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A learning model promoting higher-order thinking skills and active citizenship with global mindedness

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Article Info

ABSTRACT

The objectives of this research were to study the current situation of and the needs for teacher competency development in learning management, and to develop a learning management model. The sample was 95 teachers selected by simple random sampling. Research instruments were a questionnaire and a learning management model created through the process of drafting, evaluation and verification, and improvement. Statistics used for data analysis were mean, percentage, and standard deviation. The findings indicated teachers' opinions towards the current situation of learning management that promotes critical thinking skills and active citizenship with global mindedness at a high level. The need for developing learning management competency were also at a highest level. Components of the learning management model include: i) Basic principles and concepts; ii) Learning objectives; iii) Learning process and learning assessment; and iv) Learning outcomes. The teacher development process includes: professional learning community (PLC), guidelines for learning management, design of learning management, measurement and evaluation, teaching practicum, supervision, reflection, and lesson learned. The model showed the suitability at a highest level.

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1.   INTRODUCTION

Education for the 21st century which is going to rapidly change the world creating new opportunities and possibilities will be creative, challenging and diverse. So, the development of new Thai generation must focus on building high-performing people. Higher-order thinking skills are the ability to think in an effective and strategic ways. The skills itself include critical thinking, creative thinking, and metacognition or known as in-depth learning. Moreover, creative thinking, nowadays, is essential for effective learning process [1]. Development of learners to international standards is required to integrate the teaching and learning management by focusing on enhancing knowledge, abilities, and desired characteristics of learners based on the world declaration on higher education for the 21st century of UNESCO: learning to know, learning to do, learning to live together, and learning to be [2]. Meaningful learning experiences can help students to connect current contents with their current studies for new learning [3]. Apart from that, in order to succeed, quality of learning and teachers are considered crucial for learners to pursue their goals. If teachers know how to effectively organize the learning process, students will gain huge benefits from the learning itself [4].

Changing the role of teachers to suit the current situation requires the improvement of their own paradigms to create up-to-date learning by focusing on the professional learning community process (PLC),

in order for creating more professional communities. Implementing new teaching techniques is a part of teacher's challenges on improving students' learning achievement and making students' learning easier to understand [5]. The results of student quality assessment are reflected by the results of the assessment of Thai students on reading literacy and critical thinking. According to the programme for international student assessment (PISA) 2018 Assessment, Thai students had an average reading score of 393 (The Organization for Economic Cooperation and Development or OECD mean score=487). Comparing to PISA 2015, it found that reading scores decreased by 16 scores [6]. In addition, the results of the ordinary national educational test (O-NET) of academic year 2019 indicated that Grade 6 students had lower scores than the criteria: Thai Language at 49.07 scores, English at 34.42 scores, Mathematics at 32.90 scores, and Science at 35.55 scores [7]. This shows the quality of educational management, especially the development of teachers' competency in learning management that promotes the development of student competency.

In the post-modernization education, teachers need essential skills in learning management and new educational paradigm that emphasizes global citizenship through a moral perspective [8]. Global citizenship learning is therefore one of the methods of learning management that emphasizes the uniqueness of students in being a good citizen of society [9], through the humanism in education, development of consciousness, a search for integration, education for a capacity of discernment, development of scientific spirit [10], and promoting the citizenship that can represent positive changes in their communities [8]. Having an influential teacher facilitated them to exhibit other-centeredness and globally mindedness [11], by adjusting students' thinking about the effects of globalization and promoting moral reasoning and social responsibility [12], promoting and preserving continuity and sustainability of intangible cultural heritage [13], promoting competence in active citizen with global mindedness, a community-based learning process that broad-based and holistic learning emphasizes holistic learning on real-world issues [14], authentic assessments that measure comprehension rather than content, with learners' participation in self-assessment. This research aims to develop teachers to have competency in learning management that promotes higher-order thinking skills. Its focus is on analytical thinking skills and competency in active citizenship with global mindedness. To do so, the researcher considers the consistency and coverage of the curriculum and appropriate assessment tools [15], by connecting the curriculum to create interactions between teachers and students, and parents and community.

2. RESEARCH METHOD

This research implemented the method of research and development. Its aims were to study the problem situation and needs for teacher capacity development in learning management and to develop a learning management model which promoted analytical thinking skills and active citizenship with global mindedness. The use of the community-based learning and the process of professional learning community was employed. The mixed method research designs were implemented [16]. The research was divided into two phases.

Phase 1: Study of the current situation and needs for learning management that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community process was organized with the sample of Thai language teachers in schools under the Maha Sarakham Primary Educational Service Area Office 1 during academic year 2020. The simple random sampling method [17] was used to select 95 teachers from 197 schools. The survey research method [18] employed questionnaire for samples' opinion. Qualitative data was collected from 10 teachers through the focus group discussion [19] of the 5-Likert Rating Scale [20] with Index of item–objective congruence (IOC) between 0.60 and 1.00. Data from the questionnaire was analyzed and figured out the percentage, mean score, and standard deviation. Data from the focus group was analyzed through content analysis method.

Phase 2: Development of the learning management model that promotes critical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community process was conducted in three steps: i) Drafting the teacher development model; ii) Evaluating and verifying the model; and iii) Improving the model before trying out, as shown in Figure 1 and the following details:

− Draft of the teacher development model for developing the learning management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community was conducted by using the data from phase 1 for setting the five developing components: i) Basic principles, concepts, and theories, ii) Model objectives, iii) Learning indicators and subjects; iv) Teaching procedure; and v) Measurement and evaluation. The teacher development process was divided into six units: Unit 1 professional learning community (PLC); Unit 2 guidelines for learning management; Unit 3 design of learning management; Unit 4 measurement and evaluation; Unit 5 teaching practicum, supervision, reflection; and Unit 6 lesson learned.

− Evaluation and verification of the teacher development model for developing the learning management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community was made by the five experts. The model draft consistency as well as the suitability and possibility of the model were evaluated. Overview of the suitability was at a high level. When compared to each other, the suitability of all components was found higher than a high level.

− Improvement of the model draft before trying out in the real situation of learning management was conducted for figuring out the quality before carrying out with the sample. The target groups of this research, selected by purposive sampling technique, were 10 Thai language teachers and 300 Grade 6 students of 10 classrooms in schools under the Maha Sarakham Primary Educational Service Area Office 1 during academic year 2020. An improvement was made again after trying out concerning to the suitability of time and activities.
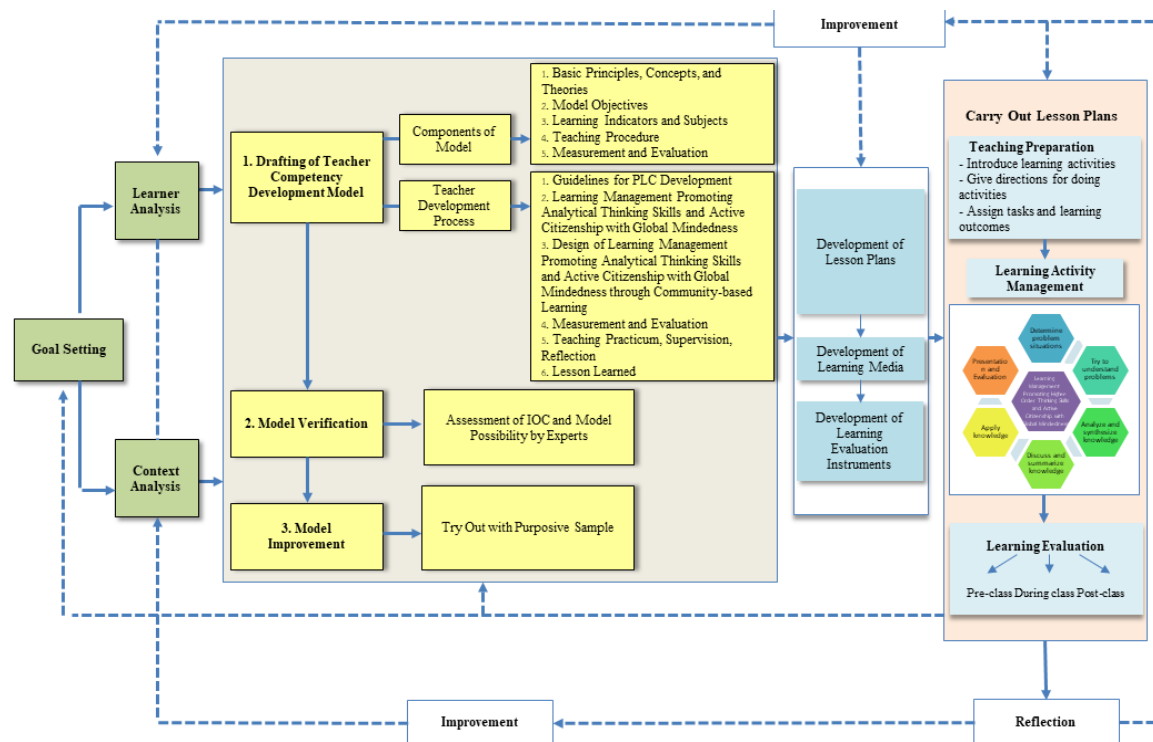

Figure 1. Learning model promoting higher-order thinking skills and active citizenship with global mindedness

3. RESULTS AND DISCUSSION

The results from current situation studying and needs for teacher competency development in learning management promoting analytical thinking skills and active citizenship with global mindedness through the community-based learning and the process of professional learning community are displayed in Table 1. As shown in Table 1, the findings suggest that teachers have overall opinions towards current situation of learning management that promotes critical thinking skills and active citizenship with global mindedness in high level $(\bar{X}=3.70)$. Focusing on each aspect, the results show that learning aspect is displayed in high level $(\bar{X}=3.73)$ and the next one is learning materials and resources which is also in high level $(\bar{X}=3.70)$. In the aspect of measurement and assessment, the results are also shown in high level $(\bar{X}=3.61)$. Next, the overall need for developing learning management competency that promotes critical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community process is displayed in highest level $(\bar{X}=4.65)$. When focusing on each aspect, it shows that active citizenship with global mindedness promotion results highest level of opinions $(\bar{X}=4.66)$. Furthermore, promoting critical thinking skills is also displayed in the highest level $(\bar{X}=4.63)$.

Table 1. The results of current situation analysis

Survey results	Mean	Percentage	S.D.	Transcription
1. The current situation of learning management that promotes critical thinking skills and active citizenship with global mindedness				
1.1. Learning aspects	3.73	74.65	0.78	High
1.2. Learning materials and resources	3.70	73.94	0.80	High
1.3. Measurement and assessment	3.61	72.17	0.85	High
Total	3.70	74.00	0.79	High
2. The need for developing learning management competency that promotes critical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community process				
2.1. Promoting critical thinking skills	4.63	92.53	0.55	Highest
2.2. Promoting active citizenship with global mindedness	4.66	93.28	0.54	Highest
Total	4.65	93.05	0.55	Highest

This is because of the current learning management emphasizes that teachers play an important role in the transfer of knowledge. If changing roles for students to learn by experimenting, practicing and exploring by themselves, it will have a greater effect on the development of students' critical thinking skills. However, many teachers still use a teacher-centered approach or descriptive teaching method that focus on teaching content and encourage memorization rather than ask students to think critically, solve problems, or seek knowledge on their own. This makes the learners unable to think, lack of thinking skills, and lack of interaction with each other in learning. Teachers do not stimulate their desires to learn.

According to Doungwilai, the learning process to be effective, management should focus on the learning experience especially practical work to allow students to feel the real work. In addition, learning experience provides students with hands-on lessons, to learn how to solve problems, to plan and to be able to do analytical thinking to learn and build their knowledge [21]. Using questions to develop students' higher-order thinking skills can be a tool to help teachers apply them to students, so they can use questions to practice high-level thinking skills [22]. According to Tayler, the development of a learner's thinking is related to the contexts and methods that help the learner to learn. It is time for teachers and educators to adopt new techniques in integrated teaching to develop higher-order thinking skills. Teachers therefore need to develop the learning process, especially the learning management competency that uses the professional learning community (PLC) for development [23]. Hord stated that the PLC practically is a group of motivated or enthusiastic individuals with a vision of learning to support the goal, particularly the development of teachers to have a better understanding of the design and organization of learning activities, in order to cultivate students' higher-order thinking skills by using school–based assessment. This kind of activity management will affect the learning achievement of students [24].

The learning model in which learners involve in taking action and using teamwork process is a learning management that emphasizes students to behave as responsible citizens with the fulfillment of the roles and duties, customs, traditions, respect of rules, regulations and laws, acting as a citizen participating by learning the basic knowledge of politics and governance, coexisting with others depending on each other, applying knowledge through voluntary work, taking responsibility for community by collaborating with others in solving problems and developing society. The 21st century teacher competency development in learning management for schools in Nakhon Ratchasima Province of Chayapol Thongphukdee and Jakkapong Prongprommarat suggested that the needs for 21st century teacher competency development in learning management displayed 0.06 to 0.23 in priority needs index. Teacher competency development in learning management, evidence, and learning development programs, which included conferences, clinical supervision, and professional community in learning management, were found corelated (Chi-square=23.87, df=12, p=0.264). Moreover, the experts had estimated the possibility of the process and declared high level of potential which was above the standard with 0.01 significance [25].

The synthesis of survey and real life data to identify problems and solutions for teacher learning management in international standard schools by surveying the data on school curriculum management, and analyzing teacher's learning management condition based on the problems from school curriculum management of Patprawet Sattabutvorakul indicated that the problems of learning management could be divided into two issues thinking process or thinking system of students is not systematic, and teachers lack understanding of the nature of the subject with appropriate learning processes and the lack of good teaching management method. The problems of learning management were the readiness of students to perform activities in each step, working time, communication skills, thinking skills and work skills. The guidelines for solving problems of teachers' learning management included: administrators should organize a teacher meeting to plan for organizing the learning process; teachers should study a variety of research and acquire more on teaching and learning activities, attend training or seminars to gain knowledge, use questions to open

up students' thoughts, use an accurate and appropriate example for student works as a case study, and use social media such as Facebook to counsel students outside of school hours [26].

The results of developing a learning activity management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and the process of professional learning community, and the draft of the teacher development model for developing the learning management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and professional learning community were based on the experts to estimate the suitability of the conclusion and the development as shown in Table 2. According to Table 2, the results of the estimation of the suitability of learning activity management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and the process of professional learning community is the highest in overall transcription ($\bar{X}$=4.51). When focusing on each aspect, it shows that the components of model have highest level in transcription ($\bar{X}$=4.56) as well as teacher development process which also transcribed as highest level ($\bar{X}$=4.47).

Table 2. The estimation of the suitability of learning activity management model

No.	Topics	Mean	Percentage	SD	Transcription
	Components of model	4.56	91.24	0.48	Highest
1	Basic principles, concepts, and theories	4.40	88.00	0.49	High
2	Model objectives	4.40	88.00	0.49	High
3	Learning indicators and subjects	4.40	88.00	0.49	High
4	Learning activity management	4.63	92.60	0.48	Highest
	4.1 Determine problem situations	4.60	92.00	0.49	Highest
	4.2 Try to understand problems	4.60	92.00	0.49	Highest
	4.3 Analyze and synthesize knowledge	4.60	92.00	0.49	Highest
	4.4 Discuss and summarize knowledge	4.60	92.00	0.49	Highest
	4.5 Apply knowledge	4.60	92.00	0.49	Highest
	4.6 Presentation and evaluation	4.75	95.00	0.43	Highest
5	Measurement and evaluation	4.60	92.00	0.49	Highest
	Teacher development process	4.47	89.33	0.49	High
1	Guidelines for PLC development	4.60	92.00	0.49	Highest
2	Learning management promoting analytical thinking skills and active citizenship with global mindedness	4.60	92.00	0.49	Highest
3	Design of learning management promoting analytical thinking skills and active citizenship with global mindedness through community-based learning	4.40	88.00	0.49	High
4	Measurement and evaluation	4.40	88.00	0.49	High
5	Teaching practicum, supervision, reflection	4.40	88.00	0.49	High
6	Lesson learned	4.40	88.00	0.49	High
	Total	4.51	90.28	0.49	Highest

The results of developing a learning activity management model that promotes analytical thinking skills and active citizenship with global mindedness through the community-based learning and the process of professional learning community indicated the five main components: basic principles, concepts, and theories; objectives; learning indicators and subjects; teaching procedures; measurement and evaluation. They were consistent with the principles, concepts, theories, and were arranged in an appropriate order for teaching and learning. The design and development of this learning management model that promotes critical thinking skills and active citizenship with global mindedness through the community-based learning was systematically planned to achieve the effective learning management model.

According to Khamanee [27], the learning management model covering essential elements that are organized in an orderly manner according to various philosophies, theories, principles, concepts or beliefs, which consists of important processes or steps in learning management, as well as teaching methods and teaching techniques can facilitate the management of learning to be in accordance with the theories, principles or concepts that are upheld, proven, tested or recognized as effective. As suggested by Joyce and Weil [28], the learning management model consists of the principles, concepts and basic theories of the learning management model, objectives of instructional management, teaching procedures or instructional processes that will help teaching and learning achieve the desired objectives, social system, roles of teacher, roles of learner, response principles, communication and interaction and support systems, learning materials and resources, and effective measurement and evaluation that will result in both direct and indirect outcomes for learners.

As Barnett and Francis [29] studied the creation of a tool to measure high school students' higher-order thinking skills (HOTS), tests with high-order thinking questions were good at promoting students' higher-order thinking. Developing a professional learning community model was another approach to

enhance learning management skills, systematic thinking, and the development of higher-order thinking skill modules for teaching writing to English as a second language (ESL) learner. It was carried out in two phases. The first phase involved analyzing problems and needs for teaching writing through higher-order thinking skills in selected six secondary schools using the analyze, design, develop, implement, and evaluate or ADDIE model by ESL teachers and HOTS experts to create the modules. In the second phase, 10 teachers were observed to determine the effectiveness of the HOTS modules developed for teaching writing. The results showed that the HOTS module served as a guideline for teachers to apply and integrate thinking skills in the process of teaching writing. The developed modules can be applied as a guideline for teaching and learning [30].

4.   CONCLUSION

The current situation of learning management that promotes critical thinking skills and active citizenship with global mindedness, in overall, is at high level ($\bar{X}$=3.70). Meanwhile, the needs for teacher competency development in learning management promoting analytical thinking skills and active citizenship with global mindedness through the community-based learning and the process of professional learning community, in overall, has the highest level also ($\bar{X}$=4.65). The results of the analysis were used by the researcher to design the model of teacher competency development in learning management that promotes critical thinking skills and active citizenship with global mindedness through community-based learning and professional learning community process. The learning management was designed in accordance with the subject content based on the curriculum and authentic measurement and evaluation. This is in line with the key characteristics of a learning management model that promotes critical thinking skills and active citizenship with global mindedness based on community and learning-supported environment.

The results of developing the learning activity model promoting critical thinking skills and active citizenship with global mindedness through community-based learning and professional learning community process indicated the overall suitability of the model at a highest level. The model of learning activity management promoting critical thinking skills and active citizenship with global mindedness through community-based learning and professional learning community process consisted of five components: basic principles, concepts, and theories; model objectives; learning indicators and subjects; teaching procedures; and measurement and evaluation. The teacher development process consists of six learning units including: i) Unit 1 professional learning community (PLC); ii) Unit 2 guidelines for learning management; iii) Unit 3 design of learning management; iv) Unit 4 measurement and evaluation; v) Unit 5 teaching practicum, supervision, reflection; and vi) Unit 6 lesson learned.

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