

PROGRAM MODEL FOR SECONDARY AGRICULTURAL EDUCATION IN THAILAND

Prawat Wettayaprasit, Doctoral Graduate

Robert J. Birkenholz, Associate Professor

University of Missouri-Columbia

Abstract

Agricultural educators in Thailand were surveyed to ascertain the importance of program goals, basic principles, and program standards. Responses were collected from 182 schools that offered programs of secondary agricultural education. Twenty-one goal statements, ten basic principle statements, and forty program standard statements received mean ratings of average importance or above. A conceptual model was developed to reflect the goals, basic principles, and program standards that were important for secondary agricultural education in Thailand. The program model was constructed as a guide for future program development and evaluation efforts. Properly implemented, the program model should be an effective tool to improve secondary agricultural education in Thailand.

Agricultural education programs in Thailand were first developed in 1904 (Kantesevi, 1982). The primary objective of agricultural education in Thailand during the early years focused on increasing agricultural production. In 1921, the Compulsory Primary Education Act stipulated that agricultural education be included in the general education component of the primary education system in Thailand. In addition to Thai language and science instruction, courses in animal husbandry and plant culture were offered with field practice as an integral part of the curriculum. Although there is a long record of agricultural education in primary and secondary schools in Thailand, the structure and purpose of programs at the secondary level varied widely throughout the country.

According to UNESCO (1971), several problems were identified in agricultural education in Thailand. Agriculture courses were not adequately directed toward the preparation of entry and mid-level agriculturalists. Tesna (1968) also reported that agricultural education programs in Thailand did not provide the knowledge and skills needed to prepare students for careers in farming. Teachers were found to be ill-prepared, which

resulted in poor quality instruction. Curriculum planning efforts had also overlooked the effects of geographic and economic differences within Thailand.

A review of the literature failed to reveal a model for secondary agricultural education programs in Thailand. Such a model was deemed necessary to communicate the philosophical foundation for secondary agricultural education programs in Thailand. A conceptual model was needed to communicate the philosophical bases for secondary agricultural programs in Thailand.

A well-conceived philosophy of agricultural education should accommodate the need for agriculture programs to "adjust and adapt to change in the environment in which they function" (Birkenholz, 1986, p. 16). Therefore, the problem for this study was to identify the goals, basic principles, and program standards as elements to be included in a conceptual model for secondary programs of agricultural education in Thailand.

Purpose and Research Questions

The primary purpose of this study was to develop a program model for secondary agricultural education programs in Thailand. This study was designed to answer the following research questions:

1. What are the goals of secondary agricultural education programs in Thailand?
2. What are the basic principles that should guide the development of secondary agricultural education in Thailand?
3. What are the program standards for secondary agricultural education in Thailand?
4. How can the goals, principles, and program standards of secondary agricultural education in Thailand be illustrated in the form of a conceptual model?

Methodology

Research Design

This study was descriptive in nature. The research effort assessed the perceptions of head secondary agriculture teachers regarding the goals, basic principles, and program standards that undergird secondary agricultural education in Thailand. The dependent variables were responses to statements relating to goals, basic principles, and program standards that were included in the data collection instrument.

Population and Sample

The population for this study included all head secondary agriculture teachers in government-sponsored schools in Thailand during the 1990-91 school term. A list of all secondary schools in Thailand was obtained from the Secondary School Directory 1990 (Department of Secondary Education, Ministry of Education, 1990). There were 888 secondary schools listed in the directory during the 1990-1991 school term. Data were not

available regarding the number of secondary schools in Thailand that offered agricultural education programs. According to Krejcie and Morgan (1970), a sample size of 269 was needed to represent a population of 888. The population was over-sampled by 50 percent in anticipation of a low response rate. Survey instruments were mailed to head agriculture teachers in 404 randomly selected secondary schools in Thailand to provide the data needed to answer the research questions.

Instrumentation

The data collection instrument consisted of two major sections. The first section assessed agriculture teacher perceptions of the importance of goals, basic principles, and program standards which undergird secondary agricultural education programs in Thailand. The second section was comprised of items related to the demographic characteristics of the respondents.

The data collection instrument was validated by a panel of University of Missouri faculty who had experience with secondary education programs in Thailand and were not included in the population frame. Instrument reliability was estimated following data collection by calculating a Cronbach's coefficient alpha. The reliability for the overall instrument was an alpha = .88. The instrument was pilot tested in a graduate course in agricultural education and with selected international students at the University of Missouri-Columbia during the Fall Semester, 1991.

Results

Data collection instruments were received from 290 secondary schools for a 71.7 percent response rate. Of the 290 schools that responded, 182 (62.7%) reported having a secondary agricultural education program. The respondents averaged 37.1 years of age. There was an average of 1,729 students enrolled in the secondary schools that had agricultural education programs. There was an average of 178 students enrolled in each

secondary agricultural education program and 79 FFT (Future Farmers of Thailand) members in each school. Most teacher respondents reported having 11-15 years of teaching experience.

The first research question was designed to ascertain respondent perceptions of the goals of secondary agricultural programs in Thailand. The respondents used a six-point Likert-type response scale to rate their perception of the importance of each statement. Twenty-four statements were used to assess the goals of secondary agricultural education programs in Thailand. Importance means and standard deviations for the goal statements are reported in Table 1. There were 21 goal statements that were rated in the average importance category or above, and received mean ratings above 3.00.

Means and standard deviations calculated for the importance of the basic principle statements are reported in Table 2. Each of the ten statements used to evaluate the basic principles of agricultural education programs received importance mean ratings above the 3.00 level. Table 3 presents the means and standard deviations for the 41 program standard statements. Forty of the statements received mean importance ratings above the 3.00 level.

Development of the Program Model

The conceptual model presented in Figure 1 illustrates a philosophic foundation for secondary agricultural education programs in Thailand. The model includes goals, basic principles, and program standards which received importance means above the 3.00 level.

Goals

The goals of secondary agricultural education

programs in Thailand were to: prepare students for careers in agriculture; serve all populations; emphasize student development; provide accurate information that meets the needs of agricultural employers; encourage cooperation among students; provide classroom and laboratory instruction; enhance leadership and personal development; and, encourage student experience programs.

Principles

The basic principles consisted of: enhancing democratic participation among students; embracing a pragmatic orientation and values development; responding to change through flexibility and continuity; encouraging decision-making through problem solving; including experience-centered student learning activities; addressing individual needs and social needs; emphasizing agriculture resource management; and enhancing an awareness of the interrelationship of agriculture.

Program Standards

Program standards were identified in the major areas of: instructional planning and organization; vocational student organization; qualified instructional personnel; safety training and practice; equipment and supplies; program advisory committee and community relationship; coordination activities; instructional facilities; instructional material utilization; enrollment and student/teacher ratio; and, vocational student accounting and reports.

Conclusions & Recommendations

The purpose of this study was to develop a program model for secondary agricultural education programs in Thailand. Respondents rated a majority of the goals statements above the

Table 1. Importance of Goal Statements as Perceived by Head Secondary Agriculture Teachers in Thailand

| Goal Statements | \bar{X} | SD |
|--|-------------------|------|
| Prepare students for careers in agriculture | 3.45 ^a | 1.20 |
| Provide instruction about agriculture for all secondary school students | 2.84 | 1.39 |
| Serve all populations including: | | |
| a. academically talented students | 3.51 | 1.11 |
| b. academically disadvantaged students | 3.65 | 1.22 |
| c. male students | 3.46 | 1.25 |
| d. female students | 2.92 | 1.21 |
| e. rural students | 3.72 | 1.30 |
| f. urban students | 2.66 | 1.25 |
| g. low-income students | 3.72 | 1.31 |
| Emphasize student development of: | | |
| a. intellectual skills | 3.90 | 1.04 |
| b. social skills | 3.71 | 1.02 |
| c. interpersonal skills | 3.94 | 0.89 |
| d. leadership skills | 4.23 | 0.90 |
| e. communication skills | 3.52 | 1.04 |
| Provide accurate information that meets the needs of agricultural employers | 3.58 | 1.13 |
| Provide instruction about: | | |
| a. entrepreneurship | 3.97 | 1.03 |
| b. free enterprise | 3.57 | 1.12 |
| c. creativity | 4.03 | 0.96 |
| d. friendly competition | 3.56 | 0.98 |
| Encourage cooperation among students | 4.29 | 0.82 |
| Provide: | | |
| a. classroom instruction | 3.84 | 0.95 |
| b. laboratory instruction | 4.15 | 1.04 |
| Provide a student organization for leadership development of agriculture students | 4.27 | 0.77 |
| Encourage development of student experience programs which are supervised by a secondary agriculture teacher | 4.17 | 0.91 |

^aScale values were coded: 0 = Not important; 1 = Somewhat important; 2 = Below average importance; 3 = Average importance; 4 = Above average importance; and 5 = Utmost importance.

Table 2. Importance of Basic Principle Statements as Perceived by Head Secondary Agriculture Teachers in Thailand

| Basic Principle Statements | \bar{X} | SD |
|---|-------------------|-------|
| Enhance democratic participation among students | 4.13 ^a | 0.084 |
| Embrace: | | |
| a. a pragmatic orientation | 4.46 | 0.790 |
| b. values development | 3.87 | 0.890 |
| Respond to change through flexibility and continuity | 3.64 | 0.950 |
| Include experience-centered student learning activities | 3.96 | 0.940 |
| Address: | | |
| a. individual needs | 3.71 | 0.870 |
| b. social needs | 3.84 | 0.970 |
| Emphasize agriculture resource management | 4.05 | 0.910 |
| Enhance an awareness of the interrelationship of agriculture with other academic subjects | 4.11 | 0.820 |

^aScale values were coded: 0 = Not important; 1 = Somewhat important; 2 = Below average importance; 3 = Average importance; 4 = Above average importance; and 5 = Utmost importance.

average importance level. Respondents rated all of the basic principle statements above the average importance level. In addition, nearly all of the program standard statements were rated above average importance. It was concluded that the goals, basic principles, and program statements for secondary agricultural education programs in Thailand were those rated above average importance by the respondents.

A conceptual program model of secondary agricultural education programs in Thailand was developed which included the goals, basic principles, and program standards that were rated above average importance. The model depicts a general consensus among head secondary agriculture teachers regarding characteristics of agriculture education programs in secondary schools in Thailand.

The following recommendations were proposed as a result of this study. Each recommendation should be examined with reference to existing policies and the cultural context within the Thai educational system.

1. Agricultural teacher education programs should consider adopting the program model developed in this study to enable future teachers to conceptualize the philosophical basis for secondary agricultural education programs in Thailand.
2. Teacher certification programs should ensure that secondary agriculture teachers in

Table 3. Importance of Program Standard Statements as Perceived by Head Secondary Agriculture Teachers in Thailand

| Program Standard Statements | \bar{X} | SD |
|---|-------------------|------|
| A. <u>Instructional Planning and Organization</u> | | |
| Direct instruction toward appropriate and clearly defined objectives | 4.05 ^a | 0.87 |
| Balance between classroom, SAE, and leadership | 3.93 | 0.97 |
| Maintain an annual plan with specified goals and objectives | 3.92 | 0.85 |
| Revise the program periodically to meet needs of students | 4.00 | 0.90 |
| Incorporate related academics | 3.60 | 1.10 |
| B. <u>Instructional Material Utilization</u> | | |
| Utilize the nationally-developed curriculum | 3.82 | 1.02 |
| Use a wide variety of instructional materials | 3.69 | 1.16 |
| Enrich the curriculum by utilizing community resources | 3.93 | 1.10 |
| Adapt methods of teaching to meet student needs | 3.97 | 0.97 |
| Maintain up-to-date agricultural library | 3.81 | 1.13 |
| C. <u>Qualified Instructional Personnel</u> | | |
| Encourage instructors to continue their education | 4.08 | 1.20 |
| Encourage the instructor to participate in community service activities | 4.06 | 1.05 |
| Encourage instructors to work with other faculty | 3.62 | 0.99 |
| Keep school administrators informed | 3.76 | 1.00 |
| Keep administrators informed of program goals, etc. | 3.85 | 1.07 |
| D. <u>Enrollment and Student/Teacher Ratio</u> | | |
| Have sufficient training stations and/or equipment | 4.00 | 1.11 |
| Schedule agriculture classes to avoid course conflict | 3.99 | 0.98 |
| Limit class size according to the facilities available | 3.98 | 1.06 |
| Describe the purposes of the program <u>prior</u> to enrollment | 3.85 | 1.10 |
| Identify prerequisite courses to be completed prior to enrollment | 3.66 | 1.09 |
| E. <u>Equipment and Supplies</u> | | |
| Complete an annual inventory of all equipment | 3.99 | 0.92 |
| Maintain all equipment in safe working condition | 4.14 | 0.94 |

(table continues)

Table 3. (continues)

| Program Standard Statements | \bar{X} | SD |
|-----------------------------|-----------|----|
|-----------------------------|-----------|----|

| | | | |
|----|---|------|------|
| F. | <u>Instructional Facilities</u> | | |
| | Provide a classroom of adequate size for quality education | 4.00 | 1.08 |
| | Provide adequate: | | |
| | a. office | 3.73 | 1.14 |
| | b. storage space | 3.91 | 1.06 |
| | c. telephone | 2.76 | 1.55 |
| | d. desk | 3.85 | 1.01 |
| | e. file cabinets | 3.88 | 0.99 |
| | Provide an agricultural mechanics laboratory facility | 3.81 | 1.41 |
| G. | <u>Safety Training and Practices</u> | | |
| | Include safety instruction as a regular part of the instructional program | 3.81 | 1.14 |
| | Post and explain the general lab safety rules to all students | 3.70 | 1.24 |
| H. | <u>Program Advisory Committee and Community Relations</u> | | |
| | Utilize an advisory committee in planning the program | 3.55 | 1.17 |
| | Have a parent organization, a booster support group | 3.52 | 1.34 |
| I. | <u>Vocational Student Organization</u> | | |
| | Support a student organization as part of the program | 4.14 | 1.03 |
| | Plan public relations activities for the program | 3.54 | 1.30 |
| | Have student members conduct chapter meetings | 3.88 | 1.11 |
| | Encourage FFT members to participate in regional or national activities | 4.08 | 1.09 |
| J. | <u>Coordination Activities</u> | | |
| | Have each student complete an SAE | 4.04 | 1.03 |
| | Visit each student's SAE | 3.92 | 1.08 |
| K. | <u>Vocational Student Accounting and Reports</u> | | |
| | Assist graduates in finding a job in agriculture | 3.60 | 1.22 |
| | Assist graduates in enrolling in related post-secondary education | 3.59 | 1.21 |

^aScale values were coded: 0 = Not important; 1 = Somewhat important; 2 = Below average importance; 3 = Average importance; 4 = Above average importance; and 5 = Utmost importance.

Thailand are able to plan, organize, and evaluate secondary agricultural education programs based on the conceptual model.

3. Ministry of Education officials should

consider developing and/or modifying policies that support adoption of the program model among new and existing secondary agricultural education programs in Thailand.

4. Ministry of Education officials should consider development of reporting system in Thailand to maintain an accurate record of the size, scope, and quality of agricultural education programs in secondary schools.

Implications

Agricultural education programs in developing countries have the potential to contribute greatly to economic development efforts. However, in order to produce maximum benefits, the programs must be designed and conducted in a quality manner. Historically, secondary agricultural education programs in Thailand have evolved in the absence of a model to guide their development. This study was conducted to develop a model that can be used to guide agricultural education program improvement in the future.

Successful utilization of the program model developed in this study is highly dependent upon communication. Program administrators and teachers must be provided with the opportunity to examine the potential benefits of the model and its value for future program development efforts.

Furthermore, it will be necessary for administrators to develop policies and reward systems consistent with the goals, basic principles, and program standards incorporated within the model. Teacher educators will find the program model to be of value in communicating the philosophical foundation of secondary agricultural education programs to preservice teachers. Practicing teachers and administrators will also find the model to be useful as they make decisions and modifications affecting agricultural education programs in the future. Properly implemented, the

model holds great potential for improving the quality of secondary agricultural education programs in Thailand.

References

Birkenholz, R. J. (1986). Developing a philosophic model for vocational agriculture. Journal of the American Association of Teacher Educations in Agriculture, 27(1), 13-17.

Department of Secondary Education, Ministry of Education (1990). Secondary School Directory 1990. Bangkok, Thailand.

Kantasewi, N. (1982). Thailand: Social sciences in agricultural education. India: UNESCO Regional Office for Education in Asia and the Pacific.

Krejcie, R., V. & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30, 607-610.

Office of the Prime Minister. (1991). Thailand executive diary. Bangkok, Thailand: Victory Power Point.

Tesna, D. (1968). A model for education in agriculture below college level for Thailand with emphasis on education in agriculture in the private agricultural school. Unpublished doctoral dissertation, University of Wisconsin, Madison.

UNESCO (1971). Agricultural education in Asia. Paris: Imprimerie Firmin-Didot.