



Research Article

Relationship between Curriculum and Instructional Materials of Non-formal Agricultural Higher Education

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Abstract

The research was to study the conditions of agricultural education of people and the relationship in the management model for non-formal agricultural education in Thailand. The data were collected via in-depth interviews structured with 56 respondents selected via purposive sampling. The results were most of respondents were female and the management model for agricultural education in curriculum and content, the most respondents showed the non-formal agricultural education without certain curriculum and course duration, including self-learning; teaching and learning showed the learning from the agriculture specialists and leaders in the community, obtained the knowledge from real practice; instructional materials showed the learning from real practice, friends' suggestions and conversations; assessment and evaluation showed the evaluation from work's outcome; The relationship of the curriculum and content with education and occupation, the instructional materials with education, the assessment and evaluation with education, the participation with education were statistically significance.

Keywords:

model, management model of education, agricultural education, non-formal agricultural education, higher education in Thailand

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Introduction

Buriram Province comprises of 23 districts and 188 sub-districts. With a population of 1,591,905, Buriram is ranked the 6th province that has the biggest population in Thailand. The income per person per year is very low and is almost in the final ranks of the country. Most of the people do traditional farming in dry and remote areas which were once called “the land of drought”. Education level of the people are as follows: 208,338 people are not educated (34%), primary schools: 152,093 people (24.8%), secondary school: 80,527 people (13.2%), high school: 95,660 people (15.6%), and university: 64,329 people (10.5%) (Provincial Labor Situation, 4th Quarter, 2017). King Rama 9th ideas have been employed to transform drought into assets, and the land of drought into balanced fertility at the present time. However, the growth and development of Buriram, an infamous town, was still on a slow pace due to the limitations of the land’s condition and its natural resources. There were only few places to visit such as archaeological sites and restaurants. In the past 10 years with the collaboration of Buriram people, Buriram has been changed as a famous destination to visit by introducing sports based on the strength of the civilization and Southeastern culture to raise the reputation of Buriram as a tourist center of Khmer civilization and world-standard sports. This is to establish stable economy and sustainably peaceful society and enables Buriram to be on a rapid move nowadays. Even though Buriram is growing rapidly, it still faces many other problems. For examples, farmers keep their traditional farming approaches. The average income per person per year is still low. Urban area is the center of the growth. And infrastructures are not able to support the growth effectively (Kaewkangwan, 2018). Therefore, according to Buriram history, it is obvious that the development in all aspects requires the development of the population to be in accordance with local context, by educating people.

Buriram Rajabhat University as an institute of higher education has a philosophy stating that Buriram Rajabhat University is the university for local development and responsible for producing and developing knowledgeable graduates to continue their career to meet the needs of individual and society. Buriram Rajabhat University’s missions are as follows: 1) produce graduates and create effective educational opportunities according to academic and professional standards, 2) conduct researches, establish knowledge for local development that links research networks, 3) provide academic services and pass on technology to improve and strengthen the community as well as the entrepreneurs to be competitive, 4) maintain cultural heritage and promote the local wisdom, 5) produce and improve efficient teachers and educational personnel, 6) promote, maintain Royal Projects and support the participation in the management of local natural resources and environment. Agricultural education provided by Buriram Rajabhat University aims to produce knowledgeable agricultural graduates to continue their agricultural career and serve the communities and society in accordance with National Education Act 1999, No.

3, 2010 on the education system. There are three types of the education system as follows: 1) Formal education which is the study based on certain conditions of graduation: purposes, methods, curriculum, duration of the course and measurement and evaluation, 2) Non-formal education which is the study based on flexible conditions of graduation: purposes, patterns and methods, duration of the course and measurement and evaluation. The content and curriculum must be appropriate and consistent with the problem conditions and the needs of individuals, and 3) Informal education which is the study in which the learners learn via their self-interest, potential, readiness, and opportunity, and learn from other people, social experiences, circumstances, media, or other sources of knowledge together with various activities (Department of the Non-Formal Education, 2000). Therefore, agricultural education is very important because most of Thai population are engaged in agriculture which includes farming, rice and fruit farming. Thailand also has the greatest number of agricultural workers. This makes the agricultural education important to provide a basis for the population to be able to continue their agricultural careers efficiently and sustainably in accordance with the philosophy of sufficiency economy.

Therefore, the researcher, as an instructor at Faculty of Agriculture Sciences, Buriram Rajabhat University under Office of Higher Education commission, realize the significance of conducting the management model of non-formal agriculture education of Higher Education in Buriram province, Thailand. The study on the management model of agriculture education must be suitable with the context of Buriram province in the aspects of instructors, learners, resources, and local environment today to make the management model of agriculture education suitable and effective to the context in Buriram province. The research objectives aim to examine conditions of non-formal agriculture education of people, and to examine the relationship in the management model for non-formal agriculture education of people in Buriram province, Thailand.

Method

Research General Background

In this study, the researchers applied many concepts from scholars such as 1) Siriwan (2002) from the discussion on “how vocational education in agriculture will help solve the problem of poverty among people in the country” 2) Muangthip (1997) conducted a study on “the conditions of teaching and learning of agricultural subjects of teachers teaching agricultural subjects in Rajabhat Institutes” 3) Srisuwan (1999) conducted a study on “needs of development of fishery class for teachers and students in high vocational certificate level at the 2nd year, major of fishery, Agriculture and Technology College, Department of Vocational Education.” 4) Gantang (2006) conducted a study on “development of model of education at higher education level of local administrative organization in Thailand” 5) Phongkangnanan

(2007) conducting a study on “development of model of non-formal education in fundamental educational institute to promote life-long learning” and 6) Trisorn (2000) conducted a study on “a study on model of non-formal education in next decade”. As mentioned above, the researchers have synthesized the five components of non-formal agricultural education: curriculum and content, teaching and learning, instructional materials, assessment and evaluation, and participation.

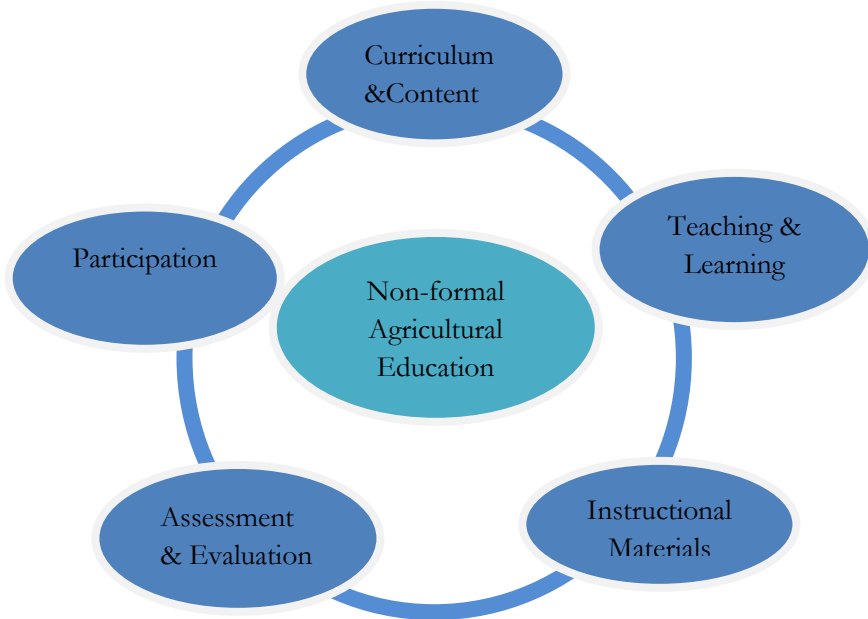


Figure 1.

Non-formal Agricultural Education

Research Sample

In this study, the researchers emphasized the study on the model for managing non-formal agricultural education in Buriram Province. By defining population and sample:

- 56 respondents from purposive sampling: 1) 50 farmers from 23 districts, 2) 4 agricultural specialists who were well-known during 2010-2014, and 3) 2 agricultural entrepreneurs.
- Data collection period was May to October, 2015.

Instrument and Procedures

The researchers conducted the study with these processes:

Step 1: Studied concepts/ theories on high level non-formal agricultural education and related studies. The researchers studied the research, analyzed related documents, and framed research concept.

Step 2: Investigated problems on conditions of non-formal agricultural education at high education level in Buriram by studying problems on conditions of non-formal

agricultural education at high education level from analyzing the data in step 1. After that, a questionnaire was designed to examine opinion on model of non-formal agricultural education in Buriram Rajabhat University. The questionnaire was proved by experts with IOC at 0.84. Then, the data were collected by the researchers ourselves by directing contacting the respondents and conducting structured in-depth interview in May to October 2015. Content analysis was analyzed with statistical program to find frequency, percentage, and correlation.

Step 3: Formed the model of non-formal agricultural education of Buriram Rajabhat University by employing the analyzed data from step 2 by arranging a discussion meeting on the model for managing non-agricultural education with six experts. Opinions from the meeting were concluded and analyzed to be the model for managing non-agricultural education of Buriram Rajabhat University.

Step 4: The model for managing non-formal agricultural education of Buriram Rajabhat University was evaluated by designing the questionnaire to investigate opinions about suitability, concordance, possibility, usefulness of the model by five experts. Thereafter, the evaluation was reviewed to find suitability, concordance, possibility, usefulness in order to improve and amend accordingly to the experts' suggestion. Finally, the model for managing non-formal agricultural education of Buriram Rajabhat University was formed.

Results and Discussion

From the analysis of in-depth interview structured, results of the research can be categorized as followings:

General information of the respondents:

1. Most of the respondents were female (57.6%). They were ordinary citizens (78.6%), had an average age of 41-50 years old (53.6%), and graduated from primary schools (53.6%). They were farmers (82.1%) and earned an income of about 3,000-6,000 baht per month (41.1%).

Table 1.

The Model for Managing Agricultural Education in terms of Curriculum and Content

Content	Number (n=56)	Percentage (%)
1.Study without structured form, curriculum, and time frame to study like self-study by studying the subject matter from direct experiences and daily life experiences	19	33.93
2.Study from oneself, community leader, agricultural seminars provided by organizations like sub-district administrative organization	11	19.64

3.Informal study by learning from one’s skill, interest, and convenience	9	16.07
4.Study from trial-and-error practices	7	12.50
5.Self-study and local and folklore study	3	5.36
6.Self-study from reading, watching television, listening to the radio, discussing with other farmers	2	3.57
7.Study from Royal projects and learning centers	3	5.36
8.Study by exchanging ideas about development in learning center or community	2	3.57
Total	56	100

As it shown in Table 1, the model for managing informal agricultural education in aspects of curriculum and content were the most similarity. It was a dynamic study and there was no certain curriculum and time to learn in the course. The self-study education was the study of knowledge resulting from authentic experience and the experience of daily life. The research results were in line with Chuanchuen (2015) who studied management of non-formal education in schools and stated that non-formal education was a form of learning in which the needs and interests of each individual. Students must learn something useful with their lives whether it is learning by means of force or pursue any interest because the world has changed from an industrial society to an information society. Learning to improve the quality of life is so important and necessary. Adults and children need time to learn more. This is not only a class or work only, but it also takes time to learn at home or after working classes or weekend classes. Thus, informal learning is an important component of lifelong learning. Learning from the internet, learning from a document by a group discussion, learning by watching television news happening naturally, monitoring data from the library or visit the museum with friends and family, all of these are examples of informal education at all. Informal learning is an important way which will help people to learn and understand more about the world of learning and innovation, facilities and it can be recorded as history.

Table 2.
The Model for Managing Agricultural Education in Terms of Teaching and Learning

Content	Number (n=56)	Percentage (%)
1. Learn from experts or scholars, community leaders, academicians who have knowledge and to take action themselves.	30	53.57
2.Learn from the study in learning centers and projects and then implement that knowledge in working.	8	14.29

3. Read the books of agriculture, reliable data on the Internet, website and TV	3	5.36
4. Learn from the local wisdom and discuss with experienced in agriculture	6	10.71
5. Learn from projects such as rural projects, through the media, television, radio, books, expert and other information resources	5	8.93
6. Learn by yourself and develop the integrated farming model	2	3.57
7. Learn from parents, grandparents	2	3.57
Total	56	100

As it shown in Table 2, the model for managing agricultural education in aspects of teaching and learning were the most similar on learning from agricultural experts, scholars in the community or community leaders and academicians with expertise in agricultural and to take action themselves. The research results were consistent with Chankajorn (2008) conducted a research entitled development of guidelines for informal education to promote lifelong learning which found that the guidelines for the management of non-formal education to promote lifelong learning by providing programs and activities for promoting learning, and other factors for promoting learning, such as the provision of learning resources, knowledge management, educational media and technology, development of a learning network and learning from direct experience with implementation. The research results were consistent with Phuengphien (2011) who found that people in 11 Posa Municipalities, Muang Districts, Angthong Province would like to have learning resources in non-formal education that it should provide learning resources in the community and promote local wisdom to play a role in learning immensely.

Table 3.

The Model for Managing Agricultural Education in Terms of Instructional Materials

Content	Number (n=56)	Percentage (%)
1. Learn from actual practice and recommendations from friends.	15	26.79
2. Learn by trial and error by yourself.	12	21.43
3. Learn from the study tour in the various learning centers	6	10.71
4. The eco-tourism opportunities by observations.	5	8.93
5. The use of local knowledge	9	16.07

6.Study of the leaflet, brochures, bulletin, periodicals, magazines, books, and the library.	3	5.36
7.Learn from the masters, specialist, wisdom, local scholars	4	7.14
8.Learn agriculture from media like listening to the radio, watching television, books, journals, newspapers and the Internet.	2	3.57
Total	56	100

As it shown in Table 3, regarding the model for managing agricultural instructional materials, the most respondents were the learning from real practice, friends’ suggestions and making conversations with friends. Normally, the culture of local people in the northeast is that the people are generous and live closely to each other, and all members of the village know each other. So, the key activity of making conversations to exchange experiences in their free time or in the period of community’s traditional activities may be another factor of non-formal learning of the respondents. This is consistent with the study conducted by Trisorn (2000) entitled “a study of the model of non-formal education in the next decade”. The results of the study showed that the key activity to the non-formal learning were from practical learning, an exchange of learning resources that includes a variety of sufficient contents and meet the needs of the learners based on interest, potential, readiness, and limitless opportunities, including mutual communication through conversations in exchanging knowledge of contents and experience skills. Also, this includes the learning via various types of media such as computers, internet, radios, televisions, books, publications, etc.

Table 4.
The Model for Managing Agricultural Education in Terms of Assessment and Evaluation

Content	Number (n=56)	Percentage (%)
1.Evaluate from works	29	51.79
2.Evaluate from experience which leads to innovation and product	5	8.93
3.Evaluate from life and working experience	9	16.07
4.Evaluate from attitude, values, and outcomes of the performance	13	23.21
Total	56	100

As it shown in Table 4, regarding the model for managing agricultural education in terms of assessment and evaluation, the most respondents were the evaluation from outcome of the work which is consistent with the study conducted by Chankajorn (2008) entitled “development of guidelines for informal education to promote lifelong learning”. The study stated that the evaluation of non-formal education is an activity that aims to see the success of practical outcome of the work, so the methods of the evaluation are various based on value, attitudes, innovations and practical outcome, and also represent analysis of the efficiency of individual or professional performance. This is to focus on the improvement instead of accuracy. The evaluation is not just counting or measuring things at a basic level, but it must lead to value. To accomplish this purpose, the expertise and deliberation must be developed to ensure that participatory thinking and action are implemented.

Table 5.

The Model for Managing Agricultural Education in Terms of Participation

Content	Number (n=56)	Percentage (%)
1.The participation of community leaders	3	5.36
2.Attend professional training in agriculture from experts and apply modern technology to integrate with existing wisdom	20	35.71
3.Attend training and study tour on the of the sufficiency economy philosophy and integrated agriculture	13	23.21
4.Learn more about the problem and promote the learning of local wisdom	7	12.5
5.To participate in the exchange of learning with the experts and friends in the group	5	8.93
6.Participate in the community development activities	8	14.29
Total	56	100

As it shown in Table 5, regarding the model for managing agricultural education in terms of participation, the most respondents were the participation in professional agriculture training and implementing modern technology with the existing wisdom. This is consistent with the study conducted by Chankajorn (2008) entitled “development of guidelines for informal education to promote lifelong learning” stating that participatory activities of non-formal education are the activities held in schools and colleges, and also concerned with community development and participation, social activities, street activities and shows.

Table 6.

Relationship on the Model for Managing Agricultural Education with Gender, Age, Education and Occupation

Content	Gender		Age		Education		Occupation	
	R	Sig.	R	Sig.	R	Sig.	R	Sig.
Curriculum and content	-	0.32	0.02	0.83	0.45	0.00**	0.32	0.01**
	0.13							
Teaching and learning	-	0.35	0.07	0.59	0.24	0.07	0.07	0.59
	0.12							
Instructional materials	-	0.09	0.02	0.86	0.42	0.00**	0.21	0.10
	0.22							
Assessment and Evaluation	-	0.70	0.12	0.36	0.42	0.00**	0.17	0.19
	0.05							
Participation	-	0.39	-	0.33	0.61	0.00**	0.26	0.04*
	0.11		0.13					
Total	-	0.25	-	0.10	0.63	0.00**	0.35	0.00**
	0.15		0.22					

Note * The relationship is statistically significant at the level 0.05.

** The relationship is statistically significant at the level 0.01.

As it shown in Table 6, the relationship of the curriculum and content with education and occupation was statistically significant at a level of 0.01. In terms of the instructional materials with education, the relationship was statistically significant at a level of 0.01. In terms of assessment and evaluation and education, the relationship was statistically significant at a level of 0.01. And in terms of participation with education, the relationship was statistically significant at a level of 0.01. In overall, the education is related to all aspects and consistent with Ngourungsi (2016) stating in her study entitled “education and sustainable development” that education is a tool for sustainable development of the country and is a system educating and encouraging people to gain knowledge, experiences, skills and good attitudes in physical aspect and attitudes outside the classroom by themselves that help in keeping pace with the changing world. Moreover, education has a direct effect on the development of the country in the aspect of producing morally good, knowledgeable and skilful people for continuing their careers as well as being good members of democratic governance.

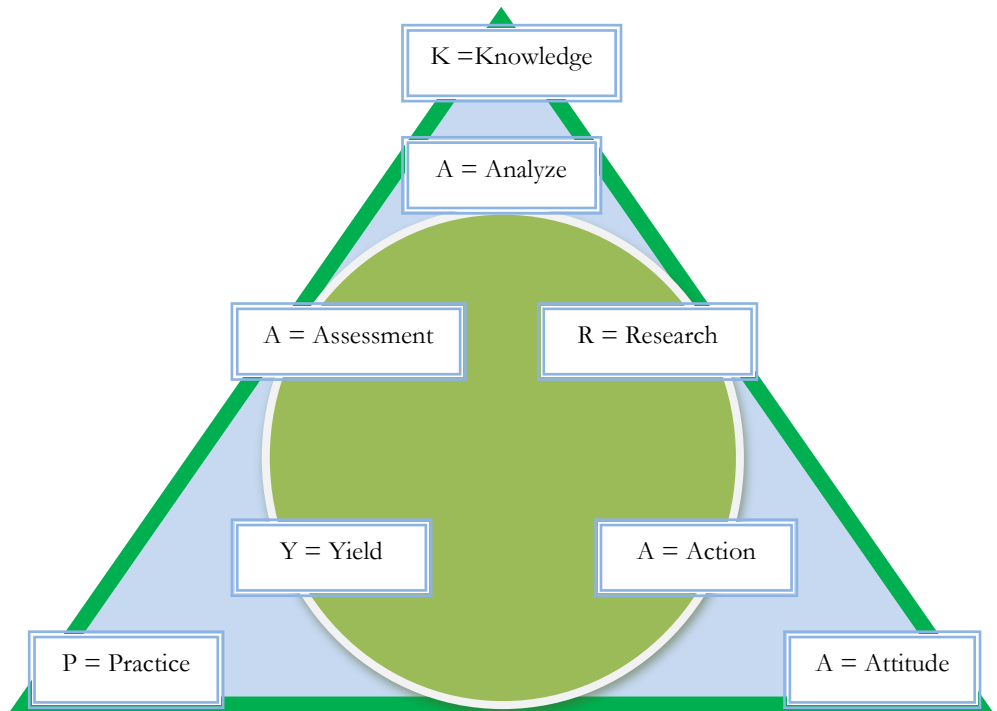


Figure 2.

New Model of Managing Non-formal Agricultural Education of Higher Education Thailand

Discussion and Conclusion

Most of the respondents were female (57.6%). They were ordinary citizens (78.6%), had an average age of 41-50 years old (53.6%), and graduated from primary schools (53.6%). They were farmers (82.1%) and earned an income of about 3,000-6,000 baht per month (41.1%). Regarding the model for managing agricultural education in terms of curriculum and content, the most respondents were the non-formal education without certain curriculum and duration of the course, including self-learning through real experiences in daily life (33.93%). It was consistent with Chuanchuen (2015) conducted a research entitled management of non-formal education in schools that non-formal education is a form of learning that depended on the needs and interests of each individual. Students had to learn things that were useful to their life. In term of teaching and learning, the most respondents were the learning from the intellectuals in the communities or community leaders and the specialists, and taking the knowledge obtained from those intellectuals to real practice (53.57%), In accordance with the study of Musika et al., (2018), Satiansiriwivat, et al., (2016), found that the success of teaching and learning of agricultural education, in addition to teaching and learning in the curriculum, still requires learning from experiences training and scholar people in the community as an integrated way of learning. Moreover, beside the practicing of themselves is most

important to gain of the successful. (Imsuwan, 2001 & Pounsuk, 2017), in term of instructional materials, the most respondents were the learning from real practice, friends' suggestions and having conversations with friends (26.79%), it was consistent with Trisor (2000) conducted a study entitled a study of the model of non-formal education in the next decade, it has found that the important activities in the learning of non-formal education come from practical learning, there are the exchanges of learning from learning resources that cover a wide range of content. It was the needs of learners based on their interests, potential, readiness and opportunities without restriction and to exchange knowledge, skills and experience to each other. There is also learning through various types of technology such as computers, internet, radio, television, books, publications, etc., in term of assessment and evaluation, the most respondents were the evaluation of work's outcome (51.79%), it was consistent with Chankajorn (2008) entitled "development of guidelines for informal education to promote lifelong learning". The study stated that the evaluation of non-formal education is an activity that aims to see the success of practical outcome of the work, so the methods of the evaluation are various based on value, attitudes, innovations and practical outcome, and also represent analysis of the efficiency of individual or professional performance.

The results of the relationships in establishing the model for managing non-formal agricultural education in various aspects revealed that the relationship of the curriculum and content with education and occupation was statistically significant at a level of 0.01. In terms of the instructional materials with education, the relationship was statistically significant at a level of 0.01. In terms of assessment and evaluation with education, the relationship was statistically significant at a level of 0.01. And in terms of participation with education, the relationship was statistically significant at a level of 0.01. The education is significantly related to curriculum and course contents, teaching and learning materials, measurement and evaluation, including participation in the model for managing non-formal agricultural education. Therefore, it can be seen that education is very important; especially the majority of the population in Buriram province were lower education (34%) and graduated from primary level (53.6%). It can be said that there is a large number of population lack basic knowledge, ability and skills in their occupations, and they cannot be able to think, analyze, synthesize, exchange knowledge, and develop themselves to other occupations that most of the farmers in Buriram province still work in traditional agriculture and it affects to the average income per person is still low (Kaewkangwan, 2018).

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