

Developing a System of Learning Management through Professional Learning Communities for Networks of Small Primary Schools

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Abstract

This research aims to study: 1) the components ; 2) the current and desirable state of a system of learning management using the professional learning community for the networks of small primary schools; 3) to develop a system and 4) to examine the effects of implementing a system of learning management using professional learning community for a network of small primary school. Research and Development process was implemented consisting of 4 phases: 1) studying the system components; 2) studying current and desirable states of a system of learning management; 3) designing and developing the system and 4) implementing the developed system. Tools used for data collection were an evaluation form, a questionnaire, an interview, and a test. Statistics used for data analysis were percentage, average, and standard deviation. The results showed that: 1) the components of the system of learning management included: curriculum, teachers, administrators, students, resources, and networks. Process factors involved with learning management were student analysis, learning objectives determination, content definition, teaching methods, defining learning media, learning activities, and evaluation. Output factors included students

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and teachers. Feedback factors included reporting, feedback, and improvement as suggestions. 2) Current state of the system of learning management was at a moderate level and the desirable state of the learning management system was at the highest level. 3) There were seven sub-system units of the entire learning system: student analysis, learning objectives, content design, teaching method, learning media design, learning activity management, and evaluation. 4) The development of the system of learning management revealed that: students have higher academic achievement than the criteria and desirable characteristics based on basic core curriculum. The results of the assessment were at a good level to everyone. Teachers have higher levels of knowledge and understanding about the system of learning management than the standard criteria, and they can teach by using the professional learning community for the network of small primary schools at the highest level.

Keywords: Learning management, professional learning community, small primary schools

Introduction

The Office of the Basic Education Commission is responsible for the administration of basic education. The main task is to manage basic education thoroughly and to meet the quality standards of the curriculum by using a student-centered approach to spread educational opportunities equally in both urban and rural areas. They make sure schools are ready to provide quality education for everyone in which education will lead to the strengthening of the people. This is a powerful tool of social capital to tackle poverty. There are ways to drive education by giving students the full developmental potential. Children can be developed so that their brains and imaginary abilities can develop without limitations. (Office of the Secretary of the Council of Education, 2012: 9-11) There are 31,021 schools under the Office of the Basic Education Commission, of which many are small schools with fewer than 120 students each and serving a total population of 15,418 students (Office of the Basic Education Commission, 2014: 10). Consequently, the number of smaller schools tend to increase due to the decreasing number of school-age population. Educational management cannot adequately reflect quality and performance. The use of resources is not worth it. There are limitations to the use of teachers or inadequate training of directed-major teachers as well as a lack of educational technology and media. As a result, the quality of education continues to decline. (Chumpolla *et al.*, 2014: 5).

Small schools' quality is relatively low compared to other schools (Lincharoen *et al.*, 2010: 84). The number of teachers per class instructional media and

materials are in shortage. Both factors are due to the budget allocation criteria by relying on the number of students. This causes a lack of effective management in most of the small schools. (Office of the Basic Education Commission, 2012). More over, the ministry is unable to fully equip its teachers. Small schools outside of the city are unable to compete academically and enthusiastically. Students lack motivation to learning. This can be a great effect to the small schools as can be seen from the average score of O-NET test which are lower than that of the medium and large schools (Lincharoen *et al.*, 2010: 84). The results of the National Educational Testing's of the 6th grade of academic year 2011-2013 showed that the national average decreased continuously; the average O-NET scores for academic year 2011 was 49.36%, academic year 2012 was 45.14% and academic year 2013 had an average of 44.81%. Students deserve effective quality of teaching for their talent to reach a level of self-reliance. The educational process must encourage students to develop naturally to achieve their full potential. The learning process is provided by the educational institutions and related organizations to conduct content and activities that are in line with the interests, aptitudes, and differences among students. Students have to balance knowledge, thinking, ability, goodness, and social responsibility to become aligned with the changes and progress of the world (Runcharoen, 2007: 166).

The teaching system is a sub-system in the larger education system (Sukhothai Thammathirat Open University, 2002: 13). Teaching is also part of the system of educational administration. To make learning management effective, it is necessary to develop approaches to learning management that bring together the concepts of system management of work for improving the quality of education and learning management (Valaya Alongkorn Rajabhat University, 2010: 33). It is helpful in organizing learning activities to be able to determine how effective the learning process is. Further more learning management is an important process in implementing a curriculum into practice. It develops students to meet the curriculum goals. The instructor helps students to learn through the content definition in the course. It also includes cultivating and strengthening the desired features of students. The developed skills are critical to meet students's goals. The learning management of the teachers is a factor that affects the effectiveness of student learning (Rodjai, 2009: 145). The schools with acceptable levels of achievement in the national basic education test (O-NET) have various teaching methods to encourage students to have learning skills. They use different teaching techniques in each subject enthusiastically. There is a constant focus on teaching, especially on small schools (Lincharoen *et al.*, 2010: 90). This focus will enhance the student's academic achievement. (Ministry of Education, 2010).

The Professional Learning Community (PLC) was an instrument for encouraging school personnel to share their learning through the ongoing process

of professional development. (Well and Feun, 2007: 141). In the context of the PLC, capacity development and competency must be covered in the development of teacher and school administrators. This will be a tool to improve the learning management of the teachers and the students' learning as well. The goal of the PLC within the school development network is to provide opportunities for teachers and school administrators to participate in a problem solving community. They decide within the school community according to the important mission of the PLC. The school focuses on improving the performance of teachers and administrators to improve student learning (Hord, 2004). The quality of students' learning depends on the quality of teachers' learning. An increase in the quality of education was achieved by increasing the quality of teachers (Chiangkul, 2008: 15). The relationship between teacher performance and the professional learning community results in better student achievement (Calcasola, 2009). The professional learning community can continuously transform students, teachers, administrators and schools (Panich, 2012: 191).

Our current research reflects our interest in learning about and developing a system of learning management using a professional learning community for a network of small primary schools. Teachers and staff in small primary schools have an appropriate system of learning management, it needs to be consistent with their own contexts, so that their efforts will result in higher student achievement. Improve the quality of education in accordance with the intention of the National Education Act will benefit the development of students in small primary schools and the quality of education in a sustainable way.

Objectives

1. To study the components of a system of learning management using the professional learning community for the network of small primary schools.
2. To study the current state and desirable conditions of the system of learning management.
3. To develop an appropriate system of learning management using a professional learning community for the network of small primary schools.
4. To examine the effect of implementing the system of learning management.

Methodology

Research and Development process included four phases as follows:

Phase 1: Analysis of the documents, theoretical approaches and related research literature led to the development of key factors, which were investigated by seven experts.

Phase 2: the current and desirable states of system of learning management were studied by using a 5-point Likert scale questionnaire asking participants' opinions on the above factors. The participants in this study were 1,137 people from 379 small primary schools in northeast of Thailand. Data were analyzed by calculating the Mean (\bar{x}), Standard Deviation (S.D.).

Phase 3: The management system was implemented by analyzing the needs of the process according to the PNI modified formula, field trip study in 3 schools with effective learning management systems and known for their best practices. The system was outlined, and the handbook for implementation was established. Before that, the propriety of both the system and its handbook were investigated by nine experts.

Phase 4: the findings were studied by applying the developed system in 5 small primary schools. Data was collected from 50 students and 5 teachers by using the tests and self-evaluation form.

Results

1. Input factors included curriculum, teachers, administrators, students, resources and networks. Process factors included shared visions and values, shared leadership, creative learning, collaborative learning, learning management, student analysis, student-centered analysis, determining learning objectives, content definition, teaching methods, defining learning media, learning activities management, and evaluation. Output factors included results from students' academic achievement and desirable characteristics and teachers' abilities. Feedback was gathered from reporting and suggestions for improvements.

2. Assessment of the current state of system of learning management was at a moderate level. Desirable condition was at the highest level. 3. The system works through 7 sub-systems: 1) student analysis, 2) learning objectives, 3) content design, 4) teaching Methodology, 5) learning media designing, 6) learning activities and, 7) evaluation. 4. The result of implementing the learning management system was found as follows: 1) the students had higher academic achievement than the standard criteria, 2) students had desirable characteristics based on core curriculum of Basic Education, 3) teachers showed knowledge and understanding higher than the criteria. 4) teachers can teach by using the professional learning community for the networks of small primary schools at the highest level.

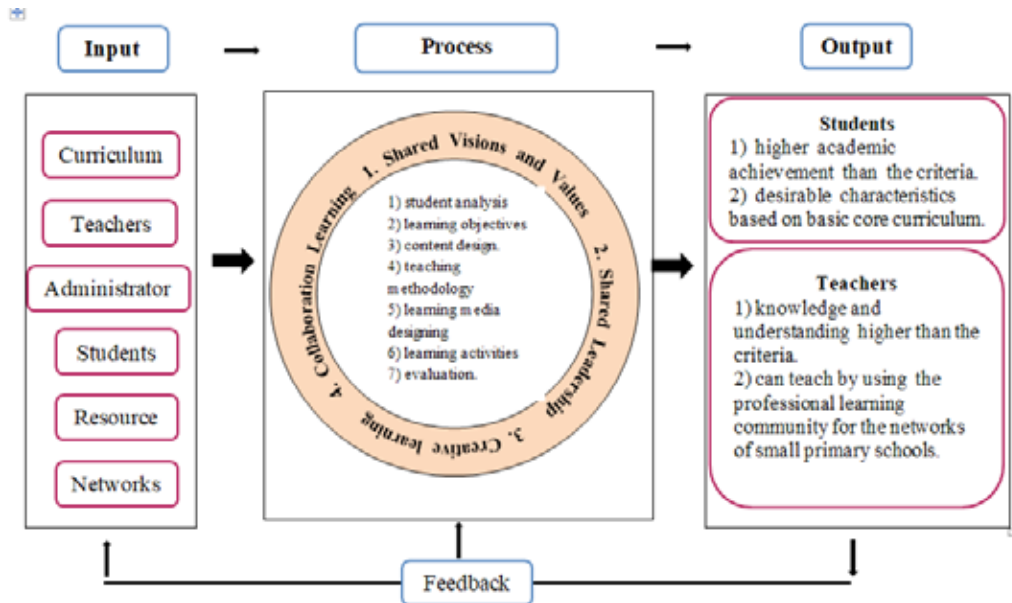


Figure 1 The system of Learning management using the professional learning community for the network of small primary schools.

Discussion

This project saw the development of a system of learning management using the professional learning community of a network of small primary schools. The results are discussed as follows:

1. Because the school is an Open System that including a system features work units, productivity, processes, inputs, and scope. These are sub-systems of a mega-system. The total output of the system unit is caused by the synchronization of the system. Each of them has a system of different dimensions at the same time (Buripakdee, 2001: 135). All systems are heavily influenced by the environment. The system relies on contacting with the persons, other organizations, or divisions. An Open System is a living system with a holistic component of the various features of the system that represent the quality as inclusive. It cannot be reduced to individual parts or components. Systems are stacked from system to sub-system, from sub-system to another sub-system. This is in accordance with Bertalanffy (1950: 42-43). The proposed system component concept consists of: 1) inputs 2) processes 3) outputs, and 4) feedbacks. The process of self-defense and self-control has occurred in order to maintain the balance of the system. This is also in accordance with Ruephan (2003: 138-153). It was found that the form of performance appraisal system of the Basic Education Committee consists of input, process, output, and feedback. This is in

accordance with Thongnoi (2013: 254-258) who found that the developed academic administration system consisted of input, process, output, and feedback.

2. The current state of system of learning management was at a moderate level, while the desired outcome was at the highest level. Current state and desirable condition may be due to the teacher's systematic learning management. It is necessary to develop a curriculum that aligns with the core curriculum and is aligned with the school context. Teachers can organize a variety of learning activities and meet the potential of learners. Full-time teachers have volunteered to develop together. Students are mature and ready for their age. Managers provide support, budget, material and equipment that are adequate and available. Modern information technology is needed. There is a teacher collaboration network between the schools. The needs of students need to be analyzed and then use the information to plan the learning management to set goals that will occur among the learners, both in terms of knowledge and process skills. These include concepts, combination of principles, relationships, and desirable features. Design should cover learning and managing as to the learning response to meet the differences between people and cognitive development. These efforts can bring students to achieve the goal. School should provide an atmosphere that is conducive to learning. Schools need to take care of learners. They need to prepare and select media appropriately according to the activity. Application of appropriate technology is vital to learning management. Evaluation of learners should be conducted in a variety of ways as appropriate for the nature of the subject and the level of development of the learner. Analysis of the results of the evaluation can be used in the encouragement and development of learners, as well as to improve their learning management. This is in accordance with the Ministry of Education (2008: 25-26) to define the guidelines for implementing the core curriculum of the Basic Education into practice. It helps to develop learners to meet the goals of curriculum. The instructor's task is select the learning process and to manage learning by helping learners to learn through the content. This also includes the cultivation and enhancement of desirable characteristics for students to achieve their goals.

3. The system of learning management operates through seven sub-systems: student analysis, determining learning objectives, determining content, defining teaching methods, defining learning media, managing learning activities, and evaluation. The result is probably due to the knowledge that the system has interrelated elements in learning management for learners to achieve quality by teachers and school networks. This is in accordance with Chanchai (2014: 78), who proposed that the development of learning management system should have two types of conceptualized systems, namely systematic thinking and systematic approach. This defines the composition of the system in a hierarchical fashion as

leading to the intended purpose. It looks like a flowchart of operations or work in a sequential manner. Systematic approach is a practical concept used to solve problems in a hierarchical and sensible manner according to the scientific process. It employs cause and effect relationships and is often used to monitor results. If the results are not complete, they will be revised until the results are complete. The learning management system has been developed by analyzing the elements of instruction and arranging these elements in a systematic way in the form of the process feeder. All feedback comes from all stages of the process, teachers and network members. It recognizes and understands its roles and functions, with a focus on student learning. Students need to have enthusiasm and a commitment to work that affects learning to develop academic achievement. There is coordination among the various elements. Teachers should respect the differences in working together. They are to trust each other as well as to share the role in the work. Concept is from study of a variety of ways to perform the task. Then the process can be improved and developed to the best and most comprehensive approach to the whole school. It is also related to exchanging of ideas, how to experience success, and to accept supervision and guidance in a friendly atmosphere.

4. The results of the implementation may be due to the fact that the system has a correlative element in the classroom function. Teachers know how other teachers can achieve quality and school networks work together to change the work of teachers to improve management. Knowledge is the key to student achievement. The learning management system helps to achieve the goal effectively. When problems arose, they can be solved at the point. We can check how learning management works. Teachers need to plan learning management effectively. The learning plan must be conducted and the evaluation must be conducted in accordance with the intended purpose. The processes of developing the instructor's own learning management and making the elements of defined learning management are mutually relevant to their mutual importance, closely and clearly. This will help the learning management to achieve the objectives. Network teachers are also based on shared vision and values. They have leadership, creativity, learning, and exchanging of ideas. This is in accordance with Hord (2004), which states that the results of a school-based learning community is based on development. The opportunity for teachers and school administrators to participate in solving problems and to decide together within the school is the important mission of the professional learning community in the school, as it is focused on improving the performance of teachers. The administrators are to improve the learning of students in accordance with Panich (2012: 135), who stated that the concept of shared values and shared vision are going to bring learning together and applying what you learn to apply creatively together. The combination in this form is similar to driving force. The needs and interests of the members of the professional learning community for learning and professional

development toward student learning standards are in line with Huffman (2003: 21-34), who found the successful schools which have been giving teachers and administrators a vision. Beliefs and values are the goals for student development. School personnel have made consistent efforts in expressing mutual trust by collaboration and communication with each other.

Suggestions

1. Suggestions for applying research results.

The primary school districts should encourage small primary schools to form a network of schools. It should encourage the network to adopt a learning management system using PLC for networks of small primary schools to adapt to their own contexts. School administrators need to understand and see the benefits and importance of a learning management system using the PLC for small primary school networks. It helps to develop student achievement by encouraging and educating teachers continually to realize the importance of a learning management system After Action Review (AAR) should be followed every week. Teachers need to understand the system and cooperate on a systematic basis. Continuous adaptation of the system should be flexible. Integration in the operation should be continuous to provide a permanent professional learning community.

2. Suggestions for subsequent research.

Research on the system of learning management in other schools should be conducted to improve the system to suit that institution. Research should be conducted in depth on each of the subsystems of the management system.

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