



IC-12

The Development of Teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking under Mahasarakham Educational Service Area Office

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Abstract

The purposes of the study were 1) to develop the teacher development program in Thai learning management in order to enhance students' critical thinking, and 2) to assess the potential and effectiveness of the teacher development program in teaching Thai language. The sample group was 30 Thai teachers under Mahasarakham Educational Service Area Office. The instruments were the manual of the teacher development program in Thai learning management, the program assessment, the interview, the appropriated assessment form, the possibilities and the effectiveness of the program, and the satisfaction assessment form. The statistics used were mean, standard deviation with 5 Likert scales.

The results were found that program creating included the principals of the program, the objective of the program, the purposes of the program, content and activates of the program, and the program assessment. There were 6 modules and the potentials and effectiveness results of the teacher development program in Thai learning management which aimed to enhance students' critical thinking that found the potential of the action process to the results potential which was averagely at 91.27/88.00, 2) the effectiveness of the posttest was higher than the pretest at 0.756 or 75.67%.

Keywords: Program, Enhancing, Critical Thinking

1. Introduction

Nowadays, the advancement of new technology is change on both nature and human daily life, the information system that rapidly spread out to the whole world which were beneficial for developing the economy, society and culture, government, education, and medical science. The human society has started to be Muang community in changing, and community members must adapt their themselves to the world situation. Education development is the most important thing for people in living in the society safely and happily also in both country and local levels by focusing on the children's skills which emphasizing on children and teenagers' need in 21st which are critical thinking and problem solving in order to allow teenagers adapted their themselves with changing atmosphere and to survive in this present and future happily (Sinthapanon, 2017). Critical thinking is the art of criticizing and assessment of something or problems by the attitudes that focusing on improving our idea. This is similar to self-advice which improving our though through the standard of striving for excellence carefully. Critical thinking would support the communication and increase the potential capabilities that striving to overcome the egocentrism and sociocentrism (Paul and Elder, 2008). Learning management in the new ways focuses on the students' learning process to gain knowledge and critical skills by using it as the decision tool in various situations which leads to use to find the fact, new changes in order to gain the better things in daily life. Critical thinking could support finding problems and ways to solve problems by self-learning management focusing on thinking systematically on learning management under the National Education Act. B.E. 2542 (1999) article 22 which defined that education has to hold to learners' capabilities and self-development and emphasizing on child centered. Moreover, the Ministry of Education announced that the education should be improved in the second century (2007-2018) which defined that in 2018, Thai people would have self-learning skills, love to read, be studious, be communicative, have critical thinking skills, creativity, have the public consciousness, be tidy, have the common interest, be moral and ethical that be modernize. Consequently, the Ministry of Education defined the strategic on learning innovation in the 2nd century called "New Revolution" included improving Thai people in the modernize age, developing the quality of Thai teachers,



developing the institute quality and new resources, and developing the quality of new management through the heart of education innovation. In this 2nd century, developing Thai people in this new era to be studious, have self-learning skills, have long life learning, be communicative, have critical thinking skills, can solve problem, and be creative. These are important power of developing the country in the future (Pornrungrroj, 2003).

The result of Program for International Student Assessment: PISA in 2018 focused on reading which used to assess 600,000 people who were 15 years old from 32 million people, 79 countries/economic zones. In Thailand, The Institute for the Promotion of Teaching Science and Technology (IPST) used the online platform to evaluate learners. Besides that, online questionnaire was used to collect the data from school administrators. The results of PISA 2018 found that there were average scores in 3 parts (Reading, Math, and Science) which were lower than the standard scores from OECD. When comparing the scores between PISA 2015 and PISA 2018 found that the reading scores were lower 16 scores. For Math and Science, the scores were higher 3 and 4 scores orderly. However, when analyzing the trend of scores changing since the first assessment till now found that the scores of Math and Science were stable but the reading scores were decreased continuously (PISA Thailand, The Institute for the Promotion of Teaching Science and Technology, 2018). It could be shown that the government and education institutes have to urge the education innovation in order to help learners in critical thinking, in solving problems, and having long life learning. From the assessment from the National Educational Standards B.E. found that the assessment results were not standardize in Standard 4 “learners have capabilities in critical thinking, analyzing, having thoughtfulness, being creative, being meditated and having visions” and Standard 9 “teachers who lack capabilities in learning management have to focus on child center (Office of Nation Education Standards and Quality Assessment (Public Organization, 2008). The results of learning and teaching assessment of Secondary Education Service Area Office, Maha Sarakham found that learners had the skill of solving problem and thoughtfulness 40% which shown that thinking skill is significant for developing learners to have systematic thinking skills (Secondary Education Service Area Office, Maha Sarakham, 2020).

As mentioned above, the researchers have realized that developing the teacher development program in Thai learning management to enhance students' critical thinking to support teachers to have ways and process of students' development effectively.

2. Purposes of the Study

- 1) To develop the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham
- 2) To assess the potential and effectiveness of the teacher development program in teaching Thai language under the Secondary Education Service Area Office, Maha Sarakham

3. Research Methodology

Phase 1: Creation the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

1. The information obtained from the study and the results of the necessary needs assessment was used as questions for the interviews with school administrators that had practical methods of the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

2. Drafting and reviewing teacher competency programs in developing teachers' Creation and development of teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham by conducting a focus group discussion, evaluating the program and the program for evaluating the manual.

3. Informant group

- 3.1 The group of informants in the interview were educational institute administrators who had the best practices for teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham, obtained by purposive selection (Purposive Sampling): 1) The directors who were under the Secondary Education Service Area Office Maha sarakham Center, 2) the directors of Supervision Institute 1, and 3) the director of Research Unit Professional Learning Community Networks new academic.



3.2 The group of informants conducted a focus group discussion on drafting and reviewing the draft model by 5 experts, evaluating the program and its manual obtained by purposive sampling based on specified qualification criteria.

4. Researching Tools

4.1 The best practices interview form for developing teachers' teacher Creation and development of teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham with outstanding practices (Best Practices) was semi-structured (Semi-Structured Interview).

4.2 Program evaluation forms and manuals for teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham which using 5 levels (Rating Scale) with a consistency index between .80 - 1.00.

5. Data analysis

5.1 The information obtained from the interviews were compiled, organized, and summarized by content analysis.

5.2 Analyze the data of the model evaluation form and the manual of the model, including the mean (Mean) and the standard deviation (Standard Deviation).

Phase 2: Study of the results of the use of teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

1. A study of the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham in phase 2 to conduct the program trial with a sample group of teachers in teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham which assessed behaviors and satisfaction towards the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

2. The sample groups were 30 people from the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

3. Researching Tools

3.1 Manual Program consists of 6 Modules: 1) Module 1 Setting learning objectives 2) Module 2 Determining learners' readiness 3) Module 3 Defining content 4) Module 4 Organizing learning activities 5) Module 5 Assessment and 6) Module 6 Feedback.

3.2 Behavior evaluation form from the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham which included 5 levels (Rating Scale), Cronbach's Alpha Coefficient, equal to .97.

3.3 A questionnaire on the satisfaction of teachers in Logistics management toward the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham which included 5 levels (Rating Scale), Cronbach's Alpha Coefficient, equal to .95.

6. Data analysis

4.1 Analyze the behavioral assessment on the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham. The basic statistics used were frequency (Frequency), percentage (Percentile), mean (Mean), and standard deviation (Standard Deviation) t-test.

4.2 Analyze the satisfaction questionnaire data of teachers in the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham. The basic statistics were frequency (Frequency), percentage (Percentile), mean (Mean), and standard deviation (Standard Deviation).

4.3 Analyze the efficiency (E1/E2) that is effective according to the specified criteria 80/80. (Chaiyong Brahmawong, 2013). The efficiency of the learning module was searched for using E_1/E_2 Formula as follows:

$$E_1 = \frac{\sum X / N}{\sum A / N} \times 100$$

$$E_2 = \frac{A}{B} \times 100$$

-Analyze the effectiveness index (E.I). (Chaiyong Brahmawong, (2013) as follows:

-Effectiveness Index (E.I.) = The sum of the post-test score – the sum of the pre-test score

$$\frac{\text{The sum of the post-test score} - \text{The sum of the pre-test score}}{\text{Student Number X Full Score}} - \text{The sum of the pre-test score}$$

-Satisfaction was analyzed using statistics, percentage, mean, and standard deviation with the measure of satisfaction level. According to the principle of Likert (Boonchom Srisa-ard, 2011)

7. Research Instruments

1. The interview of the model education institutes on learning management was the report studying on working progress of the institutes;

1.1 Studying documents, theories about learning management which supporting teachers' learning in Thai language management to have critical thinking and this interview brought to interview the institutes to be best practices.

1.2 Presenting the interview to the advisors to correct the content and editing the interview.

1.3 Using the interview with the model schools which supporting teachers' learning in Thai language management to have critical thinking under the Secondary Education Service Area Office, Maha Sarakham.

2. The Manual program of the teacher development program in Thai learning management in order to enhance students' critical thinking under the Secondary Education Service Area Office, Maha Sarakham

2.1 Studying the document, and theories which were from criticizing the components and traits, and teachers' learning management to have critical thinking which could comprise of the program principals, objectives, contents and development methods, and assessment.

2.2 Asking the advices from the advisors after improving the manual and the program.

2.3 Asking 9 experts to evaluate the manual and program to find the appropriate, the possibilities, and the advantages through the connoisseurship after editing the manual and program.

2.4 Editing and improving the program and the manual after gaining the advices from 9 experts.

3. The program assessment form on supporting teachers' learning in Thai language management to have critical thinking

3.1 Studying documents, theories about Thai learning management which supporting critical thinking

3.2 Creating the assessment

3.3 Asking the advices from the advisors after getting the assessment to correct the content

3.4 Asking 5 experts to recheck the content again by using IOC techniques which began with 0.50 and inserted the related assessment value at 1.00 (Srisa-ad, 2017).

3.5 Editing the assessment after getting the advices from the experts.

4. Learning Achievement Test on Thai learning management to enhance critical thinking;

4.1 Studying documents, theories about Thai learning management which supporting critical thinking to have 30 items, and 4 multiple choices test.

4.2 Asking 5 experts to check the content again by using IOC techniques which began with 0.50 and inserted the related assessment value at 1.00 (Srisa-ad, 2017).

4.3 Improving the test and using with the sample group who were not the participants.

4.4 Using the test with the participants

5. The assessment on the satisfaction

5.1 Studying documents, theories about the satisfaction



- 5.2 Creating the assessment after getting the data
- 5.3 Asking the advices from the advisors after getting the satisfaction assessment to correct the content
- 5.4 Asking 5 experts to check the content again by using IOC techniques which began with 0.50 and inserted the related assessment value at 1.00 (Srisa-ad, 2017).
- 5.5 Improving the satisfaction assessment and printed out
6. Evaluating the appropriate, possibilities, benefits of the program
7. The Discussion Record; used to study the components and traits of Thai learning management which supporting critical thinking

8. Results

The results found that

1. The results of creating and developing a the teacher enhancing building program in program was teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham.

1.1 The results of creating and developing a program to enhance teacher in program was teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking under the Secondary Education Service Area Office Mahasarakham.

1.1.1 Enhancing of the management teacher competency building program in the teacher enhancing building program in program was teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham consist of 1) principles, 2) objectives, 3) contents, 4) development methods, and 5) program evaluations.

1.1.2 The contents of teacher enhancement development activities in the teacher enhancing building program in program was teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham consist of 6 Modules: 1) Module 1 Setting learning objectives 2) Module 2 Determining learners' readiness 3) Module 3 Defining content 4) Module 4 Organizing learning activities 5) Module 5 Assessment and 6) Module 6 Feedback. Synthesis, and Research for teacher Development.

2.2 The evaluation of teacher enhancement building programs 1) Module 1 Setting learning objectives 2) Module 2 Determining learners' readiness 3) Module 3 Defining content 4) Module 4 Organizing learning activities 5) Module 5 Assessment and 6) Module 6 Feedback by experts. Found that, in general, it was appropriate at a high level has a possibility at the highest level, and is useful at the highest level.

2.3 The manual for Implementing the teacher enhancement building program in teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham experts found that the overall picture was appropriate at the highest level.

3. The results of a study on the use of teacher enhancement building programs in teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham are as follows in table 1-2 :

3.1 The results of using the teacher enhancement building program in teacher Creation and development of teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Secondary Education Service Area Office Mahasarakham. It was found that 1) knowledge, enhancement, and the efficiency of the practice process/efficiency of the results were average percentages of 91.27 / 88.00, which was higher than the 80/80 criterion set. and 2) the efficacy index after the development had higher knowledge than before, equal to 0.7567, with an increase in knowledge, representing 75.67%.



Table 1: The Effectiveness and the Efficiency of the Teacher Development Program in Thai Learning Management to Enhance Students' Critical Thinking Under the Education Service Area Office, Mahasarakham

| Participants | The Score after 2 Years teaching (60) | Pretest (60) | Scores from Each Assessment | | | | | | Total 60) | Posstest (60) |
|--------------|---------------------------------------|--------------|------------------------------|---|--------------|--------------------------|-----------------|---------------|---------------|---------------|
| | | | Objectives of the Study (40) | Considering Learners' Preparations (20) | Content (20) | Learning Management (20) | Assessment (20) | Feedback (40) | | |
| 1 | 58 | 40 | 38 | 18 | 18 | 18 | 18 | 38 | 148 | 49 |
| 2 | 58 | 38 | 38 | 18 | 18 | 18 | 18 | 39 | 149 | 56 |
| 3 | 58 | 41 | 37 | 18 | 18 | 17 | 17 | 38 | 145 | 52 |
| 4 | 53 | 39 | 37 | 18 | 17 | 18 | 18 | 38 | 146 | 54 |
| 5 | 57 | 34 | 37 | 18 | 18 | 18 | 18 | 37 | 146 | 50 |
| 6 | 58 | 30 | 37 | 18 | 18 | 18 | 18 | 38 | 147 | 50 |
| 7 | 59 | 34 | 37 | 18 | 18 | 18 | 18 | 38 | 147 | 52 |
| 8 | 58 | 28 | 37 | 18 | 17 | 18 | 17 | 38 | 145 | 50 |
| 9 | 60 | 28 | 37 | 18 | 17 | 17 | 18 | 38 | 145 | 51 |
| 10 | 60 | 26 | 38 | 17 | 18 | 18 | 17 | 38 | 146 | 50 |
| 11 | 58 | 27 | 38 | 18 | 18 | 18 | 17 | 38 | 147 | 48 |
| 12 | 58 | 29 | 38 | 17 | 17 | 18 | 18 | 37 | 145 | 47 |
| 13 | 58 | 52 | 37 | 18 | 18 | 18 | 18 | 38 | 147 | 50 |
| 14 | 57 | 26 | 36 | 16 | 17 | 17 | 16 | 38 | 140 | 54 |
| 15 | 56 | 39 | 37 | 17 | 18 | 18 | 17 | 37 | 144 | 56 |
| 16 | 58 | 30 | 38 | 18 | 19 | 17 | 18 | 37 | 147 | 56 |
| 17 | 59 | 45 | 37 | 18 | 18 | 18 | 18 | 38 | 147 | 57 |
| 18 | 59 | 38 | 38 | 17 | 17 | 19 | 17 | 38 | 146 | 54 |
| 19 | 58 | 44 | 36 | 17 | 18 | 18 | 19 | 37 | 145 | 58 |
| 20 | 60 | 32 | 38 | 17 | 17 | 17 | 18 | 37 | 144 | 52 |
| 21 | 58 | 40 | 36 | 18 | 18 | 18 | 19 | 36 | 145 | 54 |
| 22 | 57 | 40 | 37 | 18 | 17 | 17 | 19 | 37 | 145 | 55 |
| 23 | 57 | 33 | 38 | 18 | 17 | 19 | 18 | 38 | 148 | 54 |
| 24 | 58 | 38 | 37 | 18 | 18 | 17 | 17 | 37 | 144 | 56 |
| 25 | 56 | 39 | 38 | 18 | 18 | 18 | 18 | 38 | 148 | 53 |
| 26 | 54 | 40 | 38 | 18 | 17 | 19 | 17 | 38 | 147 | 56 |
| 27 | 57 | 42 | 38 | 19 | 18 | 17 | 16 | 38 | 146 | 55 |
| 28 | 56 | 39 | 37 | 18 | 17 | 18 | 16 | 38 | 144 | 57 |
| 29 | 59 | 43 | 38 | 18 | 19 | 19 | 17 | 38 | 149 | 55 |
| 30 | 58 | 42 | 38 | 18 | 19 | 18 | 18 | 38 | 149 | 57 |
| Total | 1730 | 1096 | 1121 | 533 | 532 | 536 | 528 | 1131 | 4,381 | 1598 |
| \bar{X} | 57.67 | 36.53 | 37.37 | 17.77 | 17.73 | 17.87 | 17.60 | 37.70 | 146.03 | 53.27 |
| S.D. | 1.56 | 6.47 | 0.67 | 0.57 | 0.64 | 0.63 | 0.81 | 0.60 | 1.90 | 3.00 |
| \bar{X} % | 96.11 | 60.89 | 93.42 | 88.83 | 88.67 | 89.33 | 88.00 | 94.25 | 91.27 | 88.78 |

From Table 1 found that the efficiency (E1) was 91.27 and the effectiveness (E2) was 88.78. Therefore, the program was efficiency and Effectiveness (E1/E2) at 91.27/88.78



Table 2: Pre and Post Development Scores on the Average, Standard Deviation, and Teachers' Capabilities

| Program | Pre-Development | | | Post-Development | | |
|--------------------------------------|-----------------|------|---------|------------------|------|---------|
| | \bar{X} | S.D. | Level | \bar{X} | S.D. | Level |
| 1. Objectives | 3.24 | 0.40 | Average | 4.67 | 0.49 | Highest |
| 2. Considering Learners' Preparation | 3.00 | 0.66 | Average | 4.65 | 0.42 | Highest |
| 3. การกำหนดเนื้อหา | 3.26 | 0.52 | Average | 4.66 | 0.49 | Highest |
| 4. Learning Management | 3.04 | 0.65 | Average | 4.66 | 0.46 | Highest |
| 5. Assessment | 2.92 | 0.61 | Average | 4.80 | 0.37 | Highest |
| 6. Feedback | 2.94 | 0.59 | Average | 4.80 | 0.38 | Highest |
| รวม | 3.07 | 0.57 | Average | 4.71 | 0.44 | Highest |

From Table 2, the pre-development score of the teacher were average but the scores from the post-development were highest.

9. Discussions

1.The efficiency (E1) was 91.27 and the effectiveness (E2) was 88.78. Therefore, the program was efficiency and Effectiveness (E1/E2) at 91.27/88.78 which meant it followed the standard 80/80. This caused from (1.1) the researchers studies the curriculum, documents, and related theories on creating the module which were corrected, edited, improved by the advisor, the experts which related to Chantarasombat et al, studied "Development of Teaching Competencies: Innovative project for Achieving the Education Institutes in the Northeast of Isan, Office of the Basic Education Commission (OBEC)" found that the learning module for teachers was in highest level. When considering in each part found that the suitable part, connection part, possibility part and advantages were in the highest level, and the set of learning was efficiency and effectiveness at 90.70/84.58 which higher than the standard (Chantarasombat et al, 2018). Related to Roland who developed the leaning module for enhancing and preparing students' tidiness. This module was developed from the need of Mississippi to help students' tidiness. The results shown that the learning module was potential because it could support students' knoweldege and be tidy. Consequently, "Learning Management of the Learning Innovation in the Contemporary World (AD66301) by using Learning Module" was appropriate for teachers to use in class by adapting principals, theories suitably. This could affect to have the effective learning management; students could be developed.

2.The post-development score of participants was higher significantly at .05 because (2.1) there were learning activities which focusing on child center. Learning activities could develop students' skills. Therefore, learning activities could be created to help students' practices. Teachers should offer students' practice in order to let them direct experiences and they would have enough skills and they will learn faster. They can practice self-learning through critical thinking, systematically. Related to Techakup (2011: p. 7) mentioned that child center was the learning management that focusing on creating new knowledge and new revolution through critical thinking, and group discussion which emphasizing on learners' relation and learning participation. They could use the knowledge, adapted for their daily life. Moreover, Rangabtuk (2004, p. 6) stated that teachers should be the people who design appropriate leaning activities in order to enhance students' quality. Choosing the appropriate learning activities must have the basic knowledge about the learning management and could define the objectives of learning in order to guide students follow the correct directions and to motivate learning interest.

10.Suggestions

1.Learning through the teacher development program in Thai learning management in order to enhance students' critical thinking for Mattayom Suksa Schools, students have to be prepared well.

2.Learning through the teacher development program in Thai learning management in order to enhance students' critical thinking for Mattayom Suksa Schools, time and places can be flexible.

3.There should have the research about the Module of learning to support critical thinking in 21st century and education leaders.



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