-factors-teacher group's shared learning, development of shared learning process, and the AAR (After action review) : shared success in school; 4) the expected outcome included 4 sub-factors- teachers' knowledge and comprehension of learning community development, teachers' teaching innovation, students' learning performance, and friendship in school. The experts' evaluative findings were in the highest level of propriety in all of the 3 schools.

The researcher systematically implemented it according to academic principle using Participatory Action Research. The researcher, administrators and teachers collaborated in implementing it based on 6 steps: the study of rationale and approach in learning community development, teaching professional approach, model for developing the learning community of sampled school, the study of current situation and need for developing the Professional Learning Community by seeking the opinion of administrators and teachers in the schools under the jurisdiction of The Office of Basic Education Commission. Consequently, the information related to every division was obtained thoroughly as real data. The process for determining the model for developing the professional learning community was determined from quality as well as real basic information of area school. It was supported by research findings of Jirapon (2009) in "Development of Teachers' Team Working in Secondary School through 6 Steps of research process." It was found that the model of team work development in school was in "the highest" level of propriety. In addition, it was congruent with research findings of Pantong (2013) in "Teachers' model development for students in school, under the office of primary educational service area. 3 phases were implemented. Phase 1, the characteristic and technique of teacher development for students was studied. Phase 2, the model for developing teacher for students in school was constructed. Phase 3, the model was evaluated for its feasibility and utility. The research findings showed that the model had its feasibility to be used in practice in "High" level. Besides, its utility was in the ''highest'' level.

The rationale and basic approach for developing professional learning community was appropriate and congruent with guidelines for developing professional learning community. The researcher synthesized the academics congruent approaches in constructing professional learning community. The factors used as a framework in constructing the model consisted of 5 factors: the common norm and value, determination of common goal towards students' learning, collaboration in suggesting practice, and the reflection of performance practice (Intanam, 2010). Moreover, the approaches from field trip at Lam-play-mad Pattana School with best practice in developing the learning community were the frameworks for model development; they include the following: learning organization was prepared by

arranging the environmental condition in school, and developing the organizational culture for facilitating learning as well as using the school staffs' cooperative learning through PLC process. They include the experience simulation, expectation sharing, successful experience sharing, and future anticipation to determine the factors of model for developing professional learning community of this study. Consequently, the determined model included utility as well as concrete form. It was supported by Thaibung (2011)'s approach in "Teacher's Model Development". The stages for teachers' potentiality expression, and learning by discussion were established regularly. The factors of model in professional learning community consisted of factor of reflecting on work practice.

The developed model for developing the professional learning community was congruent with the current situation and need for developing the professional learning community in each schools.

The teachers in all of the 3 schools had 66.67% and above knowledge and comprehension in developing professional learning community. In addition, they were competent in developing professional learning community; they were in the ''Highest'' level. The researcher sent the teachers to participate in training and field trip at Lam-plai-mad Paattana School. This is congruent with the approach for teachers' empowerment of Erawan (2005) in "Model Development for Teacher's Empowerment." It was found that the factors for teachers' empowerment was to increase the channel for teachers to obtain their bargaining power by discussion in order to decrease conflict, understand each other, develop their new knowledge and skills, and team work development in learning substance level.

Every teacher had one instructional innovation of model for developing the Professional Learning Community, at least 1 topic for each one. The teachers had changed their instructional management behavior. They used Contemplative Education before the lesson. They collaborated in planning and designing the instructional activity. They cooperated in reflecting as well as improving and correcting the instruction. It might be because they obtained self-development by training and field trip study at Lam-plai-mad Pattana School. The teachers were given examples from problem based teaching; taught Thai Language teaching through literary work as well as 3 teaching steps: Chong, Cheum, and Chai. Furthermore, they viewed the samples from instructional innovation, performance from practice in real situation by teachers at Lam-plai-mad Pattana School. When the teachers adjusted their knowledge in school systematically based on model for developing professional learning community and were given advice by researcher, they made plan together and reflected their teaching performance as well as shared their experience and performance with each other. As s result, they obtained teaching innovation and changed their

teaching behavior. It is congruent with professional learning community of Panich (2010: 133-136)'s suggestions that the professional learning community was the instrument for teachers to get together in community, take role as transformational leadership, move changes for learning reform, reinforce with each other from both inside and outside, free themselves from power relationship to horizontal relationship, get together into group to share issue one is interested in educational development of professional learning community as action research cycle in order to inquire and search for knowledge as well as work continuously.

The finding on the teachers' satisfaction with the model for developing the Professional Learning Community showed that the teachers' satisfaction in every item was in "High" level. The item with the highest level of mean value was item 4. The teachers obtained self-development from work practice providing the concrete findings. The important thing was that the teachers could collaborate in making plan. They took turn to be leaders and followers. They were recognized by their colleagues in developing the work they were responsible for. In addition, they disseminated performances. So, they were proud and satisfied with the model for developing professional learning community.

The findings of study in teachers' collaboration and shared work experience showed that they cooperated in doing their instructional work, planning, discussing, reflecting the small group work informally every day, experience sharing their experience and success every week. It was supported by the development of Professional Learning Community by many academics related to teachers' development; teachers' potentiality was used for work development. Panich (2010: 13-136) concluded the characteristic of professional learning community. They moved the changes of internal reform. Moreover, it was the teachers' instrument for practicing by themselves. It freed the teachers from power relation-ship into the horizontal relationship for collaborating in making changes to education as well as teachers' creative working; it brought learning management experience such as PBL and other kinds of innovation experimented by them to share for knowledge construction or upgrading their work knowledge from direct experience.

RECOMMENDATIONS

Recommendations for applying the research findings

There are interesting findings regarding developing the model for professional learning community. It was not only based on theoretical approach, but also the application of model with best practice as framework for model development. As a result, the model with feasibility and utility in work development was obtained. Therefore,

the work units or persons who were interested in model development would use this finding as a guideline for developing the model as well.

The research findings of this study indicated that professional learning community in schools is the guideline which could help teachers for self- development. Since the teachers' potentiality is to develop each other, they do not have to go out of the school for development. Consequently, the work unit responsible for teachers' development should study and adjust this finding.

This research is PAR research based on cooperative learning at "Research Area" between the researcher and teachers. Both sides had to collaborate with each other, respect knowledge and experience. This research process indicated that the process in developing quality based on model for creating learning community occurred by learning and working together with outsiders as well as persons in the organization. If the development process is from top to bottom, that development would not be successful in the long run. Therefore, the quality process development based on the model for developing the learning community must be in line with this issue.

According to the model development process for developing professional learning community, teachers' development technique could be applied as follows:

1. The teacher group was a small community based on hierarchy and learning substance. The teachers had opportunity to discuss their instruction more.
2. For conferences to be efficient, they have to decrease the formal climate as much as possible, like "informal talk."
3. The development of enthusiasm and confidence in teachers' working indicated a good point.
4. The communication pattern of school staff was to talk or discuss regularly in small group based on learning substance.

Recommendations for future research

1. The development of professional learning community is a guideline for developing teachers to manage their instructional duty with quality, since the teachers can use their potentiality to develop each other.
2. Other processes than can develop professional learning community, should be studied.
3. The comparative study of professional learning community between the government school and private school should be studied.
4. The research study of development in educational supervision model by using PAR in each school under the educational service area should be conducted.

Conflict of Interests

The authors have not declared any conflicts of interest.

ACKNOWLEDGMENT

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