



Area-Based Learning Approach to the Competency Development of Social Studies Pre-Service Teachers in the Chiangmai Education Sandbox Area, Thailand

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Abstract

The purposes of this research were 1) to study the requirements for the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area; 2) to develop a manual for the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area; and 3) to study the results of the Area-Based Approach to the transversal competency development of social studies pre-service teachers. The study was descriptive and included 64 participants in total: 1) 33 school administrators, supervisors, and teachers; and 2) 31 social studies pre-service teachers. A volunteer sampling method was used. The research instruments included 1) a non-structured interview, 2) an assessment of the manual, and 3) an assessment of competency. In the data analysis, a content analysis was carried out and presented in description, and the quantitative data were analyzed to find means and standard deviation. The results of the study revealed the following: 1) The 4 main competencies schools require of the social studies pre-service teachers are: (1) content knowledge, (2) learning management, (3) engagement strategies, and (4) professional development. 2) A manual for the area-based approach was developed, consisting of 4 learning units in 4 steps referred to as the “AAAR Area-Based Approach”. It was judged to be very appropriate and effective. And 3) The results of the assessment of the perception of the social studies pre-services teachers regarding the area-based competencies in the Chiangmai Education Sandbox Area was at the ‘good’ level.

Keywords: Area-Based learning approach, Learning management competency, Social studies pre-service teachers, Social studies learning innovation, Chiangmai education sandbox area.

Citation | Charin Mangkhang; Chayanid Yimsawat; Adisorn Nettip; Nitikorn Kaewpanya (2021). Area-Based Learning Approach to the Competency Development of Social Studies Pre-Service Teachers in the Chiangmai Education Sandbox Area, Thailand. *Journal of Education and e-Learning Research*, 8(3): 264-271.

History:

Received: 18 May 2021

Revised: 21 June 2021

Accepted: 9 July 2021

Published: 29 July 2021

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Publisher: Asian Online Journal Publishing Group

Acknowledgement: All authors contributed to the conception and design of the study.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no conflict of interests.

Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study was reported; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained.

Ethical: This study follows all ethical practices during writing.

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Contribution of this paper to the literature

This research investigates the area-based learning innovation for the development of the competencies of social studies pre-service teachers in the Chiangmai Education Sandbox Area. The purposes are to develop the competencies of social studies pre-service teachers; to develop education innovation suitable for learning management; and to reinforce the competencies of social studies pre-service teachers to subsequently support schools in the Chiangmai Education Sandbox Area.

1. Introduction

Education is an important instrument in global societies for the development of citizens and for strengthening communities. In developed countries, the development of people first occurs through quality education before expanding to other parts of society. Every sector increasingly recognizes the importance of education, and the concrete effects can be seen in the National Education Act B.E. 2542 and the Amendment B.E. 2545 (No. 2). These Acts prescribe social participation from parents, stakeholders, and different agencies in the management and development of education. Accordingly, educational institutions cooperate with stakeholders and all parts of the community to develop students according to their potential. These actions and principles are specified in the National Education Act as guidelines for education management on the basis of sustainable development which includes 3 main aspects: 1) competitive capability, based on available resources and the institutional capacity; 2) capability to respond to the needs of students and stakeholders; and 3) capability to adapt to local contexts and universality (Panyanuwat, 2014).

According to the United Nation's Sustainable Development Goals (SDGs), Goal 4 demands education equality and coverage and emphasizes life-long learning for all. The goal aims to achieve higher quality education with universal principles as well as to increase the number of qualified teachers through international cooperation in teacher training (United Nation, 2015). Teachers are regarded as the main mechanism for driving education reform at the area level, in order to prepare students to become citizens in the post-digital society. Therefore, classroom conditions must also change accordingly.

The Education Innovation Area Act B.E. 2562 has been in effect since 30 April 2019. This Act emphasizes the management of basic education as an important basis for developing the Thai people to improve their quality, knowledge-seeking capabilities, creativity, communication proficiency, the ability to live and work well with a variety of people, global awareness, and occupational skills according to aptitude of each student. Cooperation is needed between the government, local government organizations, private sector, and civil societies to develop high-quality and effective education and to reduce education inequality through basic education management. Therefore, the education innovation areas have been established as areas in which education administration and management is to be reformed. These areas function as a pilot project for education innovation based on a concept of decentralization in which educational agencies and schools develop education quality and effectiveness, reduce inequality, expand innovation to the management of teaching and learning, and discover best practices to be used in other schools.

The concept of area-based education is concerned with collecting experience in the community, which is accomplished by analyzing the national curriculum and designing supplementary curriculums in order for students to learn through experiences in their communities. To make it conform to the specific community needs and conditions, every part of a community can assist in developing the supplementary curriculum to make the learning meaningful and to help the students become pro-active citizenship (Mangkhang, 2017). Area-based education responds to the needs of societies, cultures, and the environment, and it is managed through the cooperation of various parties in education, the private sector and local sector, with the mutual goal of using education to bring success to their area. The decentralization of education management to local areas will develop the potential of Thai students, prepare them for future careers, and provide a larger variety of learning activities (Pholshu, 2018). Guidelines for the management of area-based learning are helpful for teachers to select content and learning methods suitable to the students' context. Schools and the community can design effective area-based learning management in responding to the community needs.

According to study results on education reform since 1999, the competencies of university graduates did not conform to users' needs and these graduates still lacked necessary basic knowledge and skills. The main mechanism for learning is a "teacher" who is meaningful and powerful presence in the classroom. A teacher is also important for education quality, since the quality of learning depends on the quality of the teacher. Therefore, a teacher is an important factor at the school level, who has the strongest effect on students' learning (Siribanphithak, 2006; Siritharangsi, 2014).

The subject area of social studies, religion, and culture helps students to gain knowledge and understanding about living as an individual and living together in society, adaptation to the environment, and the management of limited resources. In addition, this subject area is also helpful for students to understand themselves, other people, and their development over time according to various factors. Students are trained to be patient and virtuous, accept differences, have the ability to apply their knowledge to life, and be good citizens of the country and the world (Ministry of Education, 2008). Social studies is effective in enhancing students' imagination by using social science methods to manage different issues and problems; encourages critical thinking, social criticism and good practices; and enhances students' self-development to become good and valuable citizens of societies and to live happily with other people (Michaelis & Jesus, 1996). In addition, social studies ties in with the concept of area-based learning because it is concerned with community needs and problems to work towards sustainable development of the community. It also emphasizes people's participation in education and in the community in the post-digital society. Education management must be adapted in response to the culture of each community, ensuring that it relates to the problems and crises in the community. The focus should be on teaching knowledge and creating a learning process which is sufficient for children and youth in the community in terms of the necessary knowledge, thinking and skills that will enable students to cope with the problems and challenges in their daily lives and work, surrounded by change.

Currently, in the education management of social studies, most problems are related to the quality of the teachers, who lack in-depth knowledge and understanding of social methods, learning activity design, activity arrangement, material development, and testing and evaluation. Moreover, although Western learning methods are integrated in the social studies course, the teachers lack in-depth specialized knowledge and do not understand interdisciplinary integration in social studies (Bureau of Academic Affairs and Educational Standards, 2013; Suebwatthana, 2011; Thailand Development Research Institute, 2013).

The concept of teacher competencies is based on the focus on reinforcing competencies from the field of human resources. It is believed that when teachers are developed to gain competencies, they will be able to drive education development to the desired goals. With competencies, teachers can carry out continuous self-development in their profession. Professional competency is a behavioral attribute, resulting from knowledge, skills, ability, and other characteristics. To express a particular competency, a person must possess the particular knowledge, skills, ability, and other characteristics (Ministry of Education, 2010). Social studies teachers must be able to analyze problems and needs, to undertake self-directed learning, and to be aware of the conditions necessary for self-development. This analysis is necessary to discover the development needs, in terms of the differences between the current and expected conditions. The results of self-analysis are important to teachers, who can then expand their knowledge and become capable of planning lessons appropriately by collecting different data to arrange learning activities according to the curriculum (McTich & Grant, 2004). Social studies teachers are important because social studies emphasizes students' competency development to learn how to live appropriately with other people in society, with balance and sustainability. Social studies also focuses on the various skills necessary to students in the 21st century, i.e., social skills, thinking skills, decision-making skills, and problem-solving skills. It is aimed at developing students to become good citizens. Therefore, social studies, or the subject area of social studies, religion and cultures, should be managed appropriately to enhance students' experience (Kessunk, Kumyon, Phutthasen, & Kessunk, 2019). There is an urgent need to develop the competencies of the social studies pre-service teachers before their teaching internship in order to enable them to support education management in the education innovation areas in the near future.

The rapid advancement of technology and innovation has given rise to disruptive technology that affects the economy as well as people's ways of life around the world. Digital technology is found abundantly in daily life, education, and data use for management. Technology plays various important roles in every aspect of daily life (Bamrungsetthapong, Tharnpanya, & Satjahiruthai, 2020). Hybrid learning offers a learning model that focuses on interaction and the use of modern technology in collaborative learning, which is an important factor in helping students to develop into global citizens. Hybrid learning is an education innovation which integrates various learning modules, such as online self-learning or E-learning, into classrooms by focusing on interaction in order to increase the effectiveness of learning and teaching (Yaso, 2017). The competency development of pre-service teachers needs to be improved to respond the situation in the country. The area-based learning innovation is able to respond to variety and changes in society and can be managed in the authentic classroom (onsite learning) as well as in the virtual classroom (online learning).

As a result, this research aims to investigate the effectiveness of the area-based learning innovation for developing the competencies of social studies pre-service teachers in the Chiangmai Education Sandbox Area. The purposes are to develop the competencies of social studies pre-service teachers; to develop education innovation suitable for hybrid teaching and learning management; and to reinforce the transversal competencies of social studies pre-service teachers so they can later support schools in the Chiangmai Education Sandbox Area.

2. Research Method

2.1. Scope of the Study

2.1.1. Scope of Area

This study focuses on schools in the Chiangmai Education Sandbox Area, Thailand.

2.1.2. Scope of Content

This study investigates the effects of learning innovation on the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area, Thailand.

2.1.3. Scope of Population and Sample Group

The studied population included school administrators and teachers from 15 schools, educational supervisors, and social studies pre-service teachers in the Chiangmai Education Sandbox Area.

The study involved 64 participants in total: 1) 33 school administrators, educational supervisors, and teachers; and 2) 31 social studies pre-service teachers. The participants were recruited through a volunteer sampling method.

2.2. Methodology of the Study

2.2.1. Method of Study

This research is descriptive and involved the collection of qualitative data from interviews and quantitative data from assessment forms. The data were analyzed using descriptive analysis, and the qualitative and quantitative data were synthesized to allow conclusions to be drawn.

2.2.2. Method of Collecting Data

1) A Documentary Study was conducted by collecting data from document, books and journals to gain an understanding of the theories, concepts, and related research work in order to support the analysis of the study issues.

2) The study of field data (Field Study) was divided into three phases as follows:

Phase 1: A Situational Analysis was performed on the qualitative data from the interviews with school administrators, educational supervisors, and teachers regarding the main competencies required by schools to develop social studies pre-service teachers to support schools in the Chiangmai Education Sand Box Area. The instrument used was a non-structured interview on the requirements for competency development of the social studies pre-service teachers in the Chiangmai Education Sandbox Area.

Phase 2: Manual Design and Development was implemented by using the quantitative data analysis to design and develop the manual for the area-based approach. The instrument was an assessment form on the appropriateness of the manual for the area-based approach. Then the quality and effectiveness of the manual was tested through expert validation concerning learning management.

Phase 3: An Assessment of Effectiveness was conducted to assess the area-based approach based on the perceived competency of the social studies pre-service teachers. The instrument was an assessment form on the competency perception of the social studies pre-service teachers in the Chiangmai Education Sandbox Area.

2.2.3. Tools Utilized in the Study

- 1) A non-structured interview on the requirements for competency development of the social studies pre-service teachers in the Chiangmai Education Sandbox Area.
- 2) An assessment form on the appropriateness of the manual for the area-based approach.
- 3) An assessment form on the competency perception of the social studies pre-service teachers in the Chiangmai Education Sandbox Area.

2.2.4. Analysis of Information

- 1) Analysis of the qualitative data was performed through a content analysis of the interview data to identify the issues arising in the data and to analyze the data relationships.
- 2) Analysis of the qualitative data was performed using a statistical program to present descriptive statistics in means and standard deviation.

3. Results

The results are presented below, according to the three study phases.

3.1. Studying Requirements for Competency Development of Social Studies Pre-Service Teachers in the Chiangmai Education Sandbox Area

In the study of the requirements for competency development of social studies pre-service teachers in Chiangmai Education Sandbox Area, it was found that the school administrators, educational supervisors, and teachers require 14 competencies of the social studies pre-service teachers. These competencies were (1) creative thinking, (2) problem solving, (3) communication, (4) analytical thinking and the ability to connect knowledge, (5) flexibility and adaptiveness, (6) the ability to relate knowledge to life, (7) information technology literacy, (8) respect for differences and other people's different opinions, (9) a knowledge of arts and cultures, (10) the ability to work together with other people, (11) occupational development and sufficiency, (12) love for country and community, (13) language and communication, and (14) self-development and life security. By grouping these competencies, 4 main competencies were identified which the school administrators, educational supervisors, and teachers required: (1) content knowledge, (2) learning management, (3) engagement strategies, and (4) professional development. The interviews with the school administrators, educational supervisors, and teachers reflected the fact that there is an urgent need to develop the transversal competencies of the social studies pre-service teachers before their teaching internship, in order to prepare them to work in the Chiangmai Education Sandbox Area.

3.2. Developing a Manual for the Competency Development of Social Studies Pre-Service Teachers in the Chiangmai Education Sandbox Area.

During the manual development for the area-based approach to competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area, 4 main learning units were identified for the area-based approach, as presented in Table 1.

Table-1. Manual description of the area-based approach for the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area.

Unit	Description	Learning Period
1. Lanna Identity	Reflection on Lanna values and identity in accordance with contexts and communities by focusing on awareness through senses in the cultural dimension. Be able to apply.	3 hours
2. The Future Analysts	In the post-digital society, changes occur rapidly in the dimensions of economy, society, and environment with effects on community and residences. The Future Analysts lesson enables students to be prepared with plans to creatively cope with emerging occurrences in the future, with awareness of their own communities.	3 hours
3. Well-being Way of Life	Integrating knowledge with life and reinforcing the competency of applying life skills to scientific and social studies phenomena in relation to conceptual learning in the classroom and reality, in the context of the area-based identity	3 hours
4. Green Entrepreneur	Become a green entrepreneur and green business by focusing on a context of environmental friendliness and sustainability.	3 hours

In the manual for the area-based approach to the competency development of the social studies pre-service teachers in the Chiangmai Education Sandbox Area, the area-based approach consists of 4 steps known as "AAAR Area-based Approach" as illustrated in Figure 1 and Table 2.



Figure-1. The learning process in the area-based approach to the competency development of social studies pre-service teachers to support schools in the Chiangmai Education Sandbox Area, Thailand.
 Source: Adapted from Mangkhong (2021).

Table-2. Description of the learning process in the area-based approach for competency development of social studies pre-service teachers to support schools in the Chiangmai Education Sandbox Area, Thailand.

Step	Teacher's Role	Student's Role
Step 1 Awareness: A	To raise students' awareness in various dimensions, depending on the learning objectives or the competency to be developed. The teacher may use various strategies or techniques including seeking internal and external information in order to raise students' awareness through survey and empirical evidences.	To be aware of self-identity and the existence of arts and cultures in the community as valuable assets of the community, both in tangible and intangible forms. To be aware of differences between various cultures and societies while tolerating these differences. To be aware of problems or challenges such as deterioration of the environment, poverty, physical changes, global climate change, etc.
Step 2 Anticipation: A	To design classroom activities in relation to Step 1 Awareness. The main component in this step is for students to form simulations or future scenarios in order to gain habits of thinking that will be useful for themselves in the future. The encouragement to think of future scenarios or simulations is useful for the frontal brain development of children and adults as a part of the advanced thinking process.	Students use their ability to anticipate the short-term and long-term effects of particular incidences in order to achieve understanding through their own and others' intentions, as well as to expand their own and other people's perspectives. The students must be aware that an action in the present has effects in the future or vice versa. The students not only set questions on the possible incidences, but they should also consider and anticipate the consequences of such incidences if particular solutions are neglected or are not done in one way or another. The students should be able to understand the problems, solve the problems, and cope with the stress from various phenomena in society, communities, and the environment. This process is highly related to the step of awareness.
Step 3 Action: A	In this step, the teacher must design various activities for individuals or groups to carry out. The important thing is that the students must be aware that the consequences of such actions might be positive or negative	The students practice making contributions to the dimensions of life, society, economy, and environment. This practice can take either physical or conceptual form by seeking information or investigation leading to discovery, innovation and creation with responsibility for the consequences of particular situations, and the creation of new values.
Step 4 Reflection: R	The teacher must arrange activities that expose students to meaningful experiences through in-depth thinking and understanding the relation between experiences and concept formation. The reflection can enable students to perceive their own power to do things in the future.	The students reflect systematically and concretely on the basis of the pursuit of scientific knowledge in combination with attitudes and values, self-confidence, and trust in other people. Accordingly, their intelligence is developed through reflection in combination with the skills of self-direction and creative thinking. The reflection also relate to issues of ethics, values and motivation. This learning model takes the shape of a cycle. The reflection leads to increased awareness of oneself, other people, and the surrounding society. Such competency development leads to changes which are developed deeply through the reflection process.

The results of the effectiveness assessment by the experts of the manual for the area-based approach to the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area are illustrated in Table 3.

Table-3. Effectiveness assessment of the manual for the area-based approach to the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area.

List of Assessment	\bar{x}	SD	Interpretation
1. Learning with enhancement of community contexts is appropriate for the Chiangmai Education Sandbox Area.	5.00	0.00	Most appropriate
2. Learning can enhance the teaching profession.	4.80	0.45	Most appropriate
3. Learning can enhance learning management skills through the area-based approach in the Chiangmai Education Sandbox Area.	4.80	0.45	Most appropriate
4. Learning is through a variety of student-centered activities.	4.80	0.45	Most appropriate
5. Learning can enhance creative thinking in the area-based learning management.	4.80	0.45	Most appropriate
6. Learning can enhance the preparation of learning media and materials made of local raw materials.	4.60	0.89	Most appropriate
7. Learning can enhance new knowledge formation useful for innovation in the community.	4.60	0.55	Most appropriate
8. Learning is through activities that cover the main competencies of social studies pre-service teachers to support schools in the Chiangmai Education Sandbox Area.	4.60	0.89	Most appropriate
9. Learning responds to the needs of schools and teacher training institutions in the Chiangmai Education Sandbox Area.	4.40	0.89	Appropriate
10. The duration of learning and real classroom practice is appropriate.	4.40	0.55	Appropriate
11. Learning can enhance an instrument design for area-based testing and evaluation in the Chiangmai Education Sandbox Area.	4.20	0.84	Appropriate
12. Learning with a variety of activities creates opportunities for discussion and an exchange of ideas.	4.20	0.45	Appropriate
13. Learning takes place through hands-on activities.	4.00	0.71	Appropriate
14. The learning process is appropriate for learning management in the Chiangmai Education Sandbox Area.	4.00	1.00	Appropriate
15. Learning can raise awareness of the importance of community identity in the Chiangmai Education Sandbox Area.	4.00	1.00	Appropriate
Total average	4.48	0.28	Appropriate

Table 3 demonstrates that the overall average effectiveness of the manual for the area-based approach to the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area is at the ‘appropriate’ level ($\bar{x} = 4.48$). Looking at each aspect separately, the appropriateness of the manual is judged as ‘most appropriate’ in 8 items: learning with enhancement of community contexts is appropriate for the Chiangmai Education Sandbox Area ($\bar{x} = 5.00$); learning can enhance the teaching profession ($\bar{x} = 4.80$); learning can enhance learning management skills through the area-based approach in the Chiangmai Education Sandbox Area ($\bar{x} = 4.80$); learning is through a variety of student-centered activities ($\bar{x} = 4.80$); learning can enhance creative thinking in the area-based learning management ($\bar{x} = 4.80$); learning is through activities that cover the main competencies of social studies pre-service teachers to support schools in the Chiangmai Education Sandbox Area ($\bar{x} = 4.60$); learning can enhance the preparation of learning media and materials made of local raw materials ($\bar{x} = 4.60$); and learning can enhance new knowledge formation useful for innovation in the community ($\bar{x} = 4.60$), respectively.

3.3. Studying the Results of the Area-Based Approach to the Transversal Competency Development of Social Studies Pre-Service Teachers in the Chiangmai Education Sandbox Area

The results of the perceived transversal competency of the social studies pre-service teachers to support schools in the Chiangmai Education Sandbox Area are illustrated in Table 4.

Table-4. Results of the perceived transversal competency of the social studies pre-service teachers to support schools in the Chiangmai education sandbox area.

List of Assessment	\bar{x}	SD	Competency Perception
1. Awareness of health and good quality of life	4.40	0.57	Excellent
2. Use of digital technology to increase the value of entrepreneurship	4.15	0.35	Excellent
3. Perception of the value of Lanna identity in relation to own and community identities	4.10	0.42	Excellent
4. Problem analysis and opportunity seeking to develop entrepreneurship	4.10	0.57	Good
5. Pride in work, resulting from creative designs to increase the value of the area-based identity	4.10	0.71	Good
6. Participation in prevention of environmental crises and global climate change, as a global citizen	4.05	0.49	Good
7. Collect information for analyzing future scenarios regarding economy, communities, environment, ways of life, and effects on communities	4.05	0.49	Good
8. Problem analysis about Lanna identity through a transformative learning process	4.00	0.57	Good
9. Analysis and relation to the area-based identity and the sustainable development of the country	4.00	0.57	Good
10. Planning to cope with future environment using a framework of science, technology, society, and environment	4.00	0.42	Good
11. Awareness of preparation as members of local communities, the country, and the world	4.00	0.57	Good
12. Participation in proposing policies and preparing implementation for the future	4.00	0.42	Good

List of Assessment	\bar{x}	SD	Competency Perception
13. Creative innovation to enhance Lanna identity for community sustainability	3.80	0.42	Good
14. Establish green entrepreneurs with social responsibility for environmental friendliness	3.95	0.49	Good
15. Presentation of information related to science and social studies to reasonably explain phenomena	3.75	0.64	Good
Total Average	4.03	0.51	Good

According to [Table 4](#), the average results of the overall transversal competency perception of the social studies pre-service teachers is at the 'good' level ($\bar{x} = 4.03$). Looking at each aspect separately, the perceived competency of the social studies pre-service teachers was 'excellent' in the case of 3 items: awareness of health and good quality of life ($\bar{x} = 4.40$); use of digital technology to increase the value of entrepreneurship ($\bar{x} = 4.15$); and perception of the value of Lanna identity in relation to own and community identities ($\bar{x} = 4.10$), respectively.

4. Discussion and Conclusion

1) The main competencies required by schools to develop social studies pre-service teachers to support schools in the Chiangmai Education Area Sandbox are 4: (1) content knowledge, (2) learning management, (3) engagement strategies, and (4) professional development. This finding is consistent with the results of [Phuangphae \(2018\)](#) who found that the competencies of social studies teachers cover attributes and behaviors expressing their knowledge and teaching specialization in social studies. In addition, [Mekhiransiri \(1987\)](#) insists, with regards to teaching competency, that social studies teachers should be capable of modeling behaviors that support students' physical, intellectual, emotional, and societal growth. [Thotsawat \(1982\)](#) distinguishes four competencies of social studies teachers: 1) Teaching competency of social studies teachers involves the skills for preparing experiential learning activities, and applying various teaching skills in combination with psychological principles to enable students to learn according to the objectives of the curriculum. 2) Professional competency of social studies teachers refers to the knowledge and understanding of different aspects of their profession, i.e., understanding the secondary education curriculum and the social studies curriculum in order to understand students' learning development and learning theories, and the possession of skills to develop learning material and perform evaluation. 3) Academic competency of social studies teachers encompasses the knowledge and understanding of the content of social studies and other related subject areas in order to relate such knowledge to the lesson content. Teachers should expand their knowledge to progress academically and to provide services to community. And 4) Human relationship competency of social studies teachers refers to their ability to establish good relationships with related people, such as students, colleagues, other school personnel, parents, etc. Furthermore, [Ellis \(1991\)](#) suggests that professional social studies teachers should possess 5 competencies: 1) communication and interaction, 2) teaching social studies, 3) specialist knowledge of social studies, 4) material and media preparation, and 5) social studies professional skills. According to [Zevin \(2015\)](#), professional social studies teachers should have 7 competencies: 1) content knowledge, 2) critical thinking, 3) pedagogic/didactic skill, 4) creation of new lessons and materials as well as the use of various teaching techniques suitable for the lessons, 5) application of technology innovation and social media, 6) professional/teaching career, and 7) citizens in democracy. These competencies should be fostered in pre-service teachers in order to drive the mechanism of area-based education reform and to later support schools in the education innovation areas.

2) In the development of the manual for the area-based approach to the competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area, four learning units were developed to teach the area-based approach in four steps known as "AAAR Area-based Approach". The results of the effectiveness assessment of the manual demonstrated that it is most appropriate to the learning objectives. The experts comment that the learning process outlined in the manual is in accordance with the needs of both schools and community to develop teachers with an understanding of community identity, and the objectives of the manual are consistent with the development of pre-service teachers according to the area-based approach to sustainability. Similarly, [Chaiso \(2015\)](#) suggest that, in teacher training with standard professional competencies, the contexts of such teacher training will necessarily form the basis for their development of the competency of teaching students according to their needs and goals. [Watcharanimit, Pimsan, and Tanawutpornpinit \(2020\)](#) state that teachers should be trained in core competencies and specialized competencies. Teachers and personnel should be encouraged to carry out continuous self-development in order to apply newly developed knowledge to arrange learning activities more effectively. They should be supported in the use of media and technology for teaching and learning. Technological media should be provided for teachers to use in teaching and learning, and innovation and learning sources in the community should be incorporated in teaching and learning activities as well. [Dechakhup and KhangKhan \(2008\)](#) confirm that, due to the many changes in Thai society, teachers should be pushed to gain higher degrees of competency to adjust their teaching in accordance with students' potential and to develop them to cope with different social situations at present and in the future.

3) According to the results of the area-based approach to the transversal competency development of social studies pre-service teachers in the Chiangmai Education Sandbox Area, the perceived competency of the social studies pre-service teachers was at the 'good' level. These pre-service teachers reflected that the innovative learning program made them understand and increased their awareness of their own roles in self-development; the ability to manage learning activities through hands-on practice; and the exposure to direct experience in field work. Such internships prepare them for a teaching career in schools. Similarly, [Panich \(2015\)](#) states that learning through hands-on activities exposes students to real emotional experiences that help students to understand values and lead to conceptual changes and advanced thinking. Moreover, [Siritharangsi \(2009\)](#) suggests that teachers should be knowledgeable people that should continuously develop themselves for professional progress. Self-development is regarded as an important factor in teachers' behavioral changes. To facilitate teaching and learning, the focus should be on the improvement of teachers and educational personnel to become professionals. In the teaching profession, encouragement and support should be provided for continuous development more than in other professions. Teachers should possess the knowledge and skills to teach particular subjects, language proficiency, and modern technological

literacy to become channels of development and knowledge seeking in the modern world. The reward system for teachers should adequately compensate knowledgeable and capable teachers who can manage teaching and learning with quality and effectiveness in the age of globalization. Watcharanimit et al. (2020) suggest that teachers' competencies should be developed to enable teachers to gain the potential to change learning and teaching processes, change public attitudes, display the ethics appropriate to the teaching profession, engage with their profession with love, and take pride in being a teacher. The proper development of teachers' competencies is through self-development. According to previous research results, transversal competencies are regarded as an important factor of the teaching profession, as procedural standards and professional goals. The transversal competencies of pre-service teachers should be fostered before they become regular teachers in order to drive the policies and mechanisms of Thai education reform to develop the Thai education system so that it keeps up with international standards.

5. Suggestions

5.1. Suggestions for Research Application

- Cooperation among teacher training institutions should focus on the transversal competency development of teaching students before they take teaching internship in schools.
- Students of social studies should have opportunities to carry out field work before their teaching internship in schools.
- Learning local dialects and indigenous languages should be encouraged among students in social studies.

5.2. Suggestions for Future Research

- A manual for the area-based approach should be developed to encourage the transversal competency development of pre-service teachers in other subject areas in the Chiangmai Education Sandbox Area.
- Studies on the competency development of students in different education innovation areas should be compared to discover the student transversal competencies consistent with the needs of each area.
- The area-based approach to social studies pre-service teachers should be studied and followed up during their teaching internship.

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