

A Century of Development in Agricultural Education: The Lesson Learned and Implications for Thai Schools

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ABSTRACT

Past development and present status of school *agricultural education* in Thailand were reviewed, focusing on the current situation within the context of the on-going reform movements in Thailand. Research objectives were: 1) to review historical development and status of basic agricultural education in Thailand, and 2) to elicit exemplary cases illustrating good practices of agricultural education in schools, and to determine the success factors.

Documentary analysis was first conducted to obtain an overview of past and present prospects of school agricultural education. Case studies of 10 primary and secondary schools were later conducted to illustrate the current status. Review of selected cases from available sources provided supplementary data. Finally, reflection accounts were secured from a panel of opinion leaders in agricultural education and related areas.

The findings were as follows:

1. Four periods of development in school agricultural education were identified. The year 1898, following the first educational reform, marked the beginning of formal agricultural education. Evolved over time, several concepts of relevant education in agriculture were implemented, and efforts were undertaken to vitalize agricultural program in school. Exemplary cases of success had been rare, however.
2. From 12 case studies presented in this report, 9 cases were selected from actual field data and 3 from available sources. These were classified as *general* and *exemplary* cases, respectively.
3. Key factors were identified for relevant agricultural education: school readiness, community support, and external inputs.

Based on the lesson learned, recommendations were provided for relevant agricultural education in school to meet the changing context.

Key words: agricultural education, school agriculture, basic education

INTRODUCTION

Agriculture worldwide is in a transitional period, rapidly moving from the age of post-green revolution to bio-economic age. Progressive changes on biological technology, increasing pressure on environmental problems, and more competitive international trade, altogether have a major impact on the existing agricultural system of countries throughout the world. New paradigm in agricultural development is evident, with expectation of multi-functional agriculture. To keep pace with rapid changes in agriculture, agricultural education needs to be redefined and revolutionized (Hazelman, 2002).

Agriculture remains a significant part of Thai culture, as well as a core component of national economy. Agricultural development has always been the focus of National Social and Economic Development Plans. The green revolution, streaming to Thailand during the 1960s, rapidly changed the face of Thai agriculture, from traditional subsistent farming to market-oriented agriculture. Agricultural education has since been instrumental for the country's agricultural development to that direction.

The lesson learned from the 1997 economic crisis in Thailand stimulated a need for critical review of the country's direction in agriculture. The national agricultural development plan (the years 2,002-2,006) targeted on a “*dual approach*” to Thai agriculture: competitive market-oriented agriculture on one side, and subsistent “*sufficient agriculture*” for small-holding farmers, on the other (Ministry of Agriculture, 2,002). Lindsey Falvey, a regional expert on agricultural development, noted that the

future of Thai agriculture depends on its quality of education, general as well as agricultural education (Falvey, 2,000). Agricultural education must therefore be re-oriented to serve the renewed direction of Thai agriculture.

While holistic educational reform is underway, there is a need to examine the total system of Thai agricultural education. The Thailand Research Fund (TRF) initiated a countrywide study entitled “**A Critical Review: Status and Prospects of Agricultural Education in Thailand**” The study covers three levels of agricultural education, namely, *basic education, vocational education, and higher education*. The aim of the project was to pinpoint on current status, upon which strategic measures will be identified for future direction of Thai agricultural education. This paper presents findings on selected aspects of agricultural education at basic level.

As the new concept of “*school for life*” is encouraged (Wilson, 2001), it is imperative that basic education must be relevant. Agricultural educators noted that the young generation of today has a remote perception of agriculture as a way of life in the Thai culture. Well-managed and relevant agricultural education can foster awareness and positive thinking on agriculture, which is a significant component of Thai culture.

This paper focuses on agricultural education in Thai primary and secondary schools. The first part of the findings presents an overview of past developments. Case studies are then presented to reveal current prospects of agricultural education in schools. The paper is concluded with recommendations for relevant agricultural education in the Thai schools.

OBJECTIVES

Objectives of this study were:

1. To review historical development and status of basic agricultural education in Thailand.
2. To elicit exemplary cases illustrating good practices of agricultural education in schools, and to determine the success factors.

METHODOLOGY

As part of the overall research project mentioned earlier, this study was conducted in three consecutive steps. These are documentary analysis, empirical analysis, and reflective accounts from opinion leaders.

1. Documentary analysis

Documents on past developments of agricultural education were reviewed. The documents consisted of various sources of information: policy and plans issued by the government, historical accounts, research reports, philosophical and concept papers, secondary sources of data, and international documents available on internet. Documents on the current prospects of agricultural education were also reviewed. Content analysis was performed on the data.

2. Empirical analysis: case study of schools

2.1 Selection of cases. Ten case studies of primary and secondary schools were conducted. The cases were purposively selected based on the approach of “*multi-case, multi-site*” to represent the following diversified contexts as much as possible:

- 1) level of school: *primary, secondary*
- 2) size of school: *small, medium, large*

3) administrative affiliation: *Ministry of Education, Ministry of Interior(local administrative organizations)*

4) community background: *urban, rural; farm, non-farm*

5) status of agriculture program (*typical, good, neglected*)

6) regions (*north, north-east, central, western*)

2.2 Field data collection. The researchers collected data in the case studies, using the following multi-methods approach:

1) In-depth interviews of teachers, administrators, parents and community members, local wisdom in agriculture, and educational researchers.

2) On-site observation of agricultural activities in schools. Documents on curricular and agriculture programs were also collected.

3) Individual as well as group interviews of students were conducted.

Triangulation of methods provided validity check for each case study. A total of 681 informants provided data for the case analysis. (Table 1)

Additional cases were reviewed from available information on reform of learning process (the ONEC published materials), supplemented with in-depth interviews of organizations/persons involved.

3. Reflective accounts from opinion leaders

A panel of 39 opinion leaders was conducted to provide reflections to preliminary research findings on agricultural education at all levels. The panel was selected from all parties concerned: agricultural educators, local wisdom teachers, agricultural business, and government as well as non-government leaders

Table 1 Sources of field data and methods of data collection for 10 school cases.

Sources of data	Number of subjects	Methods of data collection
<ul style="list-style-type: none"> School administrators and agriculture teachers 	91	<ul style="list-style-type: none"> In-depth interview Small-group open forum
<ul style="list-style-type: none"> Agriculture student teachers (in and out-of selected cases) 	64	<ul style="list-style-type: none"> Opinion survey with questionnaires
<ul style="list-style-type: none"> Students (Last year of primary and secondary levels) 	511	<ul style="list-style-type: none"> Reflective accounts Group and individual interviews Informal observation and conversation
<ul style="list-style-type: none"> Local leaders and parents 	15 (3 sites)	<ul style="list-style-type: none"> Group and individual interviews
<ul style="list-style-type: none"> School agricultural activities 	-	<ul style="list-style-type: none"> Documents: school curriculum, project, teaching plan On-site observation
Total	681	

on agricultural development.

FINDINGS

Basic education in agriculture: a historical profile

Historical profile of school agricultural education, over the 100 years of development, can be briefly summarized as follows:

1. The formative period: school gardening and the needs for agriculture teachers (1898-1960)

Following the first educational reform during the reign of King Rama the Fifth, the Primary Education Act of 1898 was enacted, mandating compulsory education at primary level. In addition to education for literacy, the concept of “*school gardening*” was built into primary curriculum with

the purpose of orienting students with agricultural knowledge and practices as a way of life.

Early fore founders of agricultural education saw the urgent need for good agriculture teachers to carry out agricultural education in primary schools. With political supports, a few special schools were set up for preparation of well-trained agriculture teachers to serve primary schools. Such attempts were not of much success and the teacher training schools were ceased only a decade after.

2. The period of agricultural education for the green revolution (1960-1978)

With the influx of green revolution, a major breakthrough in the Asian region during the early 1960s, agricultural education in Thailand received significant supports, especially at higher levels.

At basic level, agriculture was included as

“*practical arts education*” in primary and secondary schools. Innovative ideas for agriculture programs, successful in the United States, were put on trial in Thai schools. Among the most prominent is the concept of “*comprehensive school*” in which general education and vocational education is offered as alternatives for students in secondary schools. Implemented in a different context from the original model, such concept and others were far from being successful in Thailand.

3. The booming period of vocational agriculture (1978-1985)

With the second educational reform during 1975-1978, curricular structure for basic education was changed. Influenced partly from the American Model of school vocational education, a concept of “*Career Development Continuum*” was employed (Figure 1). From 1978 up to the present transitional period, agriculture has been part of the subject area

called “*Work Experience*”, aiming for integrated learning, especially at primary level.

Meanwhile, the concept of comprehensive education was revived. In 1981, vocational agriculture was offered at upper secondary level as an alternative program to the mainstream academic track. With equivalent curricular to those offered in agriculture colleges, students received vocational diploma when completed, certifying them to enter the workplace. This vocational program was rapidly widespread during a short period when manpower demand for agricultural officials was high. Later, with decreasing demand of manpower in agriculture, and with inadequate supports for relevant vocational education, the program gradually came to an end.

4. The adaptive period (2001-)

Under the latest educational reform, mandated by the 1999 National Education Act, decentralized policy provides opportunity for actual development

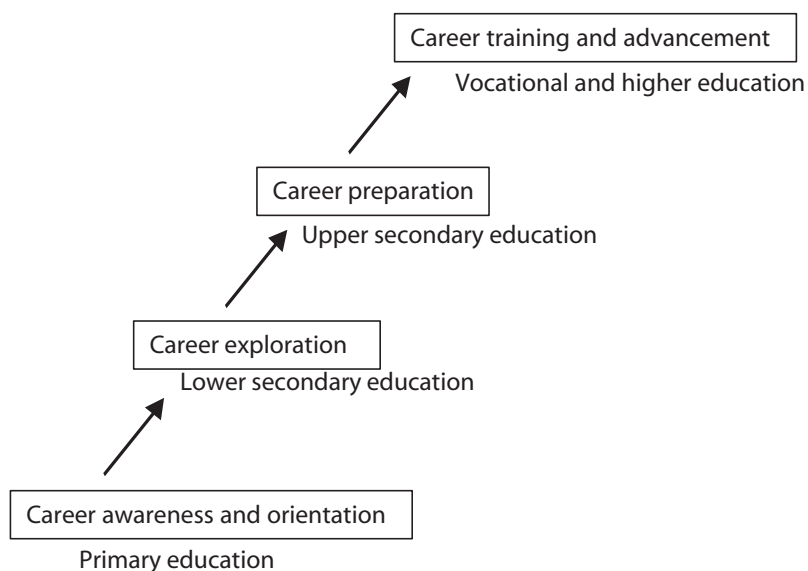


Figure 1 Vocational education as “*Career Development Continuum*”.

Source: Adapted from *American Industrial Arts Education* (cited in Udompoat, 2000)

of school-based curriculum. Under the present *basic curriculum (2001)*, subject matters are formed into 8 groups, with basic academic subjects singled out, hence the criticism of “returning-to-the basics”. Agriculture is now blended under the subject group “*Career and Technology-Related Education*”. (Figure 2). Integration of subject matters is once again hopeful through the “*learner-centered*” approach. During this “*paradigm shift*”, teaching of agriculture needs a lot of adjustments, in terms of content as well as learning process

Figure 3 sums up evolutions of basic education in agriculture over a century. The historical accounts portray a profile of unsuccessful attempts, due to disconnected policy implementations and negative value attached to agriculture. School agricultural education has been a subject of criticism of being “*irrelevant*”.

Case studies of the present situation

During the time of data collection, basic education was in a transitional period from the 1978 curriculum to the 2001 curriculum. From field data as well as supplementary reviews, 12 cases were selected. Four were reported as general cases of typical agricultural education found in schools. Eight exemplary cases were selected to illustrate “*good practices*” of agricultural education.

The 12 cases are described as follows:

1. General cases

Characteristics of school agricultural education in general cases were corresponding to what described in past research:

- A neglected subject, taught by teacher mostly with meager interest and background in agriculture, especially at primary level.
- Insufficient supports of learning resources necessary for agricultural hands-on experiences. Agriculture is often taught as a “dry” subject matter,

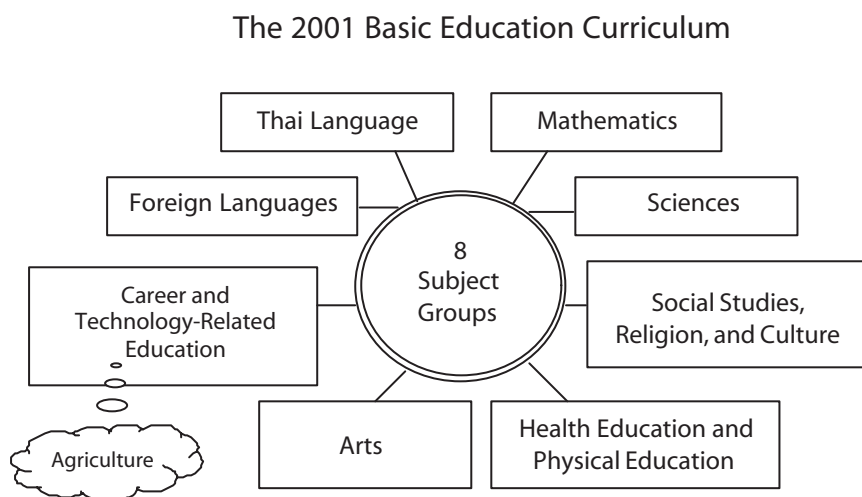


Figure 2 “*Agriculture*” as part of school-based curriculum.

Source: Derived from *Education in Thailand 2002/2003* (ONEC, 2003a)

based primarily on a textbook. Irrelevant content and practices are common, involving similar routines of tasks, unstimulating for students.

- With regards to outdoor activities such as gardening, primary students are more favorable to agricultural learning than secondary students.

- With a trend moving toward more emphasis on academics (*return-to-the basics*), agriculture teachers found it more difficult to keep agriculture as a decent subject. At primary level, time allocated for agriculture is insufficient for teachers to plan a lesson on complete cycle of agricultural practice such as vegetable growing. For secondary level, more importance is given to the subject matter on computer technology, in place of the former subject matter on work experience.

- During this period of adaptation to the new curriculum, most agriculture teachers find it

difficult to “mix and match” agriculture content and activities into other related vocational subject matter. As a solution, teachers are opted to relying on textbooks readily available on the market. Analysis of such textbooks reveals that subject matter and content provided in such learning material do not stimulate the learner-centered approach and the integration of subject matter.

2. Exemplary cases

Eight exemplary cases were selected and grouped under the following categories.

2.1 Cases of innovative learning through agriculture-based integrated curriculum

- *Small-scale integrated farming.* In this small-to-medium school, active agriculture teacher and supportive school administrator teamed up to build agriculture programs with diversified production activities. School board and local wisdom teachers

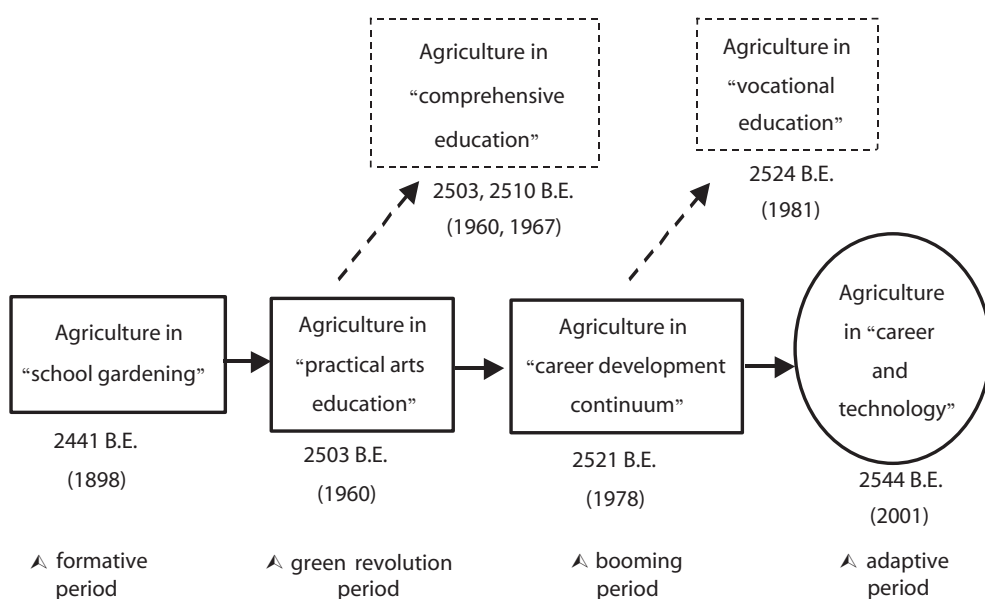


Figure 3 Evolving concepts of basic education in agriculture over a century of development.

actively engaged in management of agricultural resources and learning activities. School co-ops and marketing activities added the essence to this model of agricultural education.

- *Agriculture and environmental education.* Through local-based curriculum, agriculture and environmental education are well integrated. Real-life experiences and local wisdom teachers provided lively learning resources for primary students. As a case in point is a curriculum on “*Rice Field Ecology*” initiated by Burapa (1998), a master teacher.

- *Agriculture for life.* Under the whole-school reform, innovative learning process was achieved through local-based curriculum, using agriculture as the context for learning. Stimulating and thought-provoking learning units were implemented successfully for all class levels in this primary school. (ONEC, 2003b)

2.2 Cases of agriculture for the socially or economically disadvantaged learners

- *Agriculture for school lunch program.* Initiated by Her Royal Highness Princess Maha Chakri Sirindhorn in 1980, this prominent program aims for school children in remote areas. Objective of the program is to provide agricultural knowledge for students, and at the same time to help reduce malnutrition through school lunch (Viravathana, 2003). It is a noted case of multi-functional agricultural education in which educational and social functions are integrated.

- *Agriculture for welfare education.* Socially and culturally disadvantaged students need relevant education in special schools. Agriculture can serve as a good teaching tool to foster desirable habits in students, a *food bank* for school meals, and at the

same time providing career orientation.

2.3 Cases of external supports for sustainable agriculture program in school

- *Researcher as mentor.* In this case, a team of educational researchers initiated a participatory action research in primary schools to develop local-based curriculum. Students as well as teachers benefited from the learning experiences in which the researchers working hand-in-hand as mentor. (Kajornsinsin, 2003)

- *Creating network of cooperation.* This case of small-to-medium school is illustrative of cooperation between school, educational institution in agriculture, and agricultural organization to provide agricultural learning resources. Slowly, a network of cooperation was created and sustainability of agriculture program could be expected.

- *Supporter and stimulator.* This large secondary school is financially supported in part by an influential politician with attentiveness. Consequently, agricultural learning resources are well attended to by agriculture teachers and school administrator.

From the selected case studies, key factors for relevant agricultural education are identified (Figure 4):

1) School readiness is vital for good agriculture program. School administrator with a strong leadership can take initiative for relevant and innovative program in agriculture, a ground for which teachers can actively follow through. Administrator and teachers must share the same concept that agriculture is a *mean* not and end of learning. A balance of learning target and agricultural output must be maintained. For secondary level,

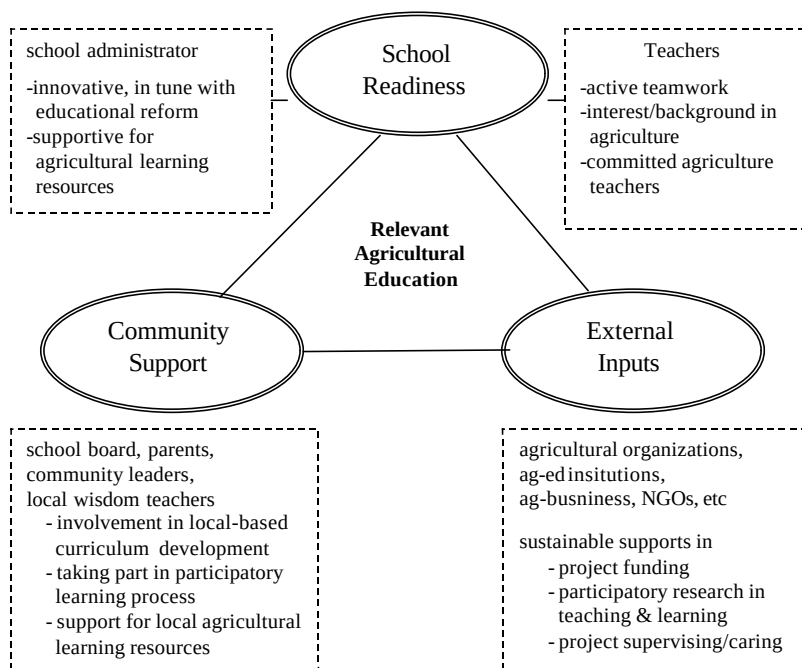


Figure 4 Key factors for relevant agricultural education at basic level.

active agriculture teacher is a key factor to successful program.

2) Community support is important for local-based agricultural education to be most relevant to the community. School board members, parents, community leaders, and local wisdom teachers can actively engaged in participatory curriculum development and real-life learning activities. Community support for agricultural learning resources are also necessary.

3) External inputs help to stimulate and sustain agriculture program in school. Inputs for good agricultural program may come from different parties. For sustainable program in agriculture, support in knowledge and advice is as necessary as financial support. Moreover, during the time of reform, teachers need a long-term learning support

from external experts, in such a manner as *amicable supervision* (Amornvivat, 2002).

IMPLICATIONS

With the changing needs of today's context, agricultural education at all levels need to be redirected, becoming a multi-functional discipline and serving a broader context of community development (Hazelman, 2002). The followings are some implications for basic education agriculture in Thailand.

1. The selected cases illustrate that *multi-functional agricultural education* is appropriate for contemporary basic education. To be more *relevant*, agricultural education needs to be diversified in accordance with varying school and community



Figure 5-6 A small-scale integrated farming, with active learning activities, for primary school children in Chiangrai province.



Figure 7 Agricultural and environmental education provides knowledge and awareness through relevant activities for primary school children in Nakhon Pathom province.



Figure 8 Well-attended learning resources provide meaningful agricultural experiences for secondary school children in Suphanburi province.

contexts.

2. Under the on-going learning reform, the time is right for agricultural education to be modified. Recommendations are:

2.1) Agricultural education should be regarded as a tool for learning of good habits as well as awareness in agriculture and environment.

Therefore, instruction should be process-oriented rather than product-oriented in all class levels.

2.2) The new curriculum structure calls for interrelation of different subject matters. Therefore, agricultural education should be re-oriented toward integration. Innovative courses, units of learning, and activities should be explored, such as:

- *Agriculture in every day's life*

Some suggested courses/units of learning are:

- agriculture and environmental education
- agriculture and cultural education
- agriculture and consumer education
- agriculture in business education
- agriculture in urban life
- agriculture and economics
- agriculture in service education

In addition, agricultural education for special target group should be maintained. Further supports should be rendered to good programs, specifically *agriculture for school lunch program*, and *agriculture for welfare education*.

- *Agriscience*

An interdisciplinary nature of agricultural science and basic science can be built into a selective university-preparation program for higher secondary students. As demand is high for quality input of students into colleges of agriculture, a joint program between local university and school is possible.

3. Relevant agricultural education needs continuous supports. Therefore, model schools in agricultural education should be initiated. A network of schools, community, and colleges of agriculture of regional universities can be created for sustainable program in agricultural education. Program preparation and training of agriculture teachers are examples of cooperative activities, yielding mutual benefits through model school network.

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