
Needs for Animal Farm Work Development of Northeastern Vocational Institute of Agriculture, Ministry of Education, Thailand

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This study aimed to explore needs for animal farm work development of 42 teachers responsible for the college farm care-taking 10 Northeastern Vocational Institute of Agriculture. They were obtained by purposive sampling from 86 Animal Science Section teachers. A set of questionnaires was used for data collection and analyzed by using percentage mean, and standard deviation. Besides, F-test and Scheffe test were employed in this study. Results of the study were as follows:

1. Most of the respondents were male (69.05%), more than 50 years old, bachelor's degree holders, Senior Professional Level Teachers (K3 Teachers), and they had more than 20 years of service. Their teaching load (office hours) was 19.50 hours per week and 9.90 hours per week for non-office hours.
2. Regarding needs for animal farm work development of the respondents, it was found that the reason was to be beneficial to teaching/learning activities at a highest level ($\bar{x} = 4.88$). Meanwhile, Factors having an effect on farm care-taking ($\bar{x} = 4.61$); needs for farm work development to be a modern quality farm business ($\bar{x} = 4.61$); and needs for Animal Science farm development at a high level ($\bar{x} = 4.29$).
3. For a comparison of needs for Animal Science farm development and various factors, it was found as follows:
 - 3.1 The difference in years of service and teaching experience of the respondents had no effect on needs for Animal Science farm work development with a statistical significance level at .05. Regarding Scheffe test, it was found that the respondents having years of service for less than 11 years had statistically significant difference in needs for farm work development to be beneficial to community services when compared with those having 11-20 years of service.
 - 3.2 The respondents having difference in years of service and teaching experience had an effect on the difference in needs for the development of knowledge and capability in farm work

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management with a statistically significant difference level at .05. Based on Scheffe test, it was found that the respondents having more than 20 years of service had a statistically significant difference level at .05. When compared with those having 11-20 and less than 11 years of service.

3.3 The respondents having difference in years of service and teaching experience had a statistically significant difference level at .05 in terms of needs for farm work development. When it was compared by using Scheffe test, it was found that the respondents having less than 11 years of service had different opinions from those having 11-20 years of service with a statistically significant difference level at .05.

Keywords: needs for Animal Science farm work development, teacher responsible for farm work, College of Agriculture and Technology, Vocational Institute of Agriculture

Introduction

The agricultural education facilitation is important to the country since agricultural occupations can be considered as a main occupation of the country or more than 60 percent (National Workforce Data Center, 2015). Both public and private sectors facilitated agricultural education covering in various levels of educational curriculum. This is particularly on the educational facilitation to the youths in vocational education agriculture. The Institute of Vocational Education in Agriculture, northeastern Thailand comprises 10 campuses which have been offering many agricultural courses for a long time to produce skillful personnel in various fields of agriculture. The teaching/learning facilitation there put the importance on actual practice (Learning by doing) both in the college and private company farms. Hence, farm work is an essential tool for the college and it acts as the center of direct experience on agricultural occupations. The college or school farm is not only the place for agricultural learning and practice but also includes agricultural yield processing/selling, academic services, preservation of Thai arts culture, good relationships between the college and the community and appropriate technology transfer on crop and livestock husbandry. Siriwan (1989) revealed that the school farm project is every important to the learning/teaching facilitation at the agricultural vocation education level. In fact the farm work is aimed to make students have an opportunity to practice in the actual situation after gaining theoretical knowledge in the classroom. The actual experience practices are like a tool helping students to learning more and know guidelines of agricultural problem solving. Animal Science farm work is needed by the market than before while an amount of Animal Science graduates is almost the same as before or even decreases. Animal farm management needs to use a big budget for investment because it includes expenses on animal breeds, equipment, animal housing, feed, medical treatment, etc. Besides, it needs knowledge and skills in animal rearing and care-taking. However, the successful school animal farm can be an

important source of incomes for the school or college. According to a report of the Animal Science Teacher Profession Club (2003), it was found that the livestock farm in Colleges of Agriculture and Technology in Thailand still not be developed to meet farm standards due to various internal and external factors. Thus, it needs a study on needs for the development of Animal Science farm work in College of Agriculture and Technology. Results of the study can be guidelines for developing standard farm work for sustainable development.

Objectives

1. Explore needs for the development of Animal Science farm work based on opinions of School farm care-taking teachers in Colleges of Agriculture and Technology, northeastern Thailand and
2. Compare conditions of the needs of each college of Agriculture and technology (Institute of Agricultural Vacation Education, Northeastern Thailand).

Scope and Limitation of the Study

1. Population - Forty-two teachers controlling and taking care of the School Animal Science farm in Colleges of Agriculture and Technology (Institute of Agricultural Vacation Education, Northeastern Thailand).
2. Variables
 - Independent variables included socio-economic attributes of the respondents i.e. sex, age, educational attainment, major field of study, years of service, Agriculture subject teaching experience, current position, salary and hours of teaching load (office/non-office hours).
 - Dependent variable included needs for the development of college or school farm work in terms of the following: place/location, water source and system, structure, tool/equipment, plant varieties, animal breeds, material, farm management, marketing, yield selling, personnel/workforce, and capital/budget. The following were also included in the dependent variables: reasons for the development of Animal Science farm work; traits of needs for knowledge and potential development for the management of Animal Science farm work; factors effecting Animal Science farm work development; and needs for the development of Animal Science farm work to have various traits.
3. Time span for data collection was September-October, 2015

Results

1. Socio-economic attributes of the respondents

Results of the study revealed that most of the respondents were male (69.05%), more than 50 years old, married, bachelor's degree holders, seniors professional level teachers, and Animal Science major graduates. Their year of service was more than 20 years and their salary was more than 40,000 baht. Their teaching load range was 16-20 hours/week or 19.50 hours/week on average (9.90 hours non-official hour/week).

2. Needs for the development of the Animal Science farm in Colleges of Agriculture and Technology, northeastern Thailand

Table 1. Reasons of needs for the development of the Animal Science farm given by the respondents

Items	Needs		
	\bar{x}	S.D.	Level
1. Beneficial to teaching/learning	4.88	0.32	Highest
2. An example for students to practice in the future	4.80	0.39	Highest
3. An example for farmers to practice by them selves	4.61	0.53	Highest
4. Preserving wisdom on animal science and distinct farm work of the college	4.52	0.67	Highest
5. Beneficial to research	4.30	0.84	high
6. Beneficial to community service	4.28	0.80	high
7. Enhancement of self-experience	4.23	0.69	high
8. Generating incomes used for future college development	4.07	0.89	high

Table 2. Traits of needs for development of knowledge about the school Animal Science farm work management

Items	Needs		
	\bar{x}	S.D.	Level
1. Learning through experience gained from the school Animal Science farm	4.35	0.75	High
2. Educational trip at a private agency (Domestic)	4.35	0.69	High
3. Pursuing study	4.33	6.28	High
4. Attending a meeting/seminar (Domestic)	4.16	0.85	High
5. Educational trip at a public agency (Domestic)	4.07	0.89	High
6. Attending a seminar in a public agency (Domestic)	3.97	0.99	High
7. Educational trip at a private agency (Abroad)	3.54	1.43	High
8. Educational trip at a public agency	3.30	1.45	Moderate
9. Attending a seminar in a public agency (Abroad)	3.21	1.55	Moderate
10. Attending a meeting/seminar (Abroad)	3.07	1.52	Moderate
11. Pursuing study abroad	2.97	1.56	Moderate

Table 3. factors effecting the Animal Science farm work development

Items	Needs		
	\bar{x}	S.D.	Level
1. Participation and private agency assistance	4.85	6.29	Highest
2. Responsibility of the teachers taking-care of the farm	4.61	0.66	Highest
3. Personnel/workforce	4.52	0.89	Highest
4. College administrator support	4.50	0.74	Highest
5. School Animal Science farm management system	4.40	0.82	High
6. Water source/irrigational system on the farm	4.40	0.62	High
7. Policy about farm work activities/management	4.35	0.79	High
8. Market/farm yield selling	4.35	0.90	High
9. Resources related to the current Animal Science farm work	4.28	0.83	High
10. Student interest/responsibility	4.14	0.89	High
11. Convenience in transportation/communication	4.11	0.86	High
12. College personnel participation and assistance	4.04	1.05	High
13. Topographic condition and climate	4.00	0.88	High
14. Public agency participation/assistance	3.85	0.97	High
15. Community participation/assistance	3.71	1.08	High

Table 4. Needs for development of the school Animal Science Farm in various aspects

Items	Needs		
	\bar{x}	S.D.	Level
1. Developing the school Animal Science farm to be modern on the quality to earn more incomes	4.45	0.67	High
2. Separating the farm into 2 parts: 1) for teaching and learning and 2) for business	4.42	7.88	High
3. The teaching/learning part is made to be smaller than before but appropriate, modern, and easy to manage	4.38	0.98	High
4. Managing the new farm layout to be appropriate with good quality for teaching/learning practicing, and academic serving	4.38	0.66	High
5. The business farm fully coordinates with the private sector in order to bring outcomes of the business to improve farm work	4.00	1.03	High

Table 5. Needs for the development of various factors for the school Animal Science farm operation

Items	Needs		
	\bar{x}	S.D.	Level
1. Farm tools/equipment	4.51	0.65	Highest
2. Animal breeds, plant varieties, feeds	4.45	0.70	High
3. Personnel/workforce	4.42	0.52	High
4. Medicines and equipment	4.38	0.69	High
5. Farm management	4.35	0.59	High
6. Structures	4.33	0.65	High
7. Marketing/yield selling	4.25	1.05	High
8. Capital/budgets	4.22	0.79	High
9. Water source/irrigation	4.19	0.72	High
10. Land/location	3.84	0.76	High
On average	4.29	0.45	High

3. A comparison of needs for the development of the school Animal Science farm work and the respondents

Table 6. A comparison of needs for the development of the school Animal Science farm work and the respondents

Items	Agricultural teaching experience			f	Sig	Scheffe
	Less than	11-20	More than			
	11 years	years	20 years			
1. Beneficial to teaching/learning	4.80	5.00	4.86	0.90	0.41	-
2. Generating incomes for lecture college development	4.30	3.88	4.04	0.51	0.60	-
3. An example for farmer to practice	4.40	4.55	4.73	1.49	0.23	-
4. Preserving wisdom on animal science and distinct	4.50	4.77	4.43	0.84	0.43	-
5. Beneficial to research	4.10	4.77	4.21	1.92	0.15	-
6. Beneficial to community services	3.90	4.77	4.26	3.13	0.05	Less than 11-20 years
7. Enhancement of self-experience	4.40	4.66	4.00	3.82	0.03*	No difference
8. An example for students to practice in the future	4.60	4.77	4.91	2.34	0.10	-

* Statistically significant difference at .05

Table 7. A comparison of needs for the development of knowledge and potential in farm work management and experience in teaching

Items	Agricultural teaching experience			f	Sig	Scheffe
	Less than 11 years	11-20 years	More than 20 years			
1. Learning from experience gained from the school farm (Animal Science)	4.60	4.66	4.13	2.44	0.10	-
2. Educational trip at public agency (Domestic)	4.40	4.55	4.26	0.59	0.55	-
3. Pursuing study (Abroad)	4.30	4.33	2.60	10.64	0.00*	More than 20 years*, Less than 11 years, More than 20 years, 11-20 years
4. Attending a meeting/ seminar (Domestic)	4.10	4.55	4.04	1.21	0.30	-
5. Attending a trained at a public agency (Domestic)	4.40	4.33	3.65	2.93	0.06	-
6. Educational trip at a public agency (Domestic)	4.10	4.33	3.95	0.56	0.57	-
7. Attending a meeting at a public agency (Abroad)	3.80	4.11	2.60	4.65	0.01*	More than 20 year* more than 20 year* 11-20 years
8. Educational trip at a private agency (Abroad)	3.60	4.33	3.21	2.06	0.14	-
9. Educational trip at a public agency (Abroad)	3.60	4.11	2.86	2.84	0.07	-
10. Attending a meeting/seminar (Abroad)	3.80	4.00	2.39	6.50	0.00*	More than 20 years*, 11-20 years
11. Pursuing study (Abroad)	3.70	3.88	2.30	5.79	0.00*	More than 20 years*, Less than 11 years, More than 20 years 11-20 years

* Statistically significant difference at .05

Table 8. A comparison of needs for the development of the school Animal Science Farm in various aspects and experience in teaching

Items	Agricultural teaching experience			f	Sig	Scheffe
	Less than 11 years	11-20 years	More than 20 years			
1. Develop the farm to be a modern business farm with quality having income generating	4.09	4.77	4.50	2.98	0.06	Less than 11 years*, 11-20 years
2. Clearly separate the farm into teaching/learning part and business part	4.09	4.55	4.18	0.68	0.50	-
3. Adapt the farm work for teaching/learner to be smaller than before but appropriate and easy for management (Smart farm)	4.09	4.88	4.31	1.77	0.18	-
4. Manage business farm layout to quality and be appropriate with teaching/learning activities and academic services	4.09	4.77	4.36	2.94	0.06	Less than 11 years*, 11-20 years
5. Focus on farm business having full coordination with private sector. Outcome of the business will be used for farm work improvement to be appropriate and modern	4.00	4.00	4.00	0.00	1.00	-

* Statistically significant difference at .05

Discussion

According to results of the study, most of the teacher respondents were male and senior professional level teachers. The respondents responsible for the farm were more than fifty years old most and they had more than 20 years of teaching experience. Most of the new teachers batch were bachelors' degree holders and their teaching load was 29.40 hours/week (Both official and non-official hours). Almost all of the teacher respondents responsible the school farm care-taking must have normal teaching load like other teachers.

The teacher respondents responsible for the school Animal Science farm had the following assigned tasks as follows: broiler farm and others such as fisheries, ostrich, dairy cattle, beef cattle, grass feed plot, laying chicken farm,

sheep/goat farm, pig farm, mixed farming, and New Theory farming, respectively. It can be seen that the colleges have various Animal Science farms to be responsible by some Animal Science teachers and it is a big burden aside from teaching. Not only working on the farm, these teachers also teach in a classroom outside the farm. This conforms to a study of Siriwan *et al.* (2003) which found that teachers responsible for the school demonstration farm at the vocational education and technical education levels were satisfied with the college where they work and they wished to work there until retirement.

The teacher respondents had opinions on needs for the school Animal Science farm development at a high up to highest levels. This might be because they want to create attitude, knowledge, and skills for students to be confident's in future agricultural occupations. Also, they had opinions on traits of needs for knowledge and potential development in the Animal Science farm management at a high level. This might be because the teachers responsible for the school Animal Science farm are active and they want to develop experiential practice on the farm and gain knowledge from educational trip. However they wanted to pursue study, attend training, and join educational trip abroad at a moderate level. This conforms to a study of Siriwan *et al.* (2003) which revealed that the said forms of knowledge and potential development are rather time consuming which may have a negative effect on regular teaching load.

In addition, the teacher respondents pointed out that they had a high level of needs for the Animal Science farm work in all aspects leading to be a modern business farm and a teaching/learning farm which are easy to manage (A smart farm). This might be because they perceive the importance of farm work. Meanwhile there are difference in the school Animal Science farm conditions and factors among the Colleges of Agriculture and Technology in northeastern Thailand and its problem was found at a moderate level. Panyakhom *et.al.* (2014) and Animal Science Teacher Profession College of Agriculture and Technology throughout the country have a lot of problems such as old and inadequate animal shelters, inadequate animal breeds, inadequate supporting budget, farm management is not flexible, and uncertain marketing system.

Findings showed no statistically significant difference in problem conditions. Comparing the problem condition with year of service, it was found that years of service of Agriculture teachers taking care of the farm has a statistically significant difference level at .05 with problem conditions of the Animal Science farm. Based on the Scheffe test, it was found that the teacher respondents having less than 11 years of service have different opinions from that of those having 11-20 years of service in terms of problem condition in farm structure, animal breeds, plant feed, capital and budget. This might be

because the former were not familiar with these problems whereas the latter view that it is normal since they have long farm work experience. Beside it was found that the teacher respondents having more than 20 years of years of service had a statistically significant difference level at .05 from those having 11-12 and less than 11 years of service. This might be because those having a lot of teaching experience are mostly in old age so they put less importance on study pursuing and knowledge/potential development than those having less teaching experience (Young teachers).

Suggestions

According to results of the study, the following were suggestions to the Institute of Agricultural Vocation Education, Northeastern Thailand:

1. Animal Science farm work in Colleges of Agriculture, northeastern Thailand should put the importance on promotion and support the school Animal Science farm work development for effective teaching/learning activities and experience in practice in the actual situation.
2. It should have clear promote and support as well as policy determination on Animals Science farming in the colleges (commercial farming and teaching/learning farming) which can be a sustainable learning source.
3. Farm work must be systematically managed in accordance with farm management structure and coordination of all concerned parties.
4. It should have adequate budget allocation for the Animal Science farm operation.
5. Other assigned tasks aside from teaching load should be reduced so that care-taking of the Animal Science can be fully done.
6. It should have preparation on new personnel to replace existing teachers taking-care of the farm who will retire soon.
7. The following should be held for knowledge and potential development: training, seminar, educational trip, cooperative education, and farm work practical activities.
8. Provision of adequate workforce to be appropriate with the farm size.
9. Improvement of farm structures, tools, equipment to be modern for effective work.
10. The water supply system must be effectively utilized throughout the year to prevent the water shortage problems.
11. Good improvement of animal breeds with diversity needed by the market. Coordination with Department of Livestocks Department would be very good.

12. Provision of markets for the Animal Science yields. Yield seeing committee must be designated to promote sales volumes.
13. Morale support for farm personnel/workforce should be practiced which may be in the form of fringe benefits.
14. The sewage disposal system on the farm must always be checked to reduce pollutions and control disease.
15. Farm standards must be well managed particularly on safety and sanitary.
16. Closely coordination with the community in terms of livestock rearing, academic service, learning source, and training is preferred and beneficial.

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