A DEVELOPMENT OF PROFESSIONAL LEARNING COMMUNITY OF PRACTICE TO ENHANCE PRACTICAL COMMUNITY USING ICT FOR INSTRUCTION OF BASIC EDUCATION TEACHERS

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Abstract

This research aimed to 1) study the model of using ICT and accessing ICT to develop the professional learning community of practice, 2) develop the professional learning community of practice to enhance the practical community using ICT for instruction, 3) study the practical result of professional learning community of practice, and 4) to follow up the procedure and study the opinion of teachers as the network member of professional learning community of practice. The samples were 1) 9 experts to evaluate the appropriateness of professional learning community of practice model, 2) 7 experts for brain storming 3) 42 teachers from school under basic education commission. Research instruments consisted of 1) evaluation form for professional learning community of practice 2) questionnaire 3) interview form 4) evaluation form for management of professional learning community of practice. The data was statistically analyzed by frequency, percentage, mean (x̄) and standard deviation (S.D.). The research findings were as follow: 1) the professional learning community of practice model consisted of 5 components; external facilitators and inhibitors, internal facilitators and inhibitors, process, characteristics and outcomes. The appropriateness of professional learning community of practice was at the level of “most” (x̄ = 3.86, S.D. = 0.31) 2) 94 teachers joined the community of practice and 42 teachers used ICT via video clip to share knowledge and good teaching experience. There were 47.61% of occupation and technology learning group, 28.57% of science learning group, 7.14% of mathematics and foreign language learning group, and 4.76% of social science and Thai language learning group. 3) The evaluation of community of practice for teachers was found that the management of community of practice for teachers was totally at the level of “most” including the change of teachers’ basic desire, the change of examination, the change for students, the change of teachers working style, the change of school culture. In addition, the professional learning community of practice gained ICT skills for instruction, confidence on teaching, sharing knowledge skill, good attitude on ICT integration for instruction, and inspiration for developing the students.

Keywords: ICT Use, ICT Access, Professional Learning Community of Practice.

1 INTRODUCTION

Professional learning community of practice is one of the educational reform in Thailand which go along with the new process of reformation. This idea is that “learning process is more important than knowledge” and “teacher is not knowledge deliveryman” but the teacher is to design the learning process with students. As this idea of educational reform, the teachers should have to adapt their schools and educational region to be the professional learning community: PLC. This is to increase the opportunity in accomplishment for the students in learning achievement. The main idea for professional learning community composes of 1) mission for advanced learning of the students 2) the importance of cooperation to gain the goal of missions 3) effort to gain the outcome on individual needs.

Educational system should be changed. The teacher centered approach should be changed to student centered approach. Individual learning should be changed to team learning. The competition in learning should be changed to cooperative learning. Professional learning community is the new tool of teachers in the 21st century. The role of the teachers should be changed from “teach” to “coach” or “facilitate”. The teachers are learning facilitators. The classroom should be the studio for the students to work in group. Professional learning community will be the tool to raise the question for classroom research. Professional learning community can help and leads to design the research methodology, to collect the data, to analyze the research finding and to synthesize the new knowledge that related to Thai social context. The research finding on professional learning community is not specific only on the students’ data but also related to the learning context on both students and teachers. The
professional learning community of practice or community of practice of the teachers is one format of knowledge management.

Office of Basic Education Commission (OBEC) has responsibilities or missions on basic education management. OBEC supports in using technology for instruction in schools. The students will gain the varieties of skills according to the National Education Acts of 2542 B.E. The teachers’ role is teaching, so it is necessary to develop the teachers’ potential according to the social change, especially the global advancement. The capability of teachers in Thailand on content delivery to the student is inadequate. The problem solving on this issue in short time has to be solved. The use of educational technology in instruction is the main idea to apply in developing the students. Anywhere the students are in the country, they should have opportunity to be developed as the others. Information technology is the prior alternative to use for solving this problem. The potential of teachers on technology application in the instruction is quite low. The teachers are not keen on using information technology. There are not many teachers who can use technology fluently. The need for developing teachers on ICT capability should be done. The main capability of the teachers on ICT are 1) the knowledge and capability on instruction management and training 2) the knowledge and capability on project management 3) the information community technology and network management. These three capabilities should be integrated (knowledge integrator, ICT, 2013). The professional learning community of practice to develop the teachers’ competency on ICT in their profession is integrated and enhancing the teachers’ effective task achievement. The professional learning community is formed by the cooperation of teachers as a community and the teachers are driven to do educational reform by themselves. The intrinsic motivation of the teachers in using ICT for helping the students learning outcomes continually and gained the learners’ achievement are sustainable.

The development of professional learning community and create the practical teachers in using ICT for instruction of Basic Education Commission are able to develop more teachers to gain the basic knowledge of ICT application in instruction. The use of ICT can be applied to increase the potential of teachers in terms of knowledge sharing under the umbrella of professional learning community of practice. The community of practice of teachers with ICT based for instruction will be sustainable. The educational environment will help the students to learn, be ready for 21st century education.

2 OBJECTIVES
1. To study the format of ICT using and accessing which effect the development of professional learning community of basic education teachers
2. To develop the professional learning community of practice to enhance the practical community using ICT of basic education teachers
3. To study the outcome of professional learning community of practice to enhance the practical community using ICT of basic education teachers
4. To follow up the implement and study the opinion of teachers who participated in professional learning community of practice to enhance the practical community using ICT

3 OPERATIONAL DEFINITION
1. Professional learning community is the cooperation among teachers to share knowledge by using technology in communication and knowledge sharing. The purposes of the teachers are to gain the learning achievement of the students using ICT based learning. The ICT using skill is used for sharing knowledge and integrated the task of teachers, and also a network creation is used for knowledge sharing among teachers’ community.
2. Community of practice is a tool to connect people as a network under the concept of professional learning community using ICT as a tool of developing the community of practice and lead to change the working procedure and gain the good practice on working. Community of practice can also enhance the potential of teachers’ work and apply the ICT for working.

4 RESEARCH METHODOLOGY
This research and development are classified into 4 steps
- Step 1 to study the format of ICT using and accessing which effect the development of professional learning community of basic education teachers
- Step 2 to develop the professional learning community of practice to enhance the practical community using ICT of basic education teachers
- Step 3 to study the outcome of professional learning community of practice to enhance the practical community using ICT of basic education teachers
- Step 4 to follow up the implement and study the opinion of teachers who participated in professional learning community of practice to enhance the practical community using ICT

5 CONCLUSION

A. The study of ICT format on using and accessing which effect the development of professional learning community of basic education teachers

The researcher studied the data of characteristics and components of learning activities, resources of information technology and communication that enhanced the instructional model according to the approach of professional learning community. The approach concerned the objective, steps of activities, learning activities, evaluation, implementation, and follow up techniques. After that, studied the status of instruction management using information technology by surveying the opinion of 530 basic education teachers and interviewing 10 basic education teachers and 5 experts. The data was synthesized to use as a framework of developing professional learning community to enhance the community of practice for basic education teachers.

The professional learning community of basic education teachers for instructional management using ICT had 5 components

1. External facilitators and inhibitors: 1) ICT supporting resources 2) policy for supporting ICT from administrators
2. Internal facilitators and inhibitors: 1) Goals and philosophy 2) innovation of learning management 3) teacher's academic standing
3. Process: 1) Readiness for information technology resources 2) process of creating professional learning community of practice such as ARCS Model, self-directed learning, appreciative inquiry learning process

The knowledge management process on community of practice had 7 steps

- Step 1: Knowledge signification – The teacher must survey the knowledge need in reaching learning goals. The survey should concern about what the students need to know and the prior knowledge was enough or not
- Step 2: Knowledge acquisition – when the survey found inadequate knowledge, the teachers should seek for more knowledge
- Step 3: Systematic knowledge management – classify the knowledge systematically and store the knowledge in document, text, video audio or computer lessons
- Step 4: Systematize and consider knowledge to collect as knowledge asset and then review to modernize that knowledge
- Step 5: Access knowledge, the channel of knowledge diffusion in any way to help the teachers for accessing to knowledge conveniently, rapidly and widely
- Step 6: Knowledge sharing: the activity for teachers should be provided to help the teachers on knowledge sharing such as community of practices, coaching, and mentoring
- Step 7: Learning, specify the teachers in the community of practice to use knowledge management (KM) for creating the project to make the instruction gain efficient. This might be specified by the administrator.

ARCS Model consists of 1) attention – to stimulate the teachers to attend and realize on gathering the professional learning community of practice, 2) relevance – there is goal of knowledge interested and gathering in the professional learning community to develop the instruction for the learners, 3) confidence – cooperate and encourage each member to reflect the good practice of learning management and reinforce the teachers to make them self confidence in presenting the data discovered for encouraging the appreciative inquiry learning process 4) satisfaction – the opinion on community and the practical process, the evaluation of
satisfaction on learning activity in the community. The teachers in the learning community are able to understand the benefit of knowledge sharing among members.

Self-directed learning consists of 1) learning strategy on self-directed learning of cognitive domain 2) learning strategy on self-directed learning of knowledge sharing behavior and reflecting the good practice in the community 3) learning strategy on self-directed learning of gathering the community via online system 4) learning strategy on self-directed learning of motivation.

Appreciative inquiry is the process of looking good view by focusing on the better thing. Talking about good or better thing, the imagination will pull out the creativeness in human and then the members will specify the strategy to gain sustainable development. This consists of 1) discovery 2) dreaming 3) designing 4) destiny.

The evaluation of forming professional learning community of practice to enhance the practical community using ICT for basic education teachers used the questionnaire and interview.

4. Characteristics of community consists of 1) value and vision of learners and leadership of members 2) responsibility of learners 3) cooperative learning 4) experts for learning in community and expert in group 5) professional teacher reflection 6) mind opening in networking and cooperation 7) forming of interesting group 8) trust to encourage and support among members

5. Outcomes consists of 1) professional learning community of practice 2) learning achievement of the learners 3) learning of the students 4) knowledge sharing

The professional learning community of practice to enhance the practical community using ICT of basic education teachers Model

- **External facilitators and inhibitors**
  1. ICT supporting resources
  2. Policy for supporting ICT from administrators

- **Internal facilitators and inhibitors**
  1. Goals and philosophy
  2. Innovation of learning management
  3. Teacher’s academic standing

- **Process**
  1. Readiness for information technology resources
  2. Process of creating professional learning community of practice
  - ARCS Model
  - self-directed learning
  - appreciative inquiry learning process
  - The knowledge management process on community of practice had 7 steps
  3. The evaluation of forming professional learning community of practice to enhance the practical community using ICT for basic education teachers used the questionnaire and interview

- **Characteristics**
  1. Value and vision of learners and leadership of members
  2. Responsibility of learners
  3. Cooperative learning
  4. Experts for learning in community and expert in group
  5. Professional teacher reflection
  6. Mind opening in networking and cooperation
  7. Forming of interesting group
  8. Trust to encourage and support among members

- **Outcomes**
  1. Professional learning community of practice
  2. Learning achievement of the learners
  3. Learning of the students
  4. Knowledge sharing
B. A development of professional learning community of practice to enhance the practical community using ICT for basic education teachers. The process was as follow:

- Inform the basic education teachers to participate the project of operational training for professional learning community of practice to enhance the practical community using ICT
- Hold on the project of operational training on the topic “creative media using ICT for developing advanced thinking skill of the 21st century students”. The participants were 94 basic education teachers
- Present the project of basic education teachers on using ICT for instruction. The video files were uploaded to the system via http://www.plcictteacher.com/

C. The results of professional learning community of practice to enhance the practical community using ICT were as follow:

- The participants had formed the professional learning community of practice to enhance the practical community using ICT by sharing knowledge and experience in many ways
  - The teachers of mathematics group had created the website of funny mathematics with teachers. They created the mathematics lessons and instructional media using GSP program via YouTube. The project-based learning were used and the students studied more through the website and Facebook.
  - The teachers of science group took the technology literacy and life skill using ICT for instruction. They used PowerPoint in lecturing and slide share. They also used the video on the topic “microscope”. The students were assigned make video clip about genetics and uploaded on YouTube for sharing knowledge among the students. They also made a website as a center of learning biology to encourage the students on individual learning. The students can study anytime, anywhere and ready to be part of learning society. The teachers also assigned the students to make website on the topic “Organic system of human”. The students made decision to choose the topic themselves to enhance ICT skill for the students. This can completely enhance the thinking skill and ICT literacy for the students. The result to the students was that they were eager to learn more. Different from reading text, the students like to surf the knowledge via internet and eager to inquire knowledge on the lesson learned. The most important was that the students gained the learning efficiency by using ICT, multimedia, animation, video from YouTube to understand the lesson learned. The students were eager to top up their knowledge in the future. This can be concluded that the use of ICT in learning management can develop the students’ advanced thinking skill.
  - The teachers of social-science group shared the experience on using ICT. The students surf media from YouTube and downloaded it to share the friends in the class. The course of history, geography can be able to use the online media to stimulate the students to learn more.
  - The teachers of occupation and technology group used ICT for helping in the task of making products such as graphic work. The students used graphic work in presentation on their own blog or in social network. The students will be proud of their products or project. Their friends in network commented or pressed Like, they would be so proud and stimulate themselves to make better project. The students could learn individually from this activity. The teachers can evaluate the learning achievement by sharing knowledge with the students. The students who did not like to talk or discuss, shy to speak with friends or teacher, will share their opinion via the blog. They also can answer via the blog or Facebook. The flipped classroom approach was also used in this group. The students did their homework at school and on the other way, they learned the lesson at their home. There existed the online classroom and specify the students activity to do at home by studying via internet.
  - The teachers of foreign language group have changed into 21st century in school. The students had smart phone, iPad, Tablet and used in school. In English language learning, these tools can also help the students to develop the language learning skills. Line application was used in sending video of speaking skill practice to the teacher.
  - The teachers of Thai language group used ICT to make the students excited. The students used Google for searching new knowledge by themselves.
D. Following up the work procedure, studying the opinion and method for the teachers to form the professional learning community of practice using ICT was used in integrating the teachers’ instruction management.

Being the professional learning community of practice of basic education teachers found that the change of basic philosophy, the change of teachers’ way of working, the change of school culture, the change for the students, and the change of evaluation was found at the level of “much”.

The change of basic philosophy: it was found that the teachers used most teacher-centered approach. The change was focusing on knowledge they teach to the lesson learned of the students. The teachers identified that the students gained knowledge and skills on the lesson learned, not considered on content. Schools or educational region had formed the teacher’s teams to create the knowledge together about the curriculum needed for the learners at the level of “much”.

The change of teachers’ way of working: it was found that the teachers had confidence in learning management and had good attitude in using ICT for integrating in instruction. This was at the level of “most”. In addition, the teacher’s team do gathering in specifying the level of importance of learning standard, team working, targeted on students’ learning and teachers. The teachers had ICT skill for teaching. The teachers cooperated on the most important for learning achievement of the students. The teachers changed the idea of “what the students should learn” to “what is the essential knowledge for the students”. Teachers and friends open minded to share knowledge of teaching methodology and how the teachers should do in their career. And the last, teachers altogether helped each other to find the way to gain more learning achievement of the students. The practical on this issue was at the level of “much”.

The change of school culture: it was found that the school of teachers had collaborative for the students at the level of “most”. Most schools had changed the long-term strategy to short-term strategy. The schools had goal, vision to cooperate for students. And the school raised up the small accomplishment for the teachers by focusing on quantity, frequently. This was at the level of “much”.

The change for the students: it was found that the opportunity to let the students learned appropriately, time schedule and lesson management flexibly can be provided to sub-standard students. The underdeveloped students were systematically helped to gain standard. And finally, there was a change from remedial teaching to teaching for understanding. This was at the level of “much”.

Finally, the change of evaluation: the evaluation focused on the progressive of learners individually. The examination was used to communicate and motivate the students to learn. The teachers used many balance ways of evaluation. The teachers used some way of evaluation to test the knowledge and skills of the students but frequently. The teachers tested the students for them to improve their learning. The teachers improved their technique of learning management. The teachers changed the way of testing to find the students who needed more advice to learn together with the group. And the last, school or educational region had continually created the team for specifying the criterion. This was at the level of “much”.

6 DISCUSSION

1. The use and accessing ICT that affected to a development of professional learning community of basic education teachers: It was found that the basic education teachers use and access ICT for instruction management at the level of “much”. The use of ICT was to support the instruction model and work procedure. The acceptance on using ICT for enhancing the students’ learning and experience was at the level of “most”. It is essential for the teachers in 21st century to gain information technology literacy for instruction management. According to the framework of associate for developing skill in the 21st century, basic knowledge of digital according to the framework of ISTE, and framework of ETS on digital knowledge. (Partnership for 21st Century Skills, 2006; International Society for Technology in Education, 2007; Educational Testing Service, 2007) The main point was to have basic knowledge of information technology and communication to use for developing knowledge and skill of 21st century. Technology must be used for learning content and learning skill. The creativity, innovation making, using technology for communication and cooperative working, being digital population to act legally about information technology, and the application of thinking skill used, including the skill of technique to get advantages from technology. All can influence the innovation of changing in personal level and social change.
The policy and community development of professional learning community of basic education teachers was at the level of “much”. The school provided resources for convenient administration and innovative media and appropriate technology for teachers. The teachers planned together to accomplish many projects in short time. The administrators support the knowledge sharing and created the culture of cooperation for learning of all. The teachers cooperated to work according the importance of the students’ learning achievement. The work procedure mentioned was able to encourage the professional learning community. The main point was the learning process of the students, the culture of cooperation for learning of all, included doing, continually development and specified the learning achievement of the students. (Wijarn Panich, 2012)

The problem and obstacle affected to the development of professional learning community of basic education teachers was at the level of “much”. Most agreed that the vision and mission of school was not related to professional teacher development, budget, and supporting from higher administrators in educational region on staff’s work procedure. This matched the functions affected to the development of professional learning community of basic education teachers. The opinion was at the level of “much”. The administration on knowledge sharing and being the creative organization, human resource development, motivation for creating learning for all, atmosphere and culture of school, the policy function and the educational region was also included. The method of education development to 21st century must consider on encouraging to practical education movement such as financial tool development to provide the budget from community or society in education management. The education quality was also shifted and extended to gain good quality using technology for education development. Those were functions of learners’ learning and student centered approach and integrate used. (Office of Education Council, 2014)

2. A develop the professional learning community of practice to enhance the practical education of basic education teachers in learning management using ICT. There were 5 components 1) External facilitators and inhibitors which have to use ICT supporting resources and policy of administrators. This harmonize to Stoll, Louise and others’ approach (2006) that identified to be the external facilitators to motivate on practical of rules, regulation policy, basic structure to make strong community. 2) Internal facilitators and inhibitors which consist of goal and philosophy. The innovation of instruction has to be created to increase the position of teachers. This harmonizes to Wijarn Panich (2013) that mentioned about the culture changing of school to help others, to have goal and intend together to short time accomplishment. 3) Process refers to readiness preparation, information technology resources and process of forming professional learning community. The process connects to the role of information technology in 21st century to reach the learning achievement of the learners. Technology is used to adapt the learning management, access to content and administrate the educational system. Not only technology, but having experts on the network is also stimulating the community to make participation cooperative learning. (Office of the national council, 2014) Schwier (2002) also identified that community takes role as a model to encourage the knowledge sharing among the community members. This leads to gain the learning eagerness and the motivation to have participation cooperative learning of the members and brings to the appropriate way to practice from the cooperative thinking. 4) Characteristics of the community which include the cooperative learning, community learning, expert lists, and group’s expert that reflects the professional teacher being. The networking and open minded in cooperation, trust, interesting group member and supporting can also help. These characteristics should be continual to gain sustainable community. The process of professional learning community is the process of making participation cooperative activity among members in online learning community. Office of learning technologies (1998) mentioned that online learning community should have a cooperation to solve problem, improve and develop the community to progress according to the idea of Bryce-Davis (2001) of online learning activity in any situation. The professional learning community will truly help members’ interaction skill of the members. And 5) Outcomes, the professional learning community, learners’ achievement learners’ learning, cooperative knowledge sharing are harmonized to the idea “Teachers for Students”. The learning creation in 21st century identified that the professional learning community must focus on “Learning by Doing” and “Learning achievement” whereas the teachers’ role is to coach and being the learning facilitator to create learning environment for learning. The teachers evaluate the development and progress of the students. Learning by doing is the concept for teachers. (Wijarn Panich, 2012, Sasin Institute for global affairs, 2012)

3. The result of professional learning community of practice to enhance the practical community using ICT for instruction of basic education teachers found that the professional learning community of practice consists of 6 learning group. The teachers of occupation and technology group had the most
participation at 47.61%, the next was the teachers of science group at 28.57%. This might be because of
the both learning group got used to use technology (ICT) as tools for instruction. Both group used
electronics media in learning management in the normal classroom by using PowerPoint and video
clip downloaded from YouTube (www.youtube.com) and the both shared knowledge the most. These
activities affected the knowledge sharing and interaction among group in the community. The concern
of members in work procedure was harmonized to the idea of Misanchuk, Anderson, Craner, Eddy
and Smith (2000) which raised that the professional learning community would progress by the
members and connection among the members. The more they interact, the more they gain
connection. The community grow more and stronger will help the members to learn and enhance each
other by different ways of practice. The members of professional learning community are able to change the behavior of members and realize on learning to the
members. This continually affected to the learning community center. So the online learning
community is one of the alternatives for individual to learn

4. The following up of the implementation of professional learning community of practice to
enhance the practical community using ICT of basic education teachers; it was found that the teachers
participates the community at the level of “much”. The most practice was the change of basic
philosophy, the inferior was the change of teachers’ way of working. This was harmonized to Worapot
Wongkitrungruang and Atip Jitlerk (2011) mentioned that the educators and teachers’ role needed to
change by the culture needed to lead the school and education region to have profession learning
community. The change of teachers’ role was done by team working and aimed to do for learning
achievement of teachers and students. The team of professional learning community had to think
together, identify the level of learning standard importance, and team working. The teachers shared
knowledge of instructional techniques and learning activities included the teachers’ responsibility. The
learning achievement of the students was the main point in the instruction. The best practice of
instructional management for the science group, occupation and technology group, and foreign
language group used ICT to enhance the instructional management both in the class and out of the
class using project-based learning and also support the life skills of the learners. The ICT could be
used to create project, decreased the area of keeping projects the students’ presentation. The students’ discussion showed the leadership, for example, the students used the appropriate software.
The students learned by doing while the teachers were the coach. The students practiced by doing,
used the tools such a video camera and edit the project by themselves. The electronic port-folio of the
students was done by the students. The ICT of the teachers and students for instructional
management are such as line, social cam, and video clip. The students are proud of their project. It
was able to say that ICT could enhance in English learning with more funny, more interesting. The
teachers and students had good attitude on using ICT like ICT game in the foreign language
instruction and other subject. The function supported the use of ICT to accomplish was supported by
Uninet from Office of Higher Education Commission. Uninet helped the schools to be strong in using
ICT for instructional management integrated with other subject group easily. The schools’ director
supported the e the ICT for teachers in the instruction. The teachers who were interested in using ICT
had trained about ICT and extended the knowledge learned for the teachers. The knowledge was also
taken to use for the students. The students gained knowledge of using ICT and good attitude on using
ICT for learning. The students presented the project via information technology. The result of using
ICT was harmonized to the plan of Thailand education development of Thailand Office of Education
Council (2014) to gain good citizen and complete in multi approach. The model of management to
balance the centralization and decentralization focused on the participation of members. The teachers
are the basis of education development. The teachers should be developed to gain the best quality
and do the best practice. The profession of teacher should be practiced and developed themselves in
form of networks. The teachers should share their experiences and use information technology as
function to enhance the students’ learning, response the students-centered approach via the content
harmonized to individual age of the students’ development.
REFERENCES


