

CHAPTER 3

Research Methodology

The researcher operated the study on the development of the model of supervision, monitoring, and evaluation research capabilities to develop instruction of student teachers as follows:

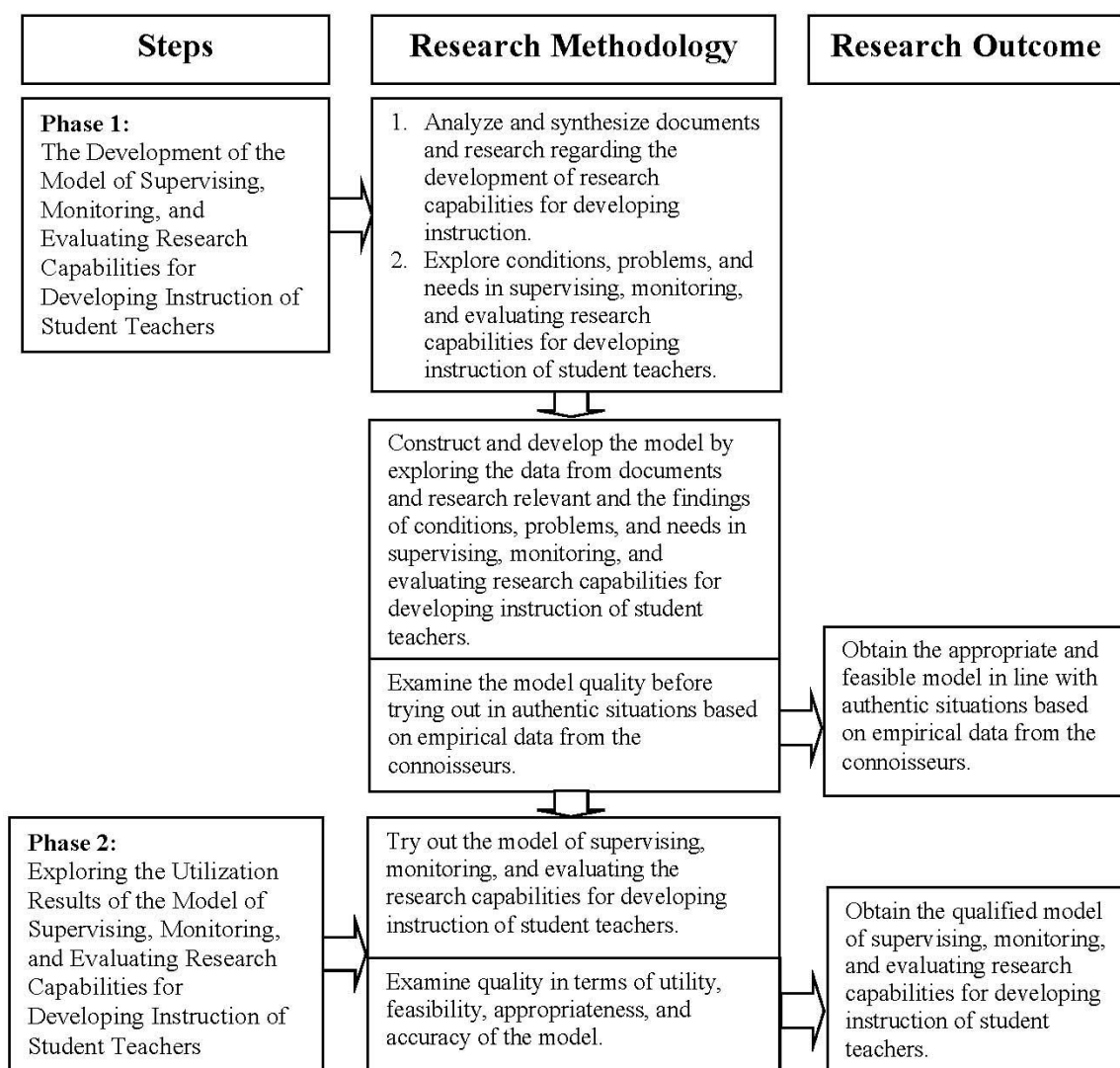


Figure 3.1 The Overall Frame of Research Operational Steps

Phase 1: The Development of the Model of Supervising, Monitoring, and Evaluating Research Capabilities for Developing Instruction of Student Teachers

The development of the model of supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers was conducted by (1) exploring conditions, problems, and needs in supervising, monitoring, and evaluating research capability for developing instruction of student teachers, and (2) constructing and identifying the quality of the model of supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers. The details were shown as follows:

Research Methodology

(1) Exploring Conditions, Problems, and Needs in Supervising, Monitoring, and Evaluating Research Capabilities for Developing Instruction of Student Teachers

Population and Sample Groups

The population consisted of the followings:

(1) 1,985 university supervisors who were the instructors in 40 Rajabhat Universities were employed. They were appointed by the universities to have duties in helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic Year 2011.

(2) 7,846 mentor teachers who were the teachers in the teacher professional development network schools if 40 Rajabhat Universities were employed. Their duties included helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic Year 2011.

(3) 8,874 student teachers who were students in 40 Rajabhat Universities performed the full teacher professional internship in Academic Year 2011.

The sample group consisted of the followings:

(1) The university supervisors who were instructors in 40 Rajabhat Universities were selected through simple random sampling and limited by using Yamane's formula at a 95-percent confidence level. The expected sample group was supposed to consist of 333 people. However, due to the additional data collection, the sample group eventually consisted of 386 people.

(2) The mentor teachers teaching in teacher professional development network schools of 40 Rajabhat Universities were selected through simple random sampling and limited by using Yamane's formula at a 95-percent confidence level. The expected sample group was supposed to consist of 381 people. However, due to the additional data collection, the sample group eventually consisted of 451 people.

(3) The student teachers studying at 40 Rajabhat Universities and attending the teacher professional internship in Academic Year 2011 were selected through simple random sampling and limited by using Yamane's formula at a 95-percent confidence level. The expected sample group was supposed to consist of 383 people. However, due to the additional data collection, the sample group eventually consisted of 439 people.

Exploring conditions, problems, and needs in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers was conducted as follows:

1.1 Explore, analyze, and synthesize documents and research relevant to the development of research capabilities in developing instruction by analyzing the content. It was found that the supervision, monitoring, and evaluation of research capabilities for developing instruction of student teachers consisted of the issues regarding principles, objectives, supervising processes, social media networks, production, and output.

1.2 Construct a set of three questionnaires on conditions, problems, and needs in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers. These were (1) a questionnaire for university supervisors, (2) a questionnaire for mentor teachers, and (3) a questionnaire for student teachers. Each questionnaire was comprised of three parts. Part 1 dealt with fundamental data; Part 2 focused on the opinions toward the conditions of supervising,

monitoring, and evaluating research capabilities for developing instruction of student teachers. The respondents had to identify whether they performed or not. Provided that the educational institutions regarded that there was no performance, they could skip to answer the following questions without identifying a performance level which consisted of five levels – highest, high, moderate, low, lowest. The questions covered principles, objectives, supervising processes, social media networks, production, and output gained from the supervision and monitoring research capabilities for developing instruction. Part 3 dealt with additional recommendations toward problems, obstacles, and needs in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers.

1.3 Take the developed questionnaire to five connoisseurs on supervising students, measuring, evaluating, researching in education, and developing supervision models for their consideration on the congruence between question items and questionnaire objectives, language usage, and question clarity. According to the analysis of the Index of Item Objective Congruence (IOC), it was found that the developed questionnaire possessed validity with the IOC value of every question item at 1.00 equally.

1.4 Examine the reliability of the questionnaire by trying out in order to identify the alpha coefficient of the entire questionnaire based on Cronbach's principle. It was found that (1) 30 university supervisors who were not included in the sample group possessed the alpha coefficient at 0.97. (2) As for 30 mentor teachers who were not included in the sample group, the alpha coefficient was 0.95. And, (3) as for 30 student teachers who were not included in the sample group, the alpha coefficient was 0.92.

1.5 Produce the complete questionnaire and employ it to gather data from the sample group.

1.6 Analyze the data gained from the questionnaire on conditions, problems, and needs in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers. The observation was found as follows:

(1) In terms of the conditions of supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers, it was found as follows:

(1.1) University supervisors and mentor teachers who never attended any training or seminar on supervising student teachers were equivalent to 31.62 percent and 47.67 percent, respectively.

(1.2) As for the principles, mentor teachers and student teachers did not have any participation in determining the principles in supervising, monitoring, and evaluating. Moreover, the university supervisors participated in determining the principles in supervising, monitoring, and evaluating at a low level.

(1.3) As for the objectives, mentor teachers and student teachers did not have any participation in determining the objectives in supervising, monitoring, and evaluating. However, the university supervisors participated in determining the objectives in supervising, monitoring, and evaluating at a moderate and highest level.

(1.4) In terms of evaluation, university supervisors, mentor teachers, and student teachers did not perform an evaluation during the operation of the research as planned.

(1.5) In terms of social media networks, university supervisor, mentor teachers, and student teachers did not employ the social media networks as a tool in supervising and monitoring.

(2) In terms of the problems in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers, it was found as follows:

(2.1) Most of the mentor teachers lacked confidence in giving advice or consultation regarding research.

(2.2) The university supervisors did not have time to supervise or monitor. Some had little time for supervising so that they could not supervise conclusively.

(2.3) The student teachers were confused due to the fact that the recommendations given by the university supervisors and the mentor teachers were different. Moreover, the supervision and monitoring of the university supervisors

mainly emphasized on evaluating the results of their internship rather than giving advice and consultation.

(3) In terms of the needs for supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers, it was found as follows:

(3.1) The channels for communicating, consulting, giving advice, and giving feedback to the student teachers immediately were needed in order to decrease the discrimination on receiving the supervision.

Data Collection

The letters asking for the cooperation in collecting data from Education Faculty, Chiang Mai University, were sent to the research sample group in order to ask for their cooperation in answering the questionnaires. The researcher sent out the letters by post with enclosed envelopes, attached stamps, and identified the researcher's address so that they could be returned by post.

Data Analysis

The data analysis was conducted as follows:

The data gained from the questionnaires were analyzed on a basis of a five-rating scale in a format of close-ended questions. Then, the data were calculated to identify Mean, standard deviation, and percentage of practical conditions toward supervision. The interpretation criteria of mean were as follows (Boonchom Srisa-ard: 2000).

The Mean of 4.51-5.00 referred to the highest level of the operation.

The Mean of 3.51-4.50 referred to the high level of the operation.

The Mean of 2.51-3.50 referred to the moderate level of the operation.

The Mean of 1.51-2.50 referred to the low level of the operation.

The Mean of 1.00-1.50 referred to the lowest level of the operation.

As for the data gained from the opened-ended questions about the problems, needs in supervising and monitoring, and the evaluation of research capabilities for developing

instruction, the researcher employed frequency distribution, content analysis, and a descriptive explanation in analyzing the data.

(2) Constructing and Identifying the Quality of the Model of Supervising, Monitoring, and Evaluating Research Capabilities for Developing Instruction of Student Teachers

2.1 Determine the model of structures and methods in supervising, monitoring, and evaluating research capabilities for developing instruction of student teachers by analyzing documents, concepts, theories relevant, including with the data about conditions, problems, and needs.

2.2 Analyze the content based on the data gained and provide a table to synthesize the content in order to determine the structure of model components as shown in the following table.



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Table 3.1 The Synthesis Results of Concepts, Theories, Principles, and Application for Determining the Developmental Model

Concepts, Theories, and Principles	The Content Employed	The Model Components
The concept of human resource development of Swanson (2001)	The human resource development was based on available resources in that they were consumed in an economical, worthwhile, and highly beneficial. Experience and reinforcement were supposed to be considered in order to motivate and persuade the learning for development.	Component 1: Directions in Developing Research Capabilities 1. Principles <ul style="list-style-type: none"> • Participation • Giving consultation • The combination of the developmental supervision and the clinical supervision 2. Objectives <ul style="list-style-type: none"> • Research capabilities of student teachers • Learning quality of students
The concept of developing to the professionalism of Clarke (1994)	The construction of participatory expression in developing by themselves voluntarily	
The concept of constructing participatory expression of Hord and others (1987)	The construction of participatory expression at every step of operation	
The concept of developing to the professionalism of Sparks and Louks-Horley (1990)	The learning would possess maximum effectiveness when there was a desire to learn, a perception of problems, and a need to solve problems by merging experience with learning.	
The theory of adult education of Knowles (2005)	Adults possessed needs and abilities in directing themselves and employing experience to learn.	

Table 3.1 (continued)

Concepts, Theories, and Principles	The Content Employed	The Model Components
<p>The results of exploring conditions, problems, and needs in supervising, monitoring, and evaluating the research capabilities for developing instruction of the student teachers</p>	<ul style="list-style-type: none"> • As for the principles, mentor teachers and student teachers did not have any participation in determining the principles in supervising, monitoring, and evaluating. Moreover, the university supervisors participated in determining the principles in supervising, monitoring, and evaluating at a low level. This led to the determination of cooperation of program university supervisors, general university supervisors, and mentor teachers in giving consultation via the combination of the developmental supervision and the clinical supervision in the model. • As for the objectives, mentor teachers and student teachers did not have any participation in determining the objectives in supervising, monitoring, and evaluating. However, the university supervisors participated in determining the objectives in supervising, monitoring, and evaluating at a moderate and highest level. This led to the determination of cooperation of program university supervisors, general university supervisors, and mentor teachers in supervising, monitoring, and evaluating the research capabilities of student teachers and learning quality of the students in the model. 	

Table 3.1 (continued)

Concepts, Theories, and Principles	The Content Employed	The Model Components
The principle of giving consultation of Ibarra (2007)	Giving consultation for those supervised both per individual and per small group in order to monitor and motivate the research for developing instruction to its success as planned in the objectives. The supervisors and those supervised coordinated in sharing their learning, analyzing, and reflecting ideas and whereabouts through social media networks in creative atmosphere.	Component 2: Processes of Research Capability Development Step 1: Readiness preparation for student teachers, program university supervisors, general university supervisors, and mentor teachers
The principle of developmental supervision of Glickman, Gordon, and Ross-Gordon (2010) and clinical supervision	Constant self-development and professional assignment development would yield its maximum efficiency provided that there were correct and appropriate assistance, recommendations, and supports which fitted each individual's capability. The focus was put on improving instructional management of the teachers in class primarily.	Step 2: Operation of teacher professional internship via giving consultation and sharing learning
The results of exploring conditions, problems, and needs in supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers	<ul style="list-style-type: none"> • Most of the mentor teachers lacked confidence in giving advice or consultation regarding research. Therefore, there was the determination of activities help to prepare readiness for the mentor teachers in order to give knowledge and understanding and construct confidence in giving advice or consultation regarding research on the model 	

Table 3.1 (continued)

Concepts, Theories, and Principles	The Content Employed	The Model Components
	<ul style="list-style-type: none"> The student teachers were confused due to the fact that the recommendations given by the university supervisors and the mentor teachers were different. Additionally, there was a lack of communication channels among university supervisors, mentor teachers, and student teachers. The university supervisors did not have time to supervise or monitor. Some had little time for supervising so that they could not supervise conclusively. As a result, there was the determination of preparing readiness for university supervisors and mentor teachers so that they could have a mutual understanding. Besides, the communication channel was added in order to give consultation and advice, share the learning, give feedback to the student teachers immediately, and decrease the discrimination of receiving the supervision via employing the Edmodo Program in the model. 	
The project evaluation of Tay Chiengchee (2006)	<p>The evaluation could be conducted in three phases which were as follows:</p> <ol style="list-style-type: none"> The evaluation before considering the research proposals The evaluation during the consideration of the operation as stated in the research plans The evaluation after completing the consideration of the research finding reports and students' learning quality 	<p>Component 3: Evaluation of research capability development</p> <ol style="list-style-type: none"> Objectives Methods and tools used to evaluate the results Evaluation criteria

Table 3.1 (continued)

Concepts, Theories, and Principles	The Content Employed	The Model Components
The results of exploring conditions, problems, and needs in supervising, monitoring, and evaluating the research capabilities for developing instruction of the student teachers	There was a lack of evaluation during the research operation. This resulted in the research operation that was in line with the determined plans. Therefore, there was the determination in the model to have the evaluation during the operation in order to monitor whether the student teachers operated as stated in the research plans or not. Program university supervisors, general university supervisors, and mentor teachers recorded the recommendations in the evaluation forms. Then, the student teachers applied them to improve their work and recorded the results of utilizing the recommendations.	

2.3 Determine the model structure based on concepts, theories, principles, and needs in three components which were (1) the directions of research capability development, (2) the processes of research capability development, and (3) the evaluation of research capability development.

2.4 Examine the quality of the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers.

Utility referred to the fact that the data gained from utilizing the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers were in line with the needs. They could respond to the needs in utilizing the information of those employing the evaluation results conclusively in due course. Moreover, they were beneficial for developing and improving the quality in supervising, monitoring, and evaluating the research capabilities for developing instruction.

Feasibility referred to the fact that the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers could be used in an authentic situation. It was time-saving, resource-saving, and convenient in using in determined time period.

Appropriateness referred to the fact that the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers was appropriate and in line with principles and methods. It could respond to the development of the research capabilities for developing instruction of the student teachers. It was fair, transparent, and accountable.

Accuracy referred to the fact that the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers contained systematic steps in the operation. It was in line with the principles of the supervision, monitoring, and evaluation of the research capabilities for developing instruction of student teachers correctly and the authentic situations.

2.5 Apply the four operational definitions to construct question items to evaluate the model quality. It was in a format of a five-rating scale covering four qualitative variables which were five items on utility, four items on feasibility, four items on appropriateness, and four items for accuracy. There were 17 items in total. There were also open-ended questions asking about opinions and additional recommendations toward each quality aspect and the model quality in an overall picture.

2.6 Take the developed evaluation form of the model to five connoisseurs on supervising students, measuring, evaluating, researching in education, and developing supervision models for their consideration on the congruence between question items and questionnaire objectives, language usage, and question clarity. According to the analysis of the Index of Item Objective Congruence (IOC), it was found that the developed questionnaire possessed validity with the IOC value of every question item at 1.00 equally.

2.7 Produce the completed evaluation form of the model and the draft of the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. After that, take the evaluation form of the model to gather data from nine connoisseurs who possessed expertise and experience in the program of curriculum and teaching, student supervision, measurement, evaluation, research in education, and supervision model development.

2.8 Analyze the data gained from the evaluation form of the model. The connoisseurs gave their recommendations as follows. (1) The details of the components were supposed to be added into the model draft. These were supposed to reflect the operation expressing the procedural relationship and the activities held by program university supervisors, general university supervisors, and mentor teachers on supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. And, (2) the manual of model utilization was supposed to be provided on a basis of the steps in developing the research capabilities for developing instruction of student teachers.

2.9 The researcher adjusted the model based on the recommendations and provided the complete model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers in order to be used to develop the student teachers.

Data Collection

The letters asking for the cooperation in collecting data from Education Faculty, Chiang Mai University, were sent to the research sample group in order to ask for their cooperation in answering the evaluation form toward the model quality. The researcher sent out the letters in two methods which were (1) sending by post with enclosed envelopes, attached stamps, and identified the researcher's address so that they could be returned by post, and (2) sending in person to the connoisseurs and taking back by the researcher.

Data Analysis

The data analysis was conducted as follows:

The data gained from the quality evaluation of the model were analyzed on a basis of a five-rating scale in a format of close-ended questions. Then, the data were calculated to identify Mean and standard deviation. The interpretation criteria of mean were as follows (Boonchom Srisa-ard: 2000).

The Mean of 4.51-5.00 referred to the highest quality level of the model.

The Mean of 3.51-4.50 referred to the high quality level of the model.

The Mean of 2.51-3.50 referred to the moderate quality level of the model.

The Mean of 1.51-2.50 referred to the low quality level of the model.

The Mean of 1.00-1.50 referred to the lowest quality level of the model.

As for the data gained from the opened-ended questions about recommendations, the researcher employed frequency distribution, content analysis, and a descriptive explanation in analyzing the data.

Phase 2: Exploring the Utilization Results of the Model of Supervising, Monitoring, and Evaluating Research Capabilities for Developing Instruction of Student Teachers

This step aimed to explore the research capabilities for developing instruction of student teachers based on performance results of operating research for developing instruction of student teachers. The evaluation form of research capabilities for developing instruction was considered. This form evaluated three parts which were (1) the evaluation of research proposals, (2) the evaluation of the operation as set in the research plans, and (3) the evaluation of research reports and learning quality of students who were developed via research processes for developing instruction that met the research objectives. The effectiveness of the development operation based on the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers was also evaluated. This covered four standards which were utility, feasibility, appropriateness, and accuracy. The researcher conducted via the following steps:

(1) The researcher took the draft of the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers to six people who were two program university supervisors, two general university supervisor, and two mentor teachers. These people would consider and examine accuracy, clarity, language communication, development steps and orders, content difficulty, operational time, and tools used to measure and evaluate the model results. It could be summarized as follows:

(1.1) The components and the development steps and orders were clear and in line with the supervision, monitoring, and evaluation of the research capabilities for developing instruction of student teachers.

(1.2) The content used in the development was appropriate. However, it was supposed to be concisely summarized, be provided with supplementary examples, be focused on connection, and be able to practice authentically. In terms of the language used, it was clear and was able to communicate understandable meaning.

(1.3) The Edmodo Program was supposed to be demonstrated and tried out during the supervision. The university supervisors and the mentor teachers were supposed to respond between each other.

(1.4) The tools used to evaluate research proposals and reports were supposed to be adjusted into a rating-scale format for the sake of convenience and ease in evaluating for the supervisors. Additionally, it could be in the same pattern as other evaluation used in the teacher professional internship center.

After that, the aforementioned recommendations were employed to adjust and correct the model and the tools in order to produce the complete version for trying out in the authentic situations.

Population and Sample Groups

The population consisted of the followings:

1. 90 university supervisors who were the instructors in Rajabhat Universities were employed. They were appointed by the universities to have duties in helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic

Year 2013. They consisted of 62 program university supervisors and 28 general university supervisors.

2. 408 mentor teachers who were the teachers in the teacher professional development network schools of the Lampang Rajabhat University were employed. Their duties included helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic Year 2013.

3. 408 student teachers who were students in Rajabhat Universities performed the full teacher professional internship in Academic Year 2013.

4. 4,463 students who received full learning management from the student teachers in Academic Year 2013.

The sample group consisted of the followings:

1. 19 university supervisors who were the instructors in Rajabhat Universities were employed. They were appointed by the universities to have duties in helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic Year 2013. They consisted of ten program university supervisors and nine general university supervisors who voluntarily applied into this sample group.

2. 40 mentor teachers who were the teachers in the teacher professional development network schools of the Lampang Rajabhat University were employed. Their duties included helping, supporting, giving advice on research for developing instruction, and evaluating research capabilities for developing instruction of the student teachers in Academic Year 2013. This sample group applied voluntarily.

3. 40 student teachers who were students in Rajabhat Universities performed the full teacher professional internship in Academic Year 2013. This sample group was voluntarily selected by their university supervisors and mentor teachers.

4. 435 students who received full learning management from the student teachers in Academic Year 2013. This sample group was voluntarily selected by their university supervisors and mentor teachers.

(2) The model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers was tried out in an authentic situation with the sample groups. It was conducted as follows:

(2.1) Prepare the readiness for student teachers, program university supervisors, general university supervisors, and mentor teachers as classified below.

2.1.1 Hold a two-day training for supervising, monitoring, and evaluating the results of the research capabilities for developing instruction for program university supervisors, general university supervisors, and mentor teachers. This aimed to give knowledge about the principles of supervision and monitoring based on the developed model and the consultation on the research for developing instruction. The explanation covered rationale and connection of each item through samples of practicing on giving consultation via the Edmodo Program. According to the observation during this step, it was found that program university supervisors, general university supervisors, and mentor teachers possessed knowledge and understanding. They could share their learning in analyzing and giving suggestions during their consultation among them. They could also employ the Edmodo Program in sharing learning accurately.

2.1.2 Hold a two-day training on the research for developing instruction of student teachers. This aimed to give knowledge about the principles of supervision and monitoring based on the developed model and the research for developing instruction. The explanation covered rationale and connection of each item through samples of practicing via the Edmodo Program. According to the observation during this step, it was found that the student teachers possessed knowledge and understanding. They could explain the connection among each item rationally. They could also employ the Edmodo Program accurately.

(2.2) Operate the teacher professional internship by giving advice and sharing the learning. It was conducted in eight steps as follows:

2.2.1 Program university supervisors, general university supervisors, mentor teachers, and student teachers cooperated in planning the supervision, monitoring, and evaluation of the research capabilities for developing instruction. The

supervision calendar throughout a semester of an individual student teacher was obtained in this step.

2.2.2 Program university supervisors, general university supervisors, and mentor teachers observed the teaching and presented the data gained from their observation of the student teachers so that they could cooperate in analyzing research problems. From this step, the student teachers would gain the instructional problems in order to be analyzed for their causes leading to research problems.

2.2.3 Student teachers explained the problem causes clearly whether these problems could be considered research problems or not. Then, they selected important problems affecting learners. They had to solve one problem by employing research processes. Also, they had to explore documents and relevant research in order to identify solutions.

2.2.4 Program university supervisors, general university supervisors, and mentor teachers inquired the student teachers about the guidelines and selected methods with provided reasons. The program university supervisors, general university supervisors, and mentor teachers would give further information about appropriate, possible, and practical guidelines.

2.2.5 Program university supervisors, general university supervisors, and mentor teachers cooperated in determining scopes or frames that the student teachers had to perform and operate. They gave advice on methods that the student teachers could choose.

2.2.6 Program university supervisors, general university supervisors, mentor teachers, and student teachers built mutual understanding toward methods and activities they would perform in operating the research for developing instruction.

2.2.7 Program university supervisors, general university supervisors, and mentor teachers reinforced and gave feedback to the student teachers through one-by-one supervision and the Edmodo program throughout their teacher professional internship in that semester.

2.2.8 Program university supervisors, general university supervisors, mentor teachers, and student teachers cooperated in sharing their learning after completing the teacher professional internship in order to summarize the knowledge body gained from the operation in (1) the directions of research capability development,

(2) the processes of research capability development, (3) the evaluation of research capability development, and (4) problems and obstacles of supervising, monitoring, and evaluating the research capabilities. The researcher was performed this step as a moderator. The results of sharing the learning and the knowledge body gained were expressed as follows:

In terms of the directions of research capability development, it could be summarized that program university supervisors, general university supervisors, and mentor teachers possessed understanding in supervising and monitoring in the same direction in that they aimed at solving problems. They offered cooperation in tackling the mistakes and making them perfect enough to pass the consultation and advice. This matched with the student teachers' needs in that they required the supervision and monitoring that aimed at giving advice and consultation rather than that aiming at evaluating.

In terms of the processes of research capability development, it could be summarized that the key development of the research capabilities of student teachers was close attention and consultation with program university supervisors, general university supervisors, and mentor teachers. They needed to consider nature, potentials, and various differences of the student teachers as they did not have much experience in their work. As for applying the social media networks into the supervision and monitoring, it expressed that they contained several advantages for program university supervisors, general university supervisors, and mentor teachers. This was due to the fact that everyone in the group could see the data of each other during giving advice or sharing the learning to the student teachers. As a result, knowledge and new concepts were gained. There was much discussion and consultation among program university supervisors, general university supervisors, and mentor teachers. This could lead to having more confidence in giving advice to the student teachers.

In terms of the evaluation of research capability development, it could be concluded that the previous evaluation of research capabilities of the student teachers was conducted only in two intervals which were before and after the research operation, while the evaluation during the research operation was quite ignored. With the lack of confidence in giving advice and consultation toward the research, the problems of changing the research titles during the semester and committing plagiarism of other researchers were

identified. However, with the three-interval evaluation – before, during, and after the research operation – these problems were decreased constantly. Additionally, that the student teachers possessed the learning from authentic practice could contribute to the development of the students' learning quality. The research processes for developing instruction could also generate planning skills, time management, data searching, computer utilization, and language used for communication within the student teachers.

In terms of the problems and obstacles of supervising, monitoring, and evaluating the research capabilities, it could be concluded that the teacher professional internship in the second semester affected the supervision calendar and determined research plans due to the fact that schools held the activities almost throughout the semester. The mentor teachers and the student teachers had much assignments and workload; the several holidays also had an influence.

(3) Explore the results of the model that influenced the research capabilities for developing instruction of the student teachers and the results gained from the students receiving the learning management through research processes from the student teachers. The details were shown as follows:

(3.1) Determine the variable definition of the research capabilities for developing instruction by considering the results of research performance for developing instruction of the student teachers that were derived from applying knowledge and understanding toward research processes. The evaluation was performed in three issues as follows:

1. The research proposals aimed to evaluate the capabilities in designing research. They were evaluated in nine parts which were research titles, historical background, research objectives, research scopes, definitions of terms, expected benefits of the study, documents and research relevant, research methodology, reference, and appendixes.

2. The research operation aimed to evaluate the results of operating research based on research plans. This expressed an effort in operating the research as planned in order to achieve success. The data were accurately gathered on a basis of

fact. The research methodology was improved or modified as suggested in the research proposal.

3. The research reports focused on evaluating the results of research findings, communication, and transferring. The results in applying research processed into developing instruction were evaluated in three parts which were introductory, body, and final parts of the reports.

(3.2) Apply the determined variable definition to construct three sets of the tools used to collect the data as shown below.

Set 1: The evaluation form of the research proposals for developing instruction. This form was in a format of a five-rating scale. It was used to evaluate before the research operation by general university supervisors, program university supervisors, and mentor teachers.

Set 2: The evaluation form of the research operation as planned. It was in a format of a record of the research operation evaluated by program university supervisors, general university supervisors, and mentor teachers.

Set 3: The evaluation form of the research reports for developing instruction. This form was in a format of a five-rating scale. It was used to evaluate after the research operation by general university supervisors, program university supervisors, and mentor teachers.

In terms of constructing and identifying the quality of the three tools used in the research, the researcher conducted as shown below.

1. Explore, analyze, and synthesize the documents relevant to the research for developing instruction and constructing tools to measure the research capabilities.

2. Produce the drafts of every tool to be in line with the variable definition aimed to study.

3. Take the drafts of every tool developed to five connoisseurs on supervising students, measuring, evaluating, researching in education, and developing supervision models for their consideration on the congruence between evaluation lists and

evaluation objectives, language usage, clarity of evaluation issues, and scoring methods. According to the analysis of the Index of Item Objective Congruence (IOC), it was found that the developed evaluation forms possessed validity with the IOC value of every item at 1.00 equally.

4. Examine the reliability of the tools developed as shown below.

4.1 Take the evaluation form of the research proposals for developing instruction to a group of three people – a program university supervisor, a general university supervisor, and a mentor teacher – in order for them to try out evaluating the proposals. Then, the correlation value of the evaluation results was identified. According to the analysis, it was found that the correlation value of the evaluation of the research proposals between the mentor teachers and the general university supervisors was 0.98, between the mentor teachers and the program university supervisors was 0.98, and between the program university supervisors and the general university supervisors was 0.99. This expressed that the evaluation results of the research proposals among the mentor teachers, the program university supervisors, and the general university supervisors were correlated.

4.2 Take the evaluation form of the research reports for developing instruction to examine reliability quality by offering to a group of three people – a program university supervisor, a general university supervisor, and a mentor teacher – in order for them to try out evaluating the reports. Then, the correlation value of the evaluation results was identified. According to the analysis, it was found that the correlation value of the evaluation of the research reports between the mentor teachers and the general university supervisors was 0.90, between the mentor teachers and the program university supervisors was 0.89, and between the program university supervisors and the general university supervisors was 0.92. This expressed that the evaluation results of the research reports among the mentor teachers, the program university supervisors, and the general university supervisors were correlated.

5. Produce the complete version of the tools and took them to gather the data from the sample groups.

(4) Explore the effectiveness of the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. The researcher conducted as follows:

(4.1) Explore how to construct tools, especially a questionnaire, and determine the content in the questionnaire of the opinions toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers.

(4.2) Develop the questionnaire of the opinions toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. The questionnaire consisted of two parts. Part 1 dealt with the opinions toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. The question items based on four evaluation standards developed by the Joint Committee on Standards for Educational Evaluations. These standards consisted of five items on utility, four items on feasibility, four items on appropriateness, and four items on accuracy. There were 17 items in total in a five-rating scale format. As for Part 2, it dealt with additional recommendations toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. This part was in a format of open-ended questions.

(4.3) Take the developed questionnaire of the opinions toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers to five connoisseurs on supervising students, measuring, evaluating, researching in education, and developing supervision models for their consideration on the congruence between question items and questionnaire objectives, language usage, and question clarity. According to the analysis of the Index of Item Objective Congruence (IOC), it was found that the developed questionnaire possessed validity with the IOC value of every question item at 1.00 equally.

(4.4) Examine the reliability of the questionnaire by trying out with 30 program university supervisors, general university supervisors, and mentor teachers who were not included in the sample group in order to identify the alpha coefficient of the entire questionnaire based on Cronbach's principle. It was found that the alpha coefficient of the entire questionnaire was 0.94.

(4.5) Produce the complete questionnaire of the opinions toward the model of supervising, monitoring, and evaluating the research capabilities for developing instruction of student teachers. Then, employ it to gather data from the sample group after trying out the model.

Data Collection

Program university supervisors, general university supervisors, and mentor teachers operated the supervision, monitoring, and evaluation toward research capabilities for developing instruction of student teachers via three tool copies. The data were collected in Semester 2, Academic Year 2013.

Data Analysis

The data analysis was conducted as follows:

(1) The data gained from the evaluation of research capabilities for developing instruction of student teachers were analyzed by calculating the Mean of scores from general university supervisors, program university supervisors, and mentor teachers. The interpretation criteria of the scores were shown as follows:

85.00-100.00 scores referred to the research quality passed at an excellent level.

75.00-84.99 scores referred to the research quality passed at a good level.

60.00-74.99 scores referred to the research quality passed at a moderate level.

0.00-59.99 scores referred to the research quality failed.

(2) The data gained from the questionnaires on the opinions toward the model were analyzed on a basis of a five-rating scale in a format of close-ended questions. Then, the data were calculated to identify Mean and standard deviation of opinion scores. The interpretation criteria of the Mean were shown as follows (Boonchom Srisa-ard: 2000).

The Mean of 4.51-5.00 referred to the highest quality level of the opinions.

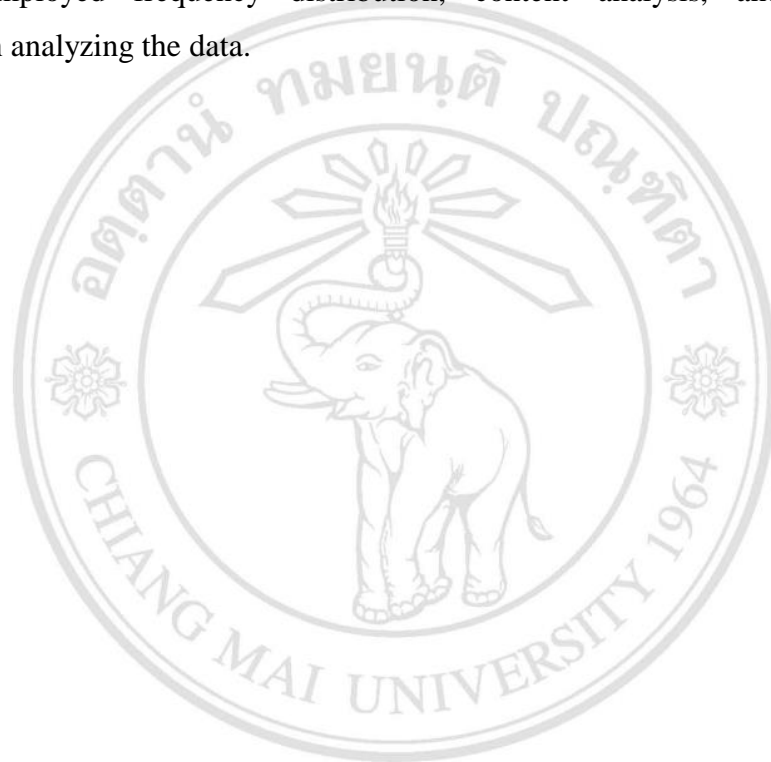
The Mean of 3.51-4.50 referred to the high quality level of the opinions.

The Mean of 2.51-3.50 referred to the moderate quality level of the opinions.

The Mean of 1.51-2.50 referred to the low quality level of the opinions.

The Mean of 1.00-1.50 referred to the lowest quality level of the opinions.

As for the data gained from the opened-ended questions about recommendations, the researcher employed frequency distribution, content analysis, and descriptive explanation in analyzing the data.



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