



Modern Guidelines of Teaching and Learning for Agriculture Teacher Production in Thailand

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Abstract

This study is aimed at investigating modern guidelines of teaching and learning for agriculture teacher production in Thailand. This mixed method: documentary and qualitative study is aimed at investigating modern guidelines of teaching and learning for agriculture teacher production in Thailand. The research methodology in this study comprises of three steps: 1) investigation of related concepts, theories and documents was divided; 2) preparation of guidelines of teaching and learning obtained from step 1; and 3) assessment of the guidelines of teaching and learning obtained from step 2 using qualitative research (focus group). Consequently, nine aspects of the modern guidelines of teaching and learning for agriculture teacher production in Thailand were obtained as follows: 1) Selection and development of learners; 2) Development of teachers; 3) Development of the curricular program; 4) Development of premises, facilities and environment management; 5) Teaching and learning management; 6) Extracurricular program activities management; 7) Learning about the community, nature, local scholars and local wisdom management; 8) Teaching practicum and The supervision system management; and 9) Assessment management.

Keywords: Modern Guidelines; Teaching and Learning; Agriculture Teacher; Teacher Production; Teacher Education

Introduction

The Agriculture teacher is an important component in promoting the achievement of goals of agricultural education in Thailand. Aside from the roles in teaching in both formal and non-formal education, the Agriculture teacher also plays roles directly and indirectly about agricultural careers, such as creation of good attitudes and understanding the importance of agricultural careers to students who may choose an agricultural career in the future [1]. In addition, the Agriculture teacher plays a role in the agricultural career development, such as extension of agricultural technology and the coordinator for the public sector and farmers. This aims to develop the quality of life of farmers, security and the community [2]. All of these involve the role of the Agriculture teacher that covers all dimensions of human life and is an important factor in a country's development. Therefore, Agriculture teacher production

is important and the government should pay serious attention to it.

Agriculture teacher production began in 1917 with the establishment of Hor-Wang Agriculture Teacher education school. The students were prepared to be teachers in agricultural schools, elementary and secondary school [1,3]. Currently, there are five higher education institutes that produce 5-year-program for Agriculture teachers namely: 1) King Mongkut's Institute of Technology Ladkrabang (KMITL); 2) Surin Rajabhat University; 3) Uttaradit Rajabhat University; 4) Phetchaburi Rajabhat University; and 5) Chiang Mai Rajabhat University. In addition, there are some other higher education institutes that want to produce Agriculture teachers, but the problem is that the teacher teaching Agriculture teachers must be a graduate of education in agriculture only. At present, the country lacks Agriculture teachers and requires a lot of Agriculture teachers.

Regarding Agriculture teacher production, it is essential that students in this field must have high quality and standards in accordance with the determination of the Teachers Council. Also, they must have good knowledge and capability in agriculture and teaching. This is because their students are aimed to have cognitive domain, psychomotor domain and affective domain to pursue agricultural careers or continue their study in agriculture in the future [1]. Hence, the process of Agriculture teacher production is essential and needs modern guidelines for the clear and systematic Agriculture teacher production. This is used as a modern guideline for appropriate and correct teaching and learning, which conforms to the context of each educational institute, community, society, as well as the needs of workforce market and educational policy of the government. Because of these, this study aims to obtain modern guidelines of teaching and learning for Agriculture teacher production that will be very beneficial for Agriculture teacher production. It can be a modern guideline for educational institutes producing Agriculture teachers to apply it to suit with their condition and context. However, the operation of all educational institutes must be under the same guideline, which implies that they are in the same direction. The government policy determination for the development and promotion of Agriculture teacher education can be implemented conveniently, rapidly and effectively. Thus, Agriculture teacher education in Thailand will be developed continually both in the present and in the future.

Problem of research

Now, there is still no modern guideline for the clear and systematic agriculture teacher production in Thailand that is appropriate and correct which conforms to the context of each educational institute, community, society, as well as the needs of workforce market and educational policy of the government. This modern guideline will be very beneficial for agriculture teacher production whole system in the present and in the future.

Research focus

This study is aimed at investigating modern guidelines of teaching and learning for Agriculture teacher production in Thailand. For answers to questions: How should the modern guidelines of teaching and learning for Agriculture teacher production in Thailand be?

Materials and Methods

This study employed mixed method: documentary review and qualitative research. It consists of 3 steps as follows: 1) Investigation of related concepts, theories and documents; 2) Preparation of a draft of teaching and learning guidelines; and 3) Assessment of guideline of the teaching and learning draft.

First Step: Investigation of related concepts, theories and documents

This step consists of documentary review. The investigation of related concepts, theories and documents was divided into 4 parts: 1) Exploration traits of teacher production in Thailand; 2) Exploration traits of the teaching and learning for the production of Agriculture teachers abroad; 3) Exploration of concepts and skills of the 21st century; and 4) Exploration of the Teacher Council regulation on professional standards and codes of conduct of the profession, 2013, as shown in table 1.

Subject matter	Details
1. Traits of teacher production in Thailand.	General information of Agriculture teachers in Thailand.
	Condition of teaching and learning for agriculture teacher’s production in Thailand.
	Additional recommendations in teaching and learning for agriculture teacher’s production in Thailand.
	Management of teaching and learning for agriculture teacher’s production in Thailand.
2. Traits of the facilitation of teaching and learning for Agriculture teacher production abroad.	Management of teaching and learning for agriculture teacher’s production in the Americas.
	Management of teaching and learning for agriculture teacher’s production in Europe.
	Management of teaching and learning for agriculture teacher’s production in Africa.
	Management of teaching and learning for agriculture teacher’s production in Asia and the Pacific.
	Element of teaching and learning for agriculture teacher’s production abroad.
3. 21 st century Skills.	Concepts of 21 st century.
	Skills of 21 st century.
4. The Teacher Council regulation on professional standards and codes of conduction of the profession, 2013.	Regulation on professional standards, 2013.
	Codes of conduction of the profession, 2013.

Table 1: The summary of the documentary review involved the investigation of related concepts; theories; and documents.

Second Step: Preparation of a draft of teaching and learning guidelines

The obtained data from first step were analyzed and synthesized in which all of the data were set to have equal weight of importance. The sequence of the draft preparation on the teaching and learning was as follows: 1) Investigated background of the data used for preparing guidelines of teaching and learning; 2) Made conclusions from the data; and 3) Preparation of draft guidelines for teaching and learning. This draft comprises of 9 aspects:

- Selection and development of learners.
- Development of teachers
- Development of the curricular program
- Development of premises, facilities, and environment management
- Teaching and learning management
- Extracurricular program activities management
- Learning the community, nature, local scholars, and local wisdoms management
- Teaching practicum and the supervision system management
- Assessment management

Last Step: Assessment of guideline of the teaching and learning draft

This was aimed at considering the teaching and learning draft prepared in step 2 using qualitative research (focus group). Ten people were involved in the assessment as follows:

- Two agricultural education specialists in Thailand.
- Three research consultants
- Those responsible for the curricular program or the representatives of the 5 educational institutes (one each) as follows: 1) King Mongkut’s Institute of Technology Ladkrabang; 2) Surin Rajabhat University; 3) Phetchaburi Rajabhat University; 4) Chiang Mai Rajabhat University and 5) Uttaradit Rajabhat University.

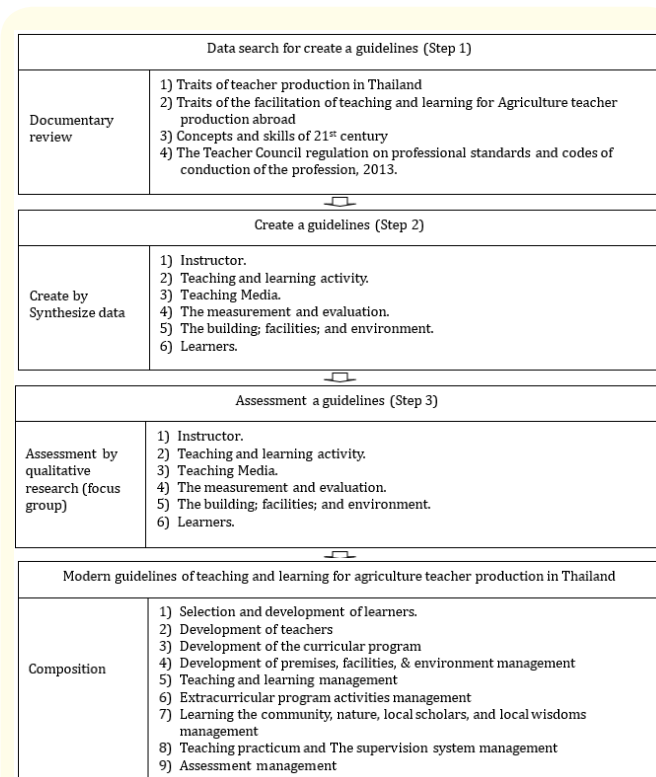


Figure 1: Steps to this study.

Results and Discussion

Results

After the focus group in last step, the results of the study revealed that the modern guidelines of teaching and learning for the production of agriculture teachers comprises of 9 aspects:

Selection and development of learners

They must have the qualifications in accordance with the regulations on profession standards of the Teachers Council and codes of conduct of the profession, 2013 as follows: 1) Must have knowledge in accordance with the professional standards of agricultural teachers; 2) Must have experience in accordance with the professional standards of agricultural teachers; and 3) Must be capable of

performing academic activities for the development of the agricultural teacher's profession, etc.

They must have qualifications in accordance with the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission of Thailand in the following ways: 1) Must be supervised, consulted and advised; 2) Must be prepared to work on graduation; and 3) Must have supervised the dissertation counseling and independent research, etc.

They must have the skills of the 21st century as follows: 1) Must have the ability to reason; 2) Must have the ability to use systematic thinking; and 3) Must have the ability to use judgment, analysis and decision, etc.

They must have the ability to learn. For example: 1) Must have a good pursuit for learning; 2) Must understand the objectives of the course; and 3) Must learn manually, etc.

They must have proficiency in agricultural teaching. For example: 1) Must have a good attitude towards agricultural teachers and professionals; 2) Must have faith in agricultural professionals and teachers and 3) Must have love, compassion, empathy, support, encouragement for students, etc.

They must have the ability to work as follows: 1) Must have the ability to work in cooperation with others creatively; 2) Must have the ability to require thought, action, decision-making and problem-solving in a systematic way; and 3) Must have the ability to clear communication skills, etc.

They must have a good personal performance, such as to: 1) Must have initiative; 2) Must have leadership; and 3) Must have maturity, etc.

Development of the curricular program

It must be operated to promote learners to have qualifications in accordance with the regulations on profession standards of the Teacher Council and code of conduct of the profession, 2013 as follows: 1) Must encourage students to have standard knowledge and professional experience; 2) Must encourage students to have standardized work practices; and 3) Must encourage students to have standards of conduct, etc.

There must be an agreement with the internal quality education assurance system, 2014 of the Office of Higher Education Commission. For example: 1) Must have a main idea of curriculum design, the data used in the development of curriculum and course objectives; 2) The curriculum must be updated according to the progress in the field; and 3) Must have a system and procedures to supervise the implementation of the quality assurance curriculum, etc.

There must be promotion of learners to have skills of the 21st century as follows: 1) Must have the ability to reason; 2) Must have the ability to think systematically; and 3) Must have the ability to use judgment, analysis and decision, etc.

Development of premises, facilities and environment

There must be promotion of learners to have qualifications in accordance with the regulations on profession standards of the Teacher Council and code of conduct of the profession, 2013. For example: 1) Must have encouraging students to have the standard of knowledge and experience of agricultural teachers; 2) Must have encouraging students to have the improved performance standards; and 3) Must have encouraging students to have standards of conduct, etc.

There must be promotion of learners to have qualifications in accordance with the internal quality education assurance system, 2014 of the Office of Higher Education Commission. For example: 1) Must support graduate production, research, academic service to society; preservation of arts and culture; and 2) Must support the administration of educational institutions, etc.

There must be promotion of learners to have skills of the 21st century. For example: 1) Must have support for the students with knowledge in the core subjects; 2) Must encourage students to have the skills to learn and innovate; 3) Must support students with information and technology skills; and 4) Must have encouraged students to have life and work skills, etc.

There must be an adequate and modern classroom/school building divided into groups, such as: 1) Must have a classroom for the ordinary course; 2) Must have classroom for agriculture in particular; and 3) must have a classroom for the training of teachers in agriculture in particular, etc.

There should be sufficient and modern laboratories/farms/greenhouses. For example: 1) Must have agricultural laboratories; 2) Must have a demonstration farm; 3) Must have greenhouse/nursery; and 4) Must have stable animals/animal housing, etc.

There must be adequate and modern facilities for teaching and learning. For example: 1) Must have tools and agricultural equipment; and 2) Must have plants/animals/raw materials in practice/experiment/demonstration, etc.

There must be sufficient and modern facilities to support teaching purposes, such as: 1) Must have a library with virtual learning media; 2) Must have fast internet; and 3) Must have comfort, safety and hygiene, etc.

There must be an appropriate management and teaching environment. For example: 1) Must be hygienic and promote learning; 2) Must be free from pollution and natural disasters; and 3) Must be environmentally friendly to the nearby community, etc.

Teaching and learning management

There must promotion of learners to have qualifications in accordance with the regulations on profession standards of the Teacher Council and codes of conduct of the profession, 2013. For example: 1) Must train students to discipline in agriculture teachers profession; 2) Must train students to develop themselves in agriculture teachers profession; and 3) Must train students to develop personality in agricultural teachers profession, etc.

There must promotion of instructors to have operated in accordance with the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission. For example: 1) Must be assigned to the appropriate teaching subject; 2) Must have a supervised teaching process; and 3) Must be controlling and monitoring the preparation of TQF. 3; and TQF. 4, etc.

There must be promotion of learners to have skills of the 21st century. For example: 1) Must be training students to use reason; 2) Must be training students to have ability to think; and 3) Must be training students to use judgment, analysis and decision, etc.

There must be promotion of instructors for the determination of teaching goals, such as: 1) Must promote thinking and analytical skill; 2) Must promote creativity and interpersonal skills; and 3) Must promote the use of reasoning, etc.

There must be promotion of instructors to conduct activities before the instruction. For example: 1) Must write a lesson plan; 2) Must be a teaching plan; and 3) Must be a hierarchy of learning activities, etc.

There must be defined teaching activities pattern. For example: 1) Must use psychology in teaching; 2) There must be participation in student's learning activities; and 3) Must build a relationship between the content of the lesson and the interest of the learner, etc.

There must be a defined teaching method. For example: 1) Must have introduction of the lesson; 2) Must have a selection of the teaching method; and 3) Must use appropriate technique to teach, etc.

There must be activities after the instruction. For example: 1) Must have review and summary after teaching; 2) Must have daily teaching notes; and 3) Must be a summary of what has been learned, etc.

There must be a defined type of teaching media. For example: 1) Must have usage of modern and interesting media tools; 2) Must use standardized quality media; and 3) Must use media tools of community, etc.

There must be a determination of goals of learning media, such as: 1) To have the ability to reason; 2) To have the ability to think and analyze; and 3) To be able to use judgment, analysis, decision and problem solving, etc.

There must use diverse integrated teaching materials, such as: 1) Must use real media; 2) Must use printed media; and 3) Must use computer, etc.

There must be support of good teaching and learning. For example: 1) There must be enough classrooms; 2) There must be a school farm; and 3) There must be environment conducive to teaching, etc.

Extracurricular program activities management

There must be promotion of learners to have qualifications in accordance with the regulations on profession standards of the Teacher Council and codes of conduct of the profession, 2013. For example: 1) Must promote discipline in the agricultural teachers profession; 2) Must promote self-development of agricultural teachers; and 3) Must promote personality development in the agricultural teacher's profession, etc.

There must be an operation in accordance with the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission. For example: 1) Must be a plan of activities in which learners participates in the development; 2) Must provide knowledge and skills for quality assurance to learners; and 3) Must promote the characteristics of graduates according to the standard of learning outcomes in accordance with the 5 national qualifications standards, etc.

There must be promotion of learners to have skills of the 21st century. For example: 1) Must be encouraged to use reasoning; 2) Must be encouraged to think and analyze; and 3) Must have clear communication, etc.

There must be a goal determination of extracurricular activities. For example: 1) Must promote thinking and the use of analytical skills as a process; 2) Must promote creative interpersonal skills; and 3) Must promote the use of reasoning, etc.

There must be determination of forms of extracurricular activities before learning. For example: 1) Must have a well-written activity plan; 2) Must be prepared for the activities; and 3) Must have a sequence of activities, etc.

There must be a defined format of extracurricular activities. For example: 1) Must use psychological principles in the practice of activities; 2) Must be an activity in which the learners participate; and 3) Must be equal opportunity activities for learners, etc.

There must be a definition of how to practice for extracurricular activities. For example: 1) Must have introduction of the activities; 2) Must have a selection of the activity method; and 3) Must have required practical monitoring techniques, etc.

There must be activities after the extracurricular activities. For example: 1) Must have a review and summary after the practice of activities for learners; 2) Must be a recorded practice of activities; and 3) Must have a summary of the practice of activities, etc.

There must be a defined type of the media used. For example: 1) Must use modern and interesting media tools; 2) Must require the use of standardized quality media; and 3) Must be provided with new media, etc.

There must be determination of the learning goals of media usage. For example: 1) Must have the ability to reason; 2) Must have the ability to think and analyze; and 3) Must be able to use judgment, analysis, decision and problem solving, etc.

There must be use of integrated and diverse of activities practice materials. For example: 1) Must use real media; 2) Must use printed media; and 3) Must use personal media, etc.

There must be things supporting good extracurricular activities practice. For example: 1) Must have a suitable activity location; 2) **Learning about the community, nature, local scholars and local wisdom management**

There must be promotion of learners to have qualifications in accordance with the regulations on profession standards of the Teacher Council and codes of conduct of the profession, 2013. For example: 1) Must have standard knowledge and professional experience; 2) Must be encouraged to have a standard of performance; and 3) Must have practice with standards, etc.

There must be an operation in accordance with the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission. For example: 1) Must be prepared of academic service plan in accordance with the needs of the society; 2) Must be an academic service plan for the benefit of the development of learners, community and society; and 3) Must be a plan for preserving arts and culture, etc.

There must be promotion of learners to have skills of the 21st century. For example: 1) Must be encouraged to use reasoning; 2) Must be encouraged to think and analyze; and 3) Must have clear communication, etc.

There must be a goal determination of learning. For example: 1) Must promote thinking and analytical as a process; 2) Must have creative collaboration with others; and 3) Must have creative thinking, etc.

There must be determination of forms of extracurricular activities before learning. For example: 1) Must have a well-written activity plan; 2) Must be prepared for the activities; and 3) Must have a sequence of activities, etc.

There must be a defined format of learning activities. For example: 1) Must have written a learning plan; 2) Must have prepared

for learning; and 3) Must have an analysis of the learning management, etc.

There must be a defined learning pattern. For example: 1) Must use psychology in learning; 2) Must be involved in the learning of students; and 3) Must be a relationship between learning content and learners interest, etc.

There must be a definition of how to learn. For example: 1) Must have introduction of lesson; 2) Must have selected methods of learning; and 3) Must manage the classroom in case learners have problems, etc.

There must be activities after learning. For example: 1) Must have reviewing and summarizing after learning to students; 2) Must have a learning record; and 3) Must accept the criticism about the learning management, etc.

There must be a definition of the type of media used in learning. For example: 1) Must use of modern and interesting media tools; 2) Must require the use of standardized quality media; and 3) Must use media tools of community, etc.

There must be a determination of the learning goals of media usage. For example: 1) Must have the ability to reason; 2) Must have the ability to analyze; and 3) Must have a good ethics in agriculture teachers, etc.

There must be use of integrated learning media. For example: 1) Must use real media; 2) Must use printed media; and 3) Must use personal media, etc.

There must be things supporting good learning. For example: 1) Must have an appropriated place of learning management; 2) Must have a comfortable place of learning management; and 3) Must have a modern place of learning management, etc.

Teaching practicum and the supervision system management

There must have been compliance in accordance with the regulations on profession standards of the Teacher Council and codes of conduct of the profession, 2013. For example: 1) Must pass the teaching practice in educational institutions according to the educational degree program; 2) Must have professional training during classes; and 3) Must be taught on the subject of agriculture in school, etc.

There must be a supervision system management that must be carried out in accordance with the system of internal quality education assurance system, 2014 of the office of Higher Education. For example: 1) Must supervise the process of teaching practicum and the supervision system; 2) Must learn by doing; and 3) Must have followed and monitored the preparation of TQF 3 and TQF 4, etc.

There must be promotion of learners to have skills of the 21st century. For example: 1) Must be encouraged to use reasoning; 2) Must be encouraged to think and analyze; and 3) Must have clear communication, etc.

Assessment management

There must be an assessment in accordance with the regulations of the Teacher Council based on skills of learners in the 21st century. For example: 1) Must have an evaluation for agriculture teacher's ethics; 2) Must have an evaluation for self-discipline of agriculture teachers; and 3) Must have an evaluation for self-development of agriculture teachers, etc.

There must be an assessment in accordance with the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission. For example: 1) Must have a learning assessment according to qualifications framework; 2) Must have checked the learning assessment of the learner; and 3) Must have a monitoring assessment of teaching management and curriculum (TQF.5, TQF.6 and TQF.7), etc.

There must be an assessment in accordance with skills in the 21st century. For example: 1) Must be an assessment of the reasoning ability being used; 2) Must be an assessment in thinking process ability; and 3) Must be the assessment of analysis ability, and decisions, etc.

There must be a defined type of assessment. For example: 1) Must be selected from the instrument; 2) Must be the principle of use of the assessment; and 3) Must be the determination of the goals of assessment, etc.

There must be a definition of the assessment format. For example: 1) Must be a determinant of the assessment method; 2) Must be reported of the assessment results; and 3) Must be self-evaluated and other people, etc.

There must be criteria for assessment. For example: 1) Must be defined of learners to participate; 2) Must have a clarification of assessment criteria; and 3) Must be a creation of assessment criteria with the participation of learners, etc.

There must be an assessment of profession. For example: 1) Must be an assessment of professional knowledge; 2) Must be an assessment of professional honesty; and 3) Must be an assessment of professional ethics, etc.

There must be an assessment of performance. For example: 1) Must be an assessment of work process; 2) Must be an assessment of performance; and 3) Must be an assessment of management process, etc.

There must be an assessment of personality. For example: 1) Must be an assessment of attitude; 2) Must be an assessment of the ability to reason; and 3) Must be an assessment of creative thinking, etc.

Discussion

Teaching and learning the production of Agriculture teacher's, as well as those of other fields, has laws in which various educational institutes must follow strictly. This includes the regulations on profession standards of the Teacher Council, 2013 and the regulations on codes of conduct of the profession, 2013 of the Teacher Council. The former involves the requirement of derided characteristics and quality for educational profession that the concerned personnel must follow. The latter involves the requirement on the standards of self-practice or appropriate behaviours of concerned personnel in which it is under the supervision of the Teacher Council [4]. The internal quality education assurance system at the higher education level, 2014 is the operation of the Higher Education Commission as an amendment by the National Education Legislation, 2002 and 2010, as well as the Administration Act, the Ministry of Education, 2003. There is a law indicating that the Office of Higher Education Commission and higher education institutes must have the internal quality education assurance system. Therefore, the Office of Higher Education Commission has to establish the internal quality education assurance system. It comprises 3 levels: 1) curricular program; 2) faculty; and 3) higher education institute [5]. Meanwhile, the skill of the 21st century is an idea of the public and private sectors in the United States of America. It aims to develop people to have quality and potential in the society and be

able to cope with the world rapid changes. The skills of the 21st century have the following components: 1) information; media; and technological skills; and 4) life and career skills [6,7].

In addition, this modern guideline also places great emphasis on community involvement in teaching and learning. In line with New South Wales, Australia, where communities play a role in education to students [8]. While agricultural education systems in Georgia focus on brain-based learning; experiential learning; student evaluation; and effective teaching; etc. [9]. Moreover, this modern guidelines in line with Professional Competency Development Model of Ghimire., *et al.* [10] to focus on teaching and learning methods; skills needed before entering job; evaluation methods; needs assessment/program development; etc. While agriculture teacher in Chinese agricultural schools needs development related to curriculum and instruction were lesson plan development; teaching material preparation; skills of lecturing and demonstrating; motivating student to learn; student assessment; and developing students [11-14].

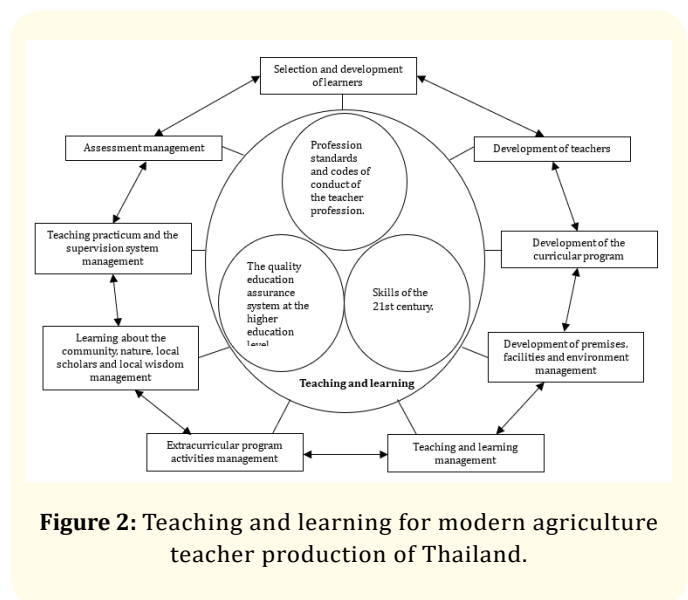


Figure 2: Teaching and learning for modern agriculture teacher production of Thailand.

Conclusion

The modern guidelines of teaching and learning for Thailand comprises 9 aspects: 1) Selection and development of learners; 2) Development of teachers; 3) Development of the curricular program; 4) Development of premises, facilities and environment management; 5) Teaching and learning management; 6) Extracur-

ricular program activities management; 7) Learning about the community, nature, local scholars and local wisdom management; 8) Teaching practicum and the supervision system management; and 9) Assessment management. The teaching and learning must place importance on the following: 1) the Teacher Council's regulations on profession standards and codes of conduct of the profession, 2013; 2) the internal quality education assurance system at the higher education level, 2014 of the Office of Higher Education Commission; and 3) skills of the 21st century.

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