# Developing a model of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area

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## Abstract

This research aimed 1) to identify network components, the network management process, and success factors; 2) to investigate the conditions, problems, and success factors, and 3) to develop a model and a manual for implementing model. Instruments used were a synthesized record form, a confirmative form, a five-rating scale questionnaire, and a verified form. Data were analyzed by frequency, mean, standard deviation, summarizing, synthesizing, and content analysis. Results of the research were as follows: 1) synthesized results consisted of important network components, the network management process, and success factors; 2) results of investigating the conditions, problems, and success factors found that the total average of the important network components, and the network management process in terms of conditions were at a low level, the problems were at a high level; and total average of success factors of a collaborative network in terms of the conditions were also at a high level; and 3) results of a draft model consisted of six components verifying the correction and the suitability at 97.51 and 95.97 percent; the draft manual for implementing model consisted of seven components verifying the correction and the suitability at 93.01 and 92.71 percent.

**Keywords:** Model of a collaborative network, learning management efficiency, Chiang Mai Primary Educational Service Area

## 1. Introduction

According to Daniel *et al.* [1] who revealed that since 2011, the collaboration and networking had recently come to the fore as major school improvement strategies in a number of countries. A variety of initiatives, from government and other agencies, had encouraged collaboration and led to a lot of practical activity in this area.

In line with the Office of the Education Council (ONEC) [2] proposed a collaborative network management model as a suitable management for basic educational institutions leading to assist and support one another for improving the educational quality.

However, Paul [3] stated that the challenges to inter-school collaboration that it was concluded that the most findings concerning the barriers from the start were the effectiveness and sustainability of inter-school collaboration, imbalances among schools; extra workload related to the collaborative activity and challenges in setting up sharing objectives and common goals.

Later, Office of the Basic Education Commission (OBEC), Ministry of Education recognized the importance of educational management focusing on the development and improvement educational quality including promoting and supporting all levels of learning exchange stages. Therefore, network groups for promoting educational efficiencies were established as follows: 1) kindergarten, 2) primary, and 3) lower and higher secondary, including educational quality centers to be a mechanism for driving the educational quality for the development of learning areas and determined the strategic of educational development (as cited in Yongyouth and Choocheep) [4].

This led to the National Scheme of Education B.E. 2560-2579 (2017-2036) which had determined the improvement, solving problems, and developing human resource management system involving administrators, teachers, and education personnel which would result for the educational agencies and institutions to be able to manage and provided education that showed responsibility for quality standards for learners more effectively and efficiently including promoting collaborative networks in improving the educational quality (Office of the Education Council: ONEC) [5]

Due to the failure of continuous educational man-

agement, the researcher as a school administrator realized that it would be necessary to build a collaborative network for promoting learning management efficiency for development and improvement educational quality including the promotion and support of learning exchange stages for schools under Chiang Mai Primary Educational Service Area. After this, it would be crucial to develop a model for the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area in order to develop learning and teaching activities to achieve the educational policy.

## 2. Research Questions

2.1 What are the network components, the network management process, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area?

2.2 What are the conditions, problems, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area?

2.3 What would be a draft model and manual for implementing model of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area?

## 3. Research Objectives

3.1 To identify the network components, the network management process, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area.

3.2 To investigate the conditions, problems, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area.

3.3 To develop a draft model and manual for implementing a model of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area.

## 4. Materials and Methods

The research process was divided into three phases as follows:

**Phase 1:** Identify the network components, the network management process, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. This phrase was divided into two steps:

**Step 1.1:** Synthesize the network components, the network management process, and success factors by studying principles, concepts, theories, and related

research. Instrument used was a synthesized form and data were analyzed by classifying.

**Step 1.2:** Verify and confirm the network components, the network management process, and success factors by twelve experts who were selected by purposive sampling participating in a focus group discussion. Instrument used was a record form, and data were analyzed by using frequency.

**Phase 2:** Investigate conditions, problems, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. Instrument used was a five-rating scale questionnaire investigating conditions, problems, and operational results, and success factors of collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. Data were analyzed by mean and standard deviation.

**Phase 3:** Develop a model and a manual for implementing model of the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. This phase was divided into two steps as follows:

**Step 3.1:** Draft the model and manual for implementing a model of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. The researcher analyzed the obtained data from Phase 1, and Phase 2 in order to draft the model and manual for implementing a model of the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area. Key informants consisted of twenty-one experts who participated in a workshop to determine the model components. Instruments used were issues from the obtained data from phase 1, and phase 2. Data were analyzed by content analysis.

**Step 3.2:** Verify the draft model and a draft manual for implementing model of the collaborative network. Eleven experts were selected by purposive sampling participating in connoisseurship to verify and evaluate the draft model and a draft manual for implementing model. Instruments used for verifying the correction and the suitability of the model and manual for implementing model of the collaborative network were a checklist form and open-ended questions to fill in each model component. Data were analyzed by frequency and summarizing the content. The research framework was as shown in Figure 1.

## 5. Results and Discussion

**Phase 1:** Results of identifying network components, the network management process, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area were divided into two steps:
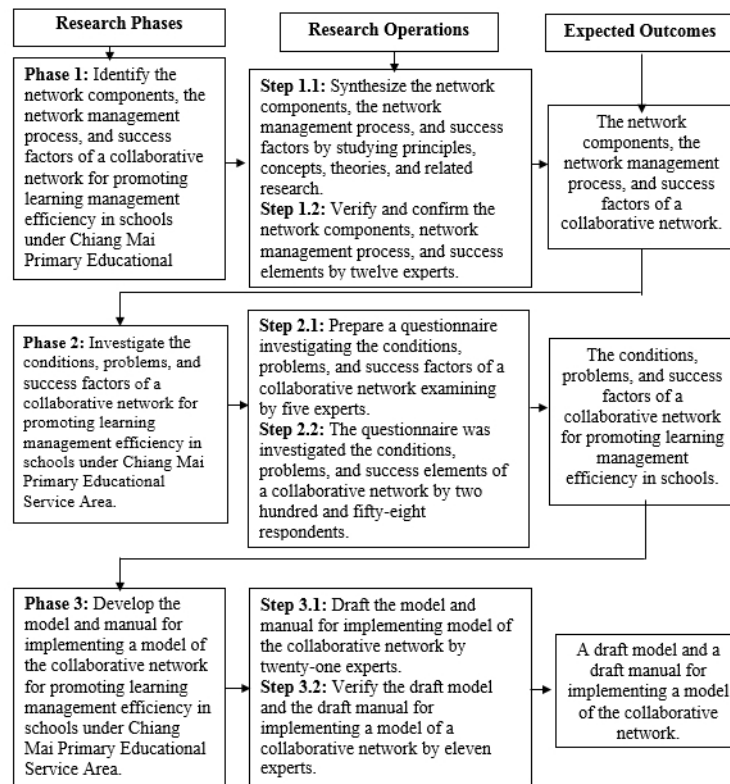
**Figure 1**: Research framework.

**Step 1.1:** Results of synthesizing the network components, the network management process, and success factors consisted of:

The important components of a collaborative network comprised of three components as follows: 1) the network purposes consisted of a network philosophy, a shared vision of the network, and network objectives; 2) the network committee consisted of a network advisory committee and a network management committee; and 3) a collaborative mission.

The network management process comprised of six steps as follows: 1) a shared thinking step, 2) a shared planning step, 3) a shared operations step, 4) a shared supervision and follow-up step, 5) an evaluation step, and 6) a success appreciation step.

Success factors of a collaborative network comprised of four elements as follows: 1) man, 2) materials, 3) money, and 4) management.

**Step 1.2:** Results of verifying and confirming the important network components, the network management process, and success factors consisted of:

The important components of a collaborative network comprised of three components as follows: 1) the network purposes consisted of 1.1) a network philosophy (4 sub-components), 1.2) a shared vision of the network (4 sub-components), and 1.3) network objectives (3 sub-components); 2) the network committee consisted of 2.1) a network advisory committee (1 sub-component), and 2.2) a network management committee (5 sub-components); and 3) a collaborative

mission (4 sub-components).

The network management process comprised of six steps as follows: 1) a shared thinking step (4 sub-steps), 2) a shared planning step (5 sub-steps), 3) a shared operations step (7 sub-steps), 4) a shared supervision and follow-up step (5 sub-steps), 5) an evaluation step (5 sub-steps), and 6) a success appreciation step (5 sub-steps).
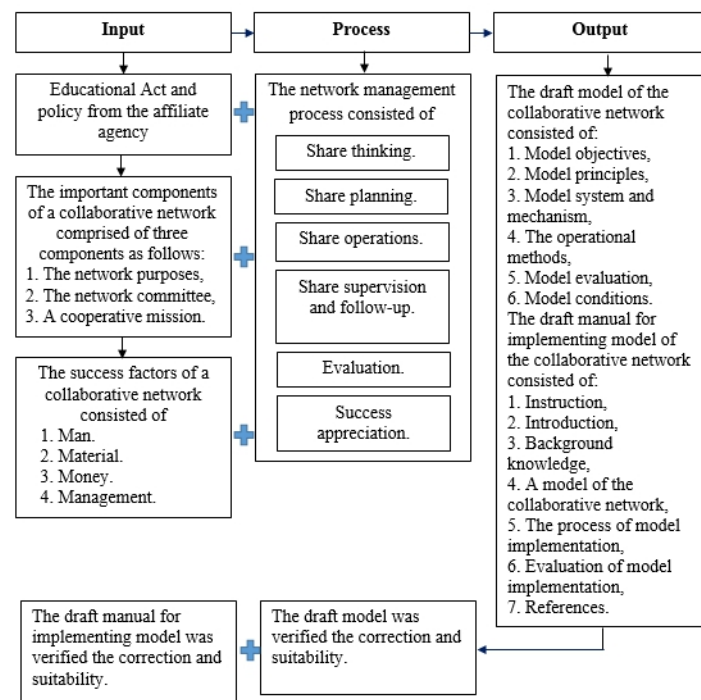
The success factors of a collaborative network comprised of four elements as follows: 1) man (8 sub-elements), 2) material (5 sub-elements), 3) money (5 sub-elements), and 4) management (8 sub-elements).

It was similar to Martin [6] who laid out four key action steps to developing a successful network: 1) organize people around a shared vision and purpose; 2) design an organizational structure that will pave the road to success; 3) cultivate a culture of engagement and shared responsibility; and 4) continuously develop the network's capacity, capability, and purpose.

**Phase 2:** Results of investigating the conditions, problems, and success factors of a collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area found that the total average of the important network components in terms of the conditions were at a low level (Mean = 2.46, S.D. = 0.80), the problems were at a high level (Mean = 4.03, S.D. = 0.58); total average of the network management process in terms of the conditions were at a low level (Mean = 2.46, S.D. = 0.82), the problems were at a high level

**Table 1.** Mean and standard deviation levels of the important network components were classified by each aspect.

| Network components | The conditions | | | The problems | | |
|---|---|---|---|---|---|---|
| | **Mean** | **S.D.** | **Interpret** | **Mean** | **S.D.** | **Interpret** |
| 1. Network purposes | | | | | | |
|   1.1 Network philosophy. | 2.54 | 0.72 | Moderate | 3.93 | 0.55 | High |
|   1.2 Shared vision of the network. | 2.45 | 0.86 | Low | 3.98 | 0.64 | High |
|   1.3 Network objectives. | 2.50 | 0.95 | Low | 4.25 | 0.67 | High |
| **Total average of network purposes.** | **2.50** | **0.79** | **Low** | **4.06** | **0.52** | **High** |
| 2. Network committee | | | | | | |
|   2.1 Network advisory committee. | 2.27 | 1.11 | Low | 3.96 | 1.01 | High |
|   2.2 Network management committee. | 2.40 | 0.76 | Low | 3.82 | 0.60 | High |
| **Total of network committee.** | **2.33** | **0.89** | **Low** | **3.89** | **0.71** | **High** |
| 3. A collaborative mission | 2.56 | 0.85 | Moderate | 4.14 | 0.79 | High |
| **Total average of the important network components.** | **2.46** | **0.80** | **Low** | **4.03** | **0.58** | **High** |



**Figure 2**: The draft model of the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area.

(Mean = 3.96, S.D. = 0.62); and total average of success factors of a collaborative network in terms of the conditions were at a high level (Mean = 3.98, S.D. = 0.59); the details were shown in Table 1, Table 2, and Table 3.

Similarly, Chirapat *et al.* [7] studied an administrative network model for academic collaboration of schools in remote highlander areas. The research found that the network committee consisted of the committee of primary office service area and the role of the committee of primary office service area, the committee of network and the role of the committee of network.

It was quite different from Jane [8], who mentioned four network principles for collaboration success involving the Energy Foundation case that illustrated the four network principles, other successful networks that they had studied in microfinance, international development, environmental conservation, and human services exhibit these principles as well.

Similarly, Wannapan [9] studied success factors and problems in the project management at Mahidol University International College. It was found that the elements contributing to successful project management in the personnel aspect included the network of the executives or superiors, the ability of the project manager or the main project operator to comprehensively study and understand the contents of the project well, and the collaboration of internal and external staffs as a good team. The most significant success factor was careful management of the budget.

**Phase 3:** Results of developing the model and manual for implementing model of the collaborative network for promoting learning management efficiency

**Table 2.** Mean and standard deviation levels of the network management process were classified by each aspect.

| The network management process | The conditions | | | The problems | | |
|---|---|---|---|---|---|---|
| | Mean | S.D. | Interpret | Mean | S.D. | Interpret |
| 1. A shared thinking step. | 2.50 | 0.94 | Low | 4.00 | 0.66 | High |
| 2. A shared planning step. | 2.47 | 0.92 | Low | 4.05 | 0.74 | High |
| 3. A shared operations step. | 2.47 | 0.84 | Low | 4.01 | 0.60 | High |
| 4. A shared supervision and follow-up step. | 2.46 | 0.86 | Low | 4.03 | 0.77 | High |
| 5. An evaluation step. | 2.42 | 0.86 | Low | 3.79 | 0.68 | High |
| 6. A success appreciation step. | 2.44 | 0.79 | Low | 3.86 | 0.70 | High |
| **Total average of the the network management process.** | **2.46** | **0.82** | **Low** | **3.96** | **0.62** | **High** |

**Table 3.** Mean and standard deviation levels of success factors of a collaborative network were classified by each aspect.

| Success factors | The conditions | | |
|---|---|---|---|
| | Mean | S.D. | Interpret |
| 1. Man. | 4.17 | 0.64 | High |
| 2. Material. | 3.80 | 0.79 | High |
| 3. Money. | 3.67 | 0.79 | High |
| 4. Management. | 4.30 | 0.68 | High |
| **Total average of success factors.** | **3.98** | **0.59** | **High** |

in schools under Chiang Mai Primary Educational Service Area were divided into two steps as follows:

**Step 3.1:** The draft model of the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area consisted of six components as follows; 1) the model objectives, 2) the model principles, 3) the model system and mechanism, 4) the operational methods, 5) the model evaluation, and 6) the model condition. The draft manual for implementing a model consisted of seven components as follows: 1) instruction, 2) introduction, 3) background knowledge, 4) a model of the collaborative network, 5) the process of model implementation, 6) evaluation of model implementation, and 7) references.

**Step 3.2:** Results of verifying the draft model in terms of correction and the suitability were at 97.51 and 95.97 percent. The draft manual for implementing model in terms of correction and the suitability were at 93.01 and 92.71 percent. The details are shown in Table 4.

Similarly, Namfon [10] studied the development of a collaborative network model enhancing basic education quality: In the case of Phayao model, the research found that: there were 4 components 1) the principle of the collaborative network, 2) the objective of collaborative network, 3) the role of committee of a collaborative network, 4) the operational process of a collaborative network. Besides, the research found that the suitable model as well as enhancing the quality of basic education was rated at a high level of feasibility and at the highest level all of utility.

Moreover, Noppapadon *et al.* [11] studied a proposed model for school network management of the Primary Educational Service Area Office. The results showed that the features and style elements consisted of six components. 1) The purpose of the school network which is detailed in five parts, 2) the structure of the school network which was detailed in ten parts, 3) the role of the school network which is detailed in twelve parts, 4) a board of school network committees which is detailed in twelve parts, 5) the administration of the school network which is detailed in nine parts, and 6) the mobilization of resources which is detailed in nine parts. The results showed that the school network administration of primary educational of area office was appropriate and feasible on a large scale.

In addition, Phubet and Choocheep [12] who studied a model of work-integrated learning to prepare educational administrators for Thailand, the model consisted of 8 components: principles, objectives, system, operational methods, conditions for achievements, definitions and description, evaluation and measurement, and manual of model implementation.

## 6. Conclusion

Based on drafting the model and manual of model implementation of a collaborative network, the author described the responsibilities of the collaborative network as a key factor in increasing the educational quality in accordance with the National Scheme of Education B.E. 2560-2579 (2017-2036) and determined that the improvement, problem solving, and development a human resource management system involving administrators, teachers, and education personnel more effectively and efficiently including promoting a collaborative network in improving the educational quality. Therefore, it is also necessarily to build a collaborative network for all levels of education.

## 7. Recommendations

Research recommendations as follows:

7.1 The collaborative network can be applied as a factor for all levels of education. The result has suggested that the educational administrators and school

**Table 4.** The verifying results of core components of the draft model and the draft manual for implementing a model of the collaborative network for promoting learning management efficiency in schools under Chiang Mai Primary Educational Service Area.

| Core components of a collaborative network model | The verifying results | | | |
|---|---|---|---|---|
| | Correction | | Suitability | |
| | Frequency | Percentage | Frequency | Percentage |
| 1. Principles | 10.75 | 97.73 | 10.00 | 90.91 |
| 2. Objectives | 10.00 | 90.91 | 10.00 | 90.91 |
| 3. Model system and mechanism | 10.89 | 98.96 | 10.74 | 97.66 |
| 4. Operational procedures | 10.92 | 99.30 | 10.92 | 99.30 |
| 5. Model evaluation | 10.80 | 98.18 | 10.80 | 98.18 |
| 6. Model conditions of achievement | 11.00 | 100.00 | 10.88 | 98.86 |
| **Total average** | 97.51 | | 95.97 | |
| **A draft manual** | | | | |
| 1. Instruction | 11.00 | 100.00 | 11.00 | 100.00 |
| 2. Introduction | 10.25 | 93.18 | 9.75 | 88.64 |
| 3. Background knowledge | 10.00 | 90.91 | 10.00 | 90.91 |
| 4. A model of the collaborative network | 10.36 | 94.22 | 10.64 | 96.69 |
| 5. The process of model implementation | 10.00 | 90.91 | 11.00 | 100.00 |
| 6. Evaluation of model implementation | 10.00 | 90.91 | 10.00 | 90.91 |
| 7. References | 10.00 | 90.91 | 9.00 | 81.82 |
| **Total average** | 93.01 | | 92.71 | |

administrators who are responsible for Thai education, should share vision and mission according to collaborative network objectives to support quality education centers.

7.2 The responsible network committee, both the advisory committee and the management committee should take action for driving the educational management to brain-storm for recent problem solutions and mobilize learning resources.

7.3 All relevant sectors/agencies should inform to build the collaborative network as the determined policy and provide the meetings and seminars to monitor the policy implementation.

## 8. Recommendation for Further Research

8.1 There should be a study on collaborative networks for promoting learning management efficiency within qualitative (like best practice) and quantitative (like comparative in each area) design.

8.2 There should be a study on collaborative networks for promoting learning management efficiency in terms of 21th century network and digital globalization.

## Acknowledgment

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