Journal for the Agriculture, Biotechnology and Education, 2(1), 31-35, January 2022
e-ISSN: 2754-7825
jabedu.com

Young Wise Publishing
youngwisepub.com

Research Article

Examining of the agriculture education program students' basic skills level in agriculture

Pakkapong Poungsuk[1*] and Piyanard Junlex[2]

Department of Agricultural Education, Faculty of Industry Education and Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

Article Info

Received: 11 November 2021
Accepted: 6 January 2022
Online: 30 January 2022

Keywords
Adaptation to climate change
Attitude
Awareness
Knowledge

Abstract

This quantitative study aimed to investigate the level of basic skills in agriculture of students in Agricultural Education program, Department of Agricultural Education, King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand. A set of questionnaires with co-efficient reliability of 0.874 were used for data collection. The sample group in this study consisted of 47 first year Agricultural Education students, KMITL. Obtained data were analyzed by using frequency, percentage, and mean. Results of the study revealed the following: 1) Most of the informants (68.09%) were female, upper secondary school graduates (85.11%), Plant Production Technology students (46.81%) and their first-year grade point average range was 2.00-2.49. The informants gained knowledge about basis agricultural knowledge the highest level in terms of farm machinery (μ = 4.44) and the other 7 aspects were found at a high level and 2. The informants were developed on the basis of basic skills in agriculture at the highest level in terms of farm machinery (μ = 4.68) and mushroom production (μ = 4.25), the rest aspects were found at a high level.

To cite this article

Poungsuk, P. & Junlex, P. (2022). Development of Basic Skills in Agriculture of Students Program in Agricultural Education, Department of Agricultural Education, King Mongkut's Institute of Technology Ladkrabang, Thailand. *Journal for the Agriculture, Biotechnology and Education, 2*(1), 31-35.

Introduction

Many changes on earth such as energy crisis, global warming and adverse climate condition cause natural calamity in many countries. Likewise, Thailand is not only facing this problem but also changes in economic, political, social, and environmental aspects which have impacts on people in the country in terms of social conflicts, livelihood, job opportunity, and environment. Most Thai people are engaged in agriculture and many of them are facing problems in their occupations due to many factors. Besides, there is a decrease in an interest to study agriculture in vocational collages and higher education institutes. In fact, personal in agricultural education are important to agricultural development because their main duty is to transfer agricultural knowledge, experience, and technology to the youths, students, and interested people in the country. Thus, country development will have some more problem if it lacks of personal in agricultural education (Department of Agricultural Education, 2011).

In addition, the globalization and rapid development of the information technology system make people having less opportunities cannot adapt themselves to the economic system. Also, climate and environmental changes had a

[1] * Assoc.Prof., Department of Agricultural Education, Faculty of Industry Education and Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand, E-mail: ppoungsuk@gmail.com, ORCID: 0000-0002-6876-7318
[2] Department of Agricultural Education, Faculty of Industry Education and Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand, E-mail: piyanard4185@gmail.com

negative effect on Thai people especially farmers. Thus, agricultural education plays important roles in solving this problem. The Agricultural education program facilitates experience which is consistent with the field of study to students and it is training in organizations and entrepreneurs' place for not less than 200 hours. This aims to make the students have skills and experience in various aspects of agriculture such as agricultural technology in animal and crop husbandry and agro-industry (Department of Agricultural Education, 2011). Therefore, these students are expected to be able to be competent in both theories and practice and work for an organization or agency related to agriculture.

Objectives

This study aimed to investigate basic skills in agriculture of Agricultural Education students, King Mongkut' Institute of Technology Ladkrabang.

Method

Research Model

This research was carried out in accordance with the survey model in quantitative research methods. This study was conducted to determine the level of basic skills of agricultural education students in agricultural education. *Independent variable*, It was general date of the sample group in terms of sex, educational level before attending the curricular program, grade point average (G.P.A.) of first year, and their expectation to select major field of study. *Dependent variable*, It was a level of basis knowledge and skills of the sample group. *Scope of Content*, the training on basic skills practice in agriculture comprised 8 aspects: Milk processing, aquaculture, Para rubber, oil crop (Palm/coconut), ornamental plants, mushroom production, animal science, and farm machinery.

Participants

Population in this study were 47 first year Agricultural Education students who were enrolled in Agricultural Training course, academic year 2016-2017, King Mongkut' Institute of Technology Ladkrabang (Registration Office, KMITL, 2016).

Table 1.

Socio-demographic Structures of the Participants

Socio-demographic Variables	**N**	**%**
Sex		
Male	15	31.91
Female	32	68.09
Educational Attainment		
Upper secondary school	40	85.11
Vocational certificate	7	14.89
G.P.A. of Just Year		
Below 2.00	2	4.26
2.00 – 2.49	18	38.30
2.50 – 3.00	14	29.79
3.01 – 3.49	10	21.28
3.50 and above	3	6.38
Expectation to Select Major Field of Study		
Agricultural Technology – Crop Husbandry	22	46.81
Agricultural Technology – Animal Husbandry	17	36.17
Agro – Industry	8	17.02
Total	47	100

It can be seen that the most of the respondents (68.09%) were female upper secondary school graduates and the rest were vocational certificate graduates (85.11 and 14.18%, respectively). Their G.P.A. range was 2.00 – 2.49 (38.30%) and they expected to major in Corp Husbandry (46.81%), Animal Husbandry (36.17%), and Agro-Industry (17.02%), respectively.

Data Collection Tools and Analysis

Research instruments in this study were questionnaire and in-depth interview. The questionnaire consisted of 8 parts as follows:

Part 1. General data of the respondents
Part 2. Basic knowledge and skills in milk processing
Part 3. Basic knowledge and skills in aquaculture
Part 4. Basic knowledge and skills in Para rubber
Part 5. Basic knowledge and skills in oil crops (Palm/coconut)
Part 6. Basic knowledge and skills in ornamental plants/pomology
Part 7. Basic knowledge and skills in mushroom production
Part 8. Basic knowledge and skills in animal science
Part 9. Basic knowledge and skills in farm machinery

The questionnaire was in the form of 5–rating–scale and the interpretation criteria was in accordance with that of Roengprapan (2000).

$$\frac{\text{Highest criterion - Low criterion}}{\text{All criteria}} = \frac{5-1}{5} = 0.80$$

Based on the computation, the criteria are shown below:

Score	Scale Limits	Description
5	4.21 – 5.00	Highest
4	3.41 – 4.20	High
3	2.61 – 3.40	Moderate
2	1.81 – 2.60	Low
1	1.00 – 1.80	Lowest

The questionnaire was checked for correctness and co-efficient reliability of 0.874. Data were collected (questionnaire/in-depth interview) by the researcher. In case of in-dept interview using interview schedule with training satisfaction and feedback. Content analysis and descriptive statistics were employed (percentage, mean, and standard deviation).

Results

Results of the study revealed that most of the respondents (68.09%) were female upper secondary school graduates and the rest were vocational certificate graduates (85.11 and 14.18%, respectively). Their G.P.A. range was 2.00 – 2.49 (38.30%) and they expected to major in Corp Husbandry (46.81%), Animal Husbandry (36.17%), and Agro-Industry (17.02%), respectively.

Table 2.

Agriculture Education Students' Level of the Basic Skills on Agriculture

Domains of Basic Agriculture Education	Level of Knowledge			Level of Skills		
	μ	σ	Level	μ	σ	Level
Milk processing	3.70	0.65	High	3.53	0.74	High
Aquaculture	4.14	0.50	High	4.10	0.59	High
Para rubber	4.04	0.62	High	3.95	0.69	High
Oil crop (Palm/coconut)	4.04	0.55	High	4.19	0.64	High
Ornamental plants/Pomology	3.97	0.94	High	3.53	0.80	High
Mushroom production	4.08	0.58	High	4.25	0.60	Highest
Animal science	3.89	0.78	High	3.97	0.67	High
Farm machinery	4.44	0.54	Highest	4.68	0.47	Highest
Total	4.02	0.31	High	4.06	0.37	High

From the interviews with students of agricultural teachers who have practiced in agriculture to develop basic agricultural skills. Almost all of them had the highest level of overall satisfaction in terms of content. and agricultural skills activities that were defined in 8 bases. The interviewees cited important reasons as knowledge and new experiences in basic agricultural skills and recomened that the knowledge and skills that have been practiced can be applied in the future both the agricultural occupation and the occupation of being an agricultural teacher.

Discussion and Conclusion

In this study was found that, as whole, the respondents had basic knowledge and skills in agriculture at a high level. Based on its details, the respondents had a highest level of skills in mushroom production, and highest knowledge and skills in farm machinery and mushroom production. This might be because the respondents had practised in every station of agricultrueal skills. For farm machinery, they had practised basic skills in tactor driving for ploughing. It conformed to an interview which found that knowledge and skills infarm machinery are very interesting for the current farming and essentilal for future farming. Besides, the respondents were excted to use farm machinery. This also conformed to a study of Siriwan (2014) and Poungsuk (2017) which revealed globalization relationship of agricultural occupations and the facilitation of agricultural education. That is new farm machinery and information technology is employed to solve the problem in lack of agricultraul workforce in Thailand at present. In addition to the aforementioned agricultural skills To be in line with the changes in online communication technology Agricultural Teacher Apprentice Student Must have relevant skills, as Cajethan and Benardine (2015) found that the computerized office skills required by Agricultural Education students for employment in agribusiness organizations as the computerized office skills with word processing, database management and internet utilization skills. These skills lead to productivity, proficiency and efficiency in agribusiness organization. Hence, the need for Agricultural Education students to possess these skills so that they can fit into today's contemporary agribusiness offices. Moreover, the future agricultural skills are essential to learn and acquire skills in ICT and related technologies Aduwa-Ogiegba and lyamu (2005) also, the skills of farmers in the future are also related to skills in the 21st century (Poungsuk, 2019 and Saduak et al. 2017). According to table 2, it was found that, as whole, the respondents had basic knowledge and skills in agriculture at a high level. Based on its details, the respondents had a highest level of skills in mushroom production, and highest knowledge and skills in farm machinery and mushroom production. This might be because the respondents had practiced in every station of agricultural skills. For farm machinery, they had practiced basic skills in tactor driving for ploughing. It conformed to an interview which found that knowledge and skills in farm machinery are very interesting for the current farming and essential for future farming. Besides, the respondents were exacted to use farm machinery. This also conformed to a study of Siriwan (2014) which revealed globalization relationship of agricultural occupations and the facilitation of agricultural education. That is new farm machinery and information technology is employed to solve the problem in lack of agricultural workforce in Thailand at present. Regarding agro-industry development, the college or university producing agricultraul graduates needs to facilitate knowledge and experience in this respect based on learning by doing (Siriwan, 1989). Regarding agro-industry development, the college or university producing agricultraul graduates needs to facilitate knowledge and experience in this respect based on learning by doing (Siriwan, 1989, Kruadsungnoen, 2018). In terms of an average mean score, milk processing and ornamental plants/pomology were lowest (3.53) and followed by Para lubber (3.95). Therefore, skills in milk processing and ornamental plants/pomology must be improved. This might be because the interest of the respondents was different and they needed more time for learning and practice. This conformed to an interview which found that the practice on ornamental plants and fruit trees (Pomology) need more than 200 hours. That is, the respondents did not see the outcomes (yields) after finishing the practice. Also, the practice on Para rubber and milk processing needed more fixed time.

Recommendations

According to results of the study, the following were suggestions for improving of development of basic skills in agriculture of student's program in agricultural education were follows:

- The Department of Agricultural Education should employ results of the study as a basis for considering time span to provide basic knowledge and skills in agriculture to the students. This aims to make them be skillful which conforms to their needs.
- Time span for the facilitation of basic knowledge and skill in agriculture should be adjusted appropriately based on learning content, readiness of materials/equipment, and yields. Monitoring the yields by the students should be taken into consideration.
- The Department of Agricultural Education should find more new places for the students to practice basic skills in agriculture so as to be their alternatives.

References

Aduwa-Ogiegbaen, S. E & lyamu, E. O.S (2005). Using Information and Communication Technology in Secondary Schools in "Nigeria: Problems and Prospects- Benin: *Journal of Educational Technology & Society, 8*(1), 104-112.

Cajethan, U. U. & Benardine, I. O. (2015). Skills Required by Agricultural Education Students of Colleges of Education for Employment in Compterized Office of Agribusiness Organizations. *Journal of Education and Practice*, 6(29), 84-91.

Department of Agricultural Education. (2011). *Bachelor of Science in Industrial Education Program in Agricultural Education*. Faculty of Industry Education and Technology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand.

Kruadsungnoen, C. (2018). "The Agricultural Career Skills Learning Activities for Special Students" in Poungsu, P. 2018. Agricultural Education. Bangkok: Mean Service Supply Limited Partnership. 652p.

Poungsuk, P. (2017). *Agricultural Education*. Faculty of Industrial Education and Technology, King Mungkut's Institute of Technology Ladkrabang, Bangkok: Mean Service Supply Ltd. Partnership.

Poungsuk, P. 2019. The Agricultural Learning Center and Transition to the Digital Society. *Journal of Industrial Education,* 17(2), 1-7.

Registration Office, KMITL, (2016). *Data of Student Registation, School year 2016*. King Mongkut's Institute of Technology Ladkrabang: Bangkok, Thailand.

Roengprapan, C. (2000). Basic Statistic together with Specimen by Minitab SPSS and SAS. Khonkaen: Khonkaen University.

Saduak, W., Poungsuk, P., Phonpakdee, R. and Deeying, S. (2017). Problem Condition in the AgriculturalLearning Center Using at Praibuengwittayakom School, Srisaket Province, Thailand. *International Journal of Agricultural Technology*, 13(7.2), 2117-2124.

Siriwan, N. (1989). *Farm Work: Key Strategies of Education in Agriculture*. Bangkok: Ponchai Printing Center.

Siriwan, N. (2014). *Miscellaneous of Thai Education in Agriculture: Important Essentials Needed to be Reviewed*. Bangkok: Mean Service Supply Limited Partnership.