
The Problems and Obstructions on Teaching and Learning of Agricultural Subject of Agricultural Teachers in Secondary School in Northeast Region of Thailand

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Abstract The purposes of this study were : 1) to study of problems and obstructions on teaching and learning of agricultural subject of agricultural teachers in secondary school in Northeast region of Thailand, and 2) to compare of the problems and obstructions on teaching and learning of agricultural subject of agricultural teachers with their basic factors. The questionnaire was use to gathering data from 192 agricultural teachers in one month assigning. The data were analyzed by percentage, mean, standard deviation, t-test, F-test, and Scheffe-test. The results were as follows: 1) Most of respondents were male with 68.20%, age above of 50 year old (35.94%), highest academic degree of BS (65.11%) with agricultural area, and they were having teaching experience lower 8 year and between 21-30 years (23.96%) equally. Most of them were teaching in the middle school. The respondents were having trained to enhance their knowledge and improve their teaching more than 3 times (35.42%). 2) problems and obstructions on teaching and learning of agricultural subject of teachers in overall were in the middle level with mean of 3.07. In order 3 their problems and obstructions were follows: 1) classrooms and facilities have not been developed to be suitable for agricultural teaching purposes with mean of 3.32, 2) teachers having too many other commitments besides teaching with mean of 3.31, and 3) the problems of financial support with mean of 3.27. 3) The results of comparison between problems and obstructions on teaching and learning of agricultural subject with the differences of school side, teaching experience, education attaining, and training experiences. The results were as follows: (1) Teacher who teaching in differences school side having problems and obstructions on teaching and learning of agricultural subject was significant difference at the 0.05 level with extra-large school side difference with small school side. (2) teacher who teaching in differences of school side having problems and obstructions on teaching and learning of agricultural subject was significant difference at the 0.05 level with the interest and responsibilities of students studying agriculture, the problems of teaching and learning preparation, and teachers having too many other commitments besides teaching. In order of teachers who was heaving teaching experiences more than 20 years was difference with teachers who heaving teaching experiences lower than 11 years. Another, the problems of financial support factors show that teachers who heaving teaching experiences more than 20 years was difference with teachers who heaving teaching experiences lower than 11 years; (3)

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teachers who have difference of training experiences having problems and obstructions on teaching and learning of agricultural subject was non-significant difference at the 0.05 level; (4) teachers who have difference of education attaining having problems and obstructions on teaching and learning of agricultural subject was non-significant difference at the 0.05 level.

Keywords: problems and obstructions, agricultural teacher, teaching and learning, agricultural subject, secondary school

Introduction

From the past up to the present, the educational management on agriculture of Thailand still has various problems, particularly the teacher. This includes standard and quality of teaching/learning facilitation as well as lack of Agriculture teachers having high experience (Puangsuk, 2013). It conforms to the report of Office of the Basic Education Commission (2012) which revealed that the problems in standard and quality of teaching/learning facilitation reduce the efficiency of classroom activities and has an effect on learning achievement of students. In order to achieve the goals as determined by Ministry of Education, it needs coordination among concerned parties: school administrators, teachers, parents/guardians, and the community. However, the teacher is a very important component to solve the problem.

At present, the society has been changing a lot due to the progress of various new technology which has effect on the development of teaching/learning facilitation. Hence, it is essential to improve all dimensions of the educational management. This includes the development of teachers, particularly Agriculture teachers in the secondary school level having influence over good attitude towards the facilitation of agricultural education of learners. This conforms to a study of Siriwan *et al.* (1995) which revealed that the facilitation of quality agricultural education is aimed to develop Agriculture teachers to have efficiency in teaching. Seree encyclopedia (2012) revealed data about roles of Agriculture exchange, and coordination in order to enhance knowledge, understanding and good attitude of students toward agricultural careers. In fact, the facilitation of agricultural education aims to enhance learners to have skills, good attitude, knowledge, and capability and be able to apply it to their livelihoods and careers. Agricultural education is facilitated in all levels of education in the country.

This, it can be seen about important roles of Agriculture teachers in the development of the facilitation of agricultural teaching/learning and instillation of good attitude toward agricultural education. Not only this, Agriculture teachers also enhance concerned knowledge, skills, and experience to their students which can be utilized in the future. All of these inspired the facilitation of agricultural teaching and learning of Agriculture teachers. This can be a

guideline for problem solving and important data for the development of the facilitation of quality agricultural education in schools.

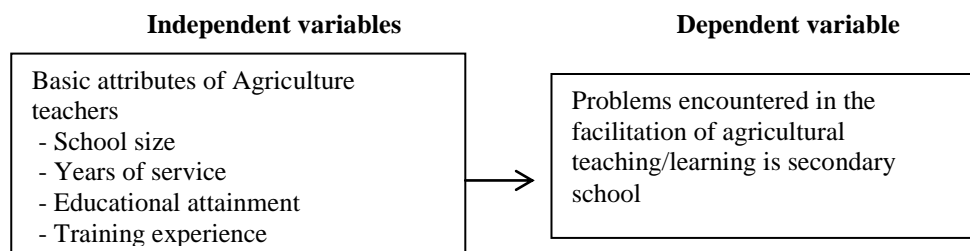
Objectives of the Study

1. To explore problems encountered in the facilitation of agricultural teaching and learning in secondary schools of northeastern Thailand.
2. To compare the problems based on the difference of basic attributes of Agriculture teachers

Scope and Limitation of the Study

1. Populations in his study were Agriculture teachers (government official/hired teacher) in 929 schools, northeastern Thailand.
2. Time span for data collection was 2 month (January. February, 2013)
3. The schools in this study were classified into 4 groups based on size (Office of Basic Education Commission, 2012) as follows:
 - Small school – having 1 – 499 students
 - Medium school – having 500 – 1,499 students
 - Big school – having 1,500 – 2,499 students
 - Extra – big school – having 2,500 students and above
4. Variables
 - Independent variable: school size, years of service, educational attainment, and training experience
 - Dependent variable: problems encountered in the facilitation agricultural teaching and learning in secondary schools of northeastern Thailand

Conceptual Framework



Materials and methods

1. Population and the sample group
 - Population in this study were 929 Agriculture teachers (government official/hired teacher) in secondary schools under the supervision of Office of Basic Education, northeastern Thailand (one teacher form one school)
 - The sample group in this study were those who corresponded to the questionnaire during 2 months (January – February, 2013)

2. Research instrument in this study was a set of questionnaires having 3 parts as follows:

Part 1 Basic attributes of the respondents

Part 2 Problems encountered in the facilitation of agricultural teaching/learning

Part 3 Suggestions

The questionnaire was in the form of 5 rating scale (Likert scale) as criteria for the interpretation of levels of problems encountered based on an average mean score (Leekitwattana, 2011) as follows:

| An average mean score | = | Level of problems |
|-----------------------|---|-------------------|
| 4.50 – 5.00 | = | Highest |
| 3.50 – 4.49 | = | High |
| 2.50 – 3.49 | = | Moderate |
| 1.50 – 2.49 | = | Low |
| 1.00 – 1.49 | = | Lowest |

3. Data collection Questionnaires were sent to 929 secondary schools and it must be sent back within 2 months (January – February, 2013) and only 192 questionnaires were returned.

4. Data analyses included content analysis and statistical analysis by using the statistical package i.e. percentage, mean, standard deviation, t-test, F-test, and Scheffe-test.

Results

Problems encountered in the facilitation of agricultural teaching/learning in secondary schools of northeastern Thailand were explored by using a set of questionnaires. The following were found:

Table 1. Frequency and percentage of basic attributes of the respondents

| Items | Frequency (n = 192) | Percentage (%) |
|---|------------------------|-------------------|
| 1. Sex | | |
| Male | 131 | 68.20 |
| Female | 61 | 31.80 |
| Total | 192 | 100 |
| 2. Age | | |
| Less than 30 years | 18 | 9.38 |
| 31 – 35 years | 16 | 8.33 |
| 36 – 40 years | 28 | 145.8 |
| 41 – 45 years | 29 | 15.10 |
| 46 – 50 years | 32 | 16.67 |
| 51 years and above | 69 | 35.94 |
| Lowest = 26 years, Highest = 59 years (45.37 years old on average) | | |
| Total | 192 | 100 |
| 3. Educational attainment | | |
| Bachelor's degree | 125 | 65.11 |
| Master's degree | 64 | 33.33 |
| Doctoral's degree | 1 | 0.52 |
| Others | 2 | 1.04 |
| Total | 192 | 100 |
| 4. Major field of study | | |
| Agriculture | 38 | 19.79 |
| Educational Administration | 37 | 19.27 |
| Farming | 31 | 16.14 |
| Curriculum and Instruction Development | 10 | 5.21 |
| Educational Technology | 9 | 4.69 |
| Animal Science | 8 | 4.17 |
| Agricultural Extension | 7 | 3.65 |
| Plant Science | 6 | 3.13 |
| Agronomy | 6 | 3.13 |
| Agricultural Technology | 6 | 3.13 |
| Plant ProductionTechnology | 5 | 2.60 |
| Animal Husbandry | 5 | 2.60 |
| Agricultural Education | 4 | 2.08 |
| Agricultural Science | 3 | 15.6 |
| Horticultural | 3 | 1.56 |
| Agricultural Technique | 2 | 1.04 |
| Fisheries | 2 | 1.04 |
| Environment | 1 | 05.2 |
| Educational Research | 1 | 05.2 |

| | | |
|--|------|---------|
| Not specify | 8 | 4.17 |
| Total | 192 | 100 |
| 5. Years of service | | |
| Less than 11 years | 52 | 27.08 |
| 11 – 20 years | 51 | 26.56 |
| 21 years and above | 89 | 46.35 |
| Lowest = 1 year, Highest = 39 years (17.78 years on average) | | |
| Total | 192 | 100 |
| 6. School size | | |
| Small | 70 | 365.0 |
| Medium | 73 | 3800. |
| Big | 25 | 13.00 |
| Extra-big | 24 | 1250. |
| Total | 192 | 100 |
| 9 . A Training experience on the enhancement and development of instruction (n = 192) | | |
| No | 34 | 177.1 |
| Yes | 158 | 82.29 |
| (1)Once | 51(|)265.6(|
| (2)Twice | 3)9(|)20.31(|
| (3)Three times and above | 68(|)35.42(|
| <u>Training topic</u> | | |
| - Sufficiency economy | 21 | 13.29 |
| - Development of basic education | 16 | 10.13 |
| - Preparation of learning facilitation plan | 15 | 9.49 |
| - Plant growing/Organic farming | 15 | 9.49 |
| - Integrated teaching of Agriculture | 12 | 7.60 |
| - Curricular program development | 11 | 6.96 |
| - Classroom research | 8 | 5.06 |
| - Teaching and Learning development | 6 | 3.80 |
| - Measurement and evaluation | 4 | 2.53 |
| - Preparation of professional/local | 3 | 1.90 |
| - Educational Management for ASEAN | 3 | 1.90 |
| - Conservation of natural resources and environment | 2 | 1.27 |
| - Not specify | 42 | 26.58 |

Table 2. An average mean score, standard deviation, and level of problems encountered

| Items | \bar{x} | S.D. | Level of problems | Rank |
|--|-----------|------|-------------------|------|
| 1. An enough number of Agriculture teachers in the school | 3.10 | 1.24 | Moderate | 9 |
| 2. Readiness and responsibility in agricultural teaching | 3.15 | 1.13 | Moderate | 5 |
| 3. Readiness of materials/equipment used for agricultural teaching | 31.7 | 1.01 | Moderate | 4 |
| 4. Appropriateness of time and content as determined | 3.07 | 0.94 | Moderate | 11 |
| 5. Teaching Agriculture subject is successful and can achieve the goals as set | 3.15 | 0.95 | Moderate | 6 |
| 6. Measurement and evaluation of Agriculture subject | 3.03 | 1.02 | Moderate | 14 |
| 7. Affect of place, structure and environment in the school on teaching/learning facilitation planning | 2.82 | 1.08 | Moderate | 20 |
| 8. Educational attainment and knowledge/skills of the Agriculture teacher | 3.05 | 1.32 | Moderate | 12 |
| 9. Awareness of teaching staff on the necessity of Agriculture teaching | 3.11 | 1.21 | Moderate | 8 |
| 10. Attention of school administrators on Agriculture teaching | 3.05 | 1.15 | Moderate | 13 |
| 11. Attention and responsibility of the students taking up Agriculture subject | 31.5 | 1.02 | Moderate | 7 |
| 12. An inappropriate number of students taking up Agriculture subject (too man/few) | 2.96 | 0.92 | Moderate | 17 |
| 13. Attention of parents/guardians on the facilitation of agricultural teaching/learning | 2.87 | 1.01 | Moderate | 18 |
| 14. Teaching/learning materials related to agriculture are enough | 3.00 | 1.04 | Moderate | 16 |
| 15. An opportunity to develop knowledge of the Agriculture teacher | 3.09 | 1.03 | Moderate | 10 |
| 16. Problems in teaching preparation | 2.84 | 0.97 | Moderate | 19 |
| 17. The agriculture teacher has too many duties aside from teaching | 3.31 | 1.21 | Moderate | 2 |
| 18. Problems in supporting budgets | 3.27 | 1.16 | Moderate | 3 |

| | | | | |
|---|-------------|-------------|-----------------|----|
| 19. Classroom and place are not developed to be suitable for the facilitation of agricultural teaching/learning | 3.32 | 1.19 | Moderate | 1 |
| 20. Knowledge and skills in media using of the Agriculture teacher | 3.03 | 1.06 | Moderate | 15 |
| Total | 3.07 | 1.08 | Moderate | |

Table 3. Comparison of problems encountered in the facilitation of agricultural teaching/learning based on school size

| Items | School size | | | | f | Sig. |
|--|-------------|--------|------|-----------|------|------|
| | Small | Medium | Big | Extra big | | |
| 1. An enough number of Agriculture teachers in the school | 3.27 | 3.01 | 3.08 | 2.95 | 0.65 | 0.58 |
| 2. Readiness and responsibility in agricultural teaching | 3.18 | 3.13 | 3.16 | 3.08 | 0.05 | 0.98 |
| 3. Readiness of materials/equipment used for agricultural teaching | 3.05 | 3.27 | 3.40 | 3.00 | 1.18 | 0.31 |
| 4. Appropriateness of time and content as determined | 3.04 | 3.10 | 3.24 | 2.91 | 0.53 | 0.65 |
| 5. Teaching Agriculture subject is successful and can achieve the goals as set | 3.15 | 3.26 | 3.24 | 2.75 | 1.81 | 0.14 |
| 6. Measurement and evaluation of Agriculture subject | 3.01 | 3.05 | 3.12 | 2.91 | 0.17 | 0.91 |
| 7. Affect of place, structure and environment in the school on teaching/learning facilitation planning | 2.70 | 2.87 | 3.12 | 2.75 | 1.01 | 0.38 |
| 8. Educational attainment and knowledge/skills of the Agriculture | 3.21 | 2.93 | 2.84 | 3.16 | 0.82 | 0.48 |
| 9. Awareness of teaching staff on the necessity of Agriculture teaching | 3.25 | 3.00 | 3.00 | 3.16 | 0.61 | 0.60 |
| 10. Attention of school administrators on Agriculture teaching | 2.92 | 3.23 | 3.00 | 2.91 | 0.98 | 0.40 |
| 11. Attention and responsibility of the students taking up Agriculture subject | 3.28 | 3.02 | 3.40 | 2.91 | 1.67 | 0.17 |
| 12. An inappropriate number of students taking up Agriculture subject (too | 2.97 | 2.94 | 3.28 | 2.70 | 1.62 | 0.18 |

| | | | | | | | |
|--------------|---|-------------|-------------|-------------|-------------|-------------|-------------|
| 13. | Attention of parents/guardians on the facilitation of agricultural | 2.82 | 2.87 | 3.08 | 2.79 | 0.44 | 0.72 |
| 14. | Teaching/learning materials related to agriculture are enough | 3.04 | 2.91 | 3.12 | 3.04 | 0.31 | 0.81 |
| 15. | An opportunity to develop knowledge of the Agriculture teacher | 3.21 | 2.95 | 3.32 | 2.91 | 1.37 | 0.25 |
| 16. | Problems in teaching preparation | 2.95 | 2.68 | 3.12 | 2.70 | 1.81 | 0.14 |
| 17. | The agriculture teacher has too many duties aside from teaching | 3.60 | 3.17 | 3.48 | 2.75 | 3.59 | 0.01* |
| 18. | Problems in supporting budgets | 3.48 | 3.27 | 3.20 | 2.75 | 2.48 | 0.06 |
| 19. | Classroom and place are not developed to be suitable for the facilitation of agricultural teaching/learning | 3.27 | 3.38 | 3.68 | 2.91 | 1.80 | 0.14 |
| 20. | Knowledge and skills in media using of the Agriculture teacher | 3.11 | 2.94 | 3.24 | 2.83 | 0.89 | 0.44 |
| Total | | 3.13 | 3.05 | 3.20 | 2.89 | 0.90 | 0.43 |

Remark* There is a statistically significant difference at 0.05 in problems encountered between the extra-big school and the small school.

Table 4. Comparison of problems encountered in the facilitation of agricultural teaching/learning based on years of service

| Items | Years of service | | | F | Sig. | Scheffe |
|--|------------------------|-------------------|------------------------|------|------|---------|
| | Less than 11 years (A) | 11 – 20 years (B) | More than 20 years (C) | | | |
| 1. An enough number of Agriculture teachers in the school | 2.82 | 3.01 | 3.32 | 2.86 | 0.05 | - |
| 2. Readiness and responsibility in agricultural teaching | 3.17 | 3.19 | 3.11 | 0.10 | 0.90 | - |
| 3. Readiness of materials/equipment used for agricultural teaching | 3.32 | 3.09 | 3.13 | 0.79 | 0.45 | - |
| 4. Appropriateness of time and content as determined | 3.11 | 3.13 | 3.02 | 0.29 | 0.74 | - |
| 5. Teaching Agriculture subject is successful and can achieve the goals as set | 3.36 | 3.19 | 3.02 | 1.95 | 0.14 | - |
| 6. Measurement and evaluation of Agriculture subject | 3.17 | 3.11 | 2.89 | 1.41 | 0.24 | - |

| | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|----------|
| 7. Affect of place, structure and environment in the school on teaching/learning facilitation planning | 2.61 | 2.88 | 2.92 | 1.39 | 0.25 | - |
| 8. Educational attainment and knowledge/skills of the Agriculture teacher | 3.15 | 3.01 | 3.01 | 0.20 | 0.81 | - |
| 9. Awareness of teaching staff on the necessity of Agriculture teaching | 3.26 | 3.13 | 3.01 | 0.74 | 0.47 | - |
| 10. Attention of school administrators on Agriculture teaching | 3.25 | 3.07 | 2.92 | 1.34 | 0.26 | - |
| 11. Attention and responsibility of the students taking up Agriculture subject | 3.48 | 3.07 | 3.01 | 3.73 | 0.02* | C*A |
| 12. An inappropriate number of students taking up Agriculture subject (too man/few) | 2.86 | 3.00 | 3.01 | 0.45 | 0.63 | - |
| 13. Attention of parents/guardians on the facilitation of agricultural teaching/learning | 2.96 | 2.92 | 2.79 | 0.50 | 0.60 | - |
| 14. Teaching/learning materials related to agriculture are enough | 3.11 | 2.94 | 2.97 | 0.41 | 0.66 | - |
| 15. An opportunity to develop knowledge of the Agriculture teacher | 3.23 | 3.13 | 2.98 | 0.96 | 0.38 | - |
| 16. Problems in teaching preparation | 3.13 | 2.82 | 2.68 | 3.59 | 0.02* | C*A |
| 17. The agriculture teacher has too many duties aside from teaching | 3.63 | 3.50 | 3.02 | 5.22 | 0.00* | C*A |
| 18. Problems in supporting budgets | 3.53 | 3.50 | 2.98 | 5.29 | 0.00* | C*B, A |
| 19. Classroom and place are not developed to be suitable for the facilitation of agricultural teaching/learning | 3.50 | 3.39 | 3.17 | 1.30 | 0.27 | - |
| 20. Knowledge and skills in media using of the Agriculture teacher | 3.07 | 3.15 | 2.93 | 0.78 | 0.45 | - |
| Total | 3.18 | 3.11 | 2.99 | 1.23 | 0.29 | - |

Remark* The statistically significant level is at 0.05

Conclusion

1. Regarding general data of the respondents, it was found that most of them (68.20%) were male and about one – third (35.94%) were more than 50 years old. More than one – half of the respondents (65.11%) were bachelor's degree graduates. All of the respondent's field of study was related to agriculture. Their years of service were mostly less than 8 years and 25 – 32 years (23.96% each). Most of the respondents were teaching in the medium

school size and used to attend training for enhancing knowledge and developing their instruction for more than 3 times (35.43%). Results of the study also conformed to a study of Thongsuk *et al.* (2013) which found that most of the Agriculture teachers in Surin province were male and their major field of study was related to agriculture. Besides, all of them used to attend training on the development of agriculture teaching.

2. For problems encountered in the facilitation of agricultural teaching/learning, as a whole, it was found at a moderate level (\bar{x} = 3.07). The first three problems were as follows: 1) classroom and place are not developed to be suitable for the facilitation of agricultural teaching/learning (\bar{x} = 3.32); 2) the agriculture teacher has too many duties aside from teaching (\bar{x} = 3.31); and 3) problems in supporting budgets (\bar{x} = 3.27). This conformed to a study of Thongsuk *et al.* (2013) which found that problems encountered in agricultural teaching of Agriculture teachers in Surin province were lack of water in some seasons; agricultural tools were not enough and damaged; lack of budgets for activities of agricultural teaching; teachers had too many duties aside from teaching; and the place was not suitable for activities of agricultural teaching.

3. Regarding to the comparison of problems encountered in the facilitation of agricultural teaching/learning based on the difference in basic attributes of Agriculture teachers: school size, years of service, educational attainment, and training experience, the following were found:

1) There was statistically significance difference in problems encountered on too many duties aside from teaching between the teachers teaching in an extra-big school and those teaching in a small school. This might be because an extra-big school has a lot of students so the school has the policy on school management in many aspects than the small school so it makes teachers there has many duties aside from teaching.

2) There was statistically significance difference in problems encountered of Agriculture teachers having different years of service. This was based on attention and responsibility of students taking up Agriculture subject, teaching preparation, and teachers had too many duties aside from teaching. That was, the teachers having more than 20 years of teaching experience had different problems than those having less than 11 years of teaching experience. This might be because the former has more experience in problem solving than the latter. This conformed to a study of Sathiansiriwivat and Puangsuk (2012) which found that an important problem making teaching/learning Agriculture subject not be able to achieve the goal was the teachers lack of agricultural skills and experience in teaching and they had too many duties aside from teaching. For problems in supporting budgets, the teachers having more than 20 years of teaching experience 11 years of teaching experience. This might be

because the former has more experience in the management of supporting budgets than the latter who lack of this experience.

3) There was statistically significant difference in problems encountered between the teachers having different training experience and educational attainment. This might be because most of the Agriculture teachers (82.29%) always developed themselves on teaching e.g. sufficiency economy learning, preparation of teaching/learning facilitation, organic farming, integrated agricultural teaching, curriculum development, classroom research, et. Besides the Agriculture teachers developed themselves by furthering their study. Based on results of the study, it was found that about one – third of them (33.33%) were master's degree holders and one was a doctoral degree holder.

Recommendation

Based on results of the study, it was found that the respondents had problems encountered in teaching Agriculture subject (top five) in the following:

1. Classroom and place were not suitable for agricultural activities; 2) they had too many duties aside from teaching; 3) they had problems in supporting budgets; 4) materials/equipment for agricultural teaching were not ready; and 5) they had problems in the readiness and responsibility for teaching.

The following were suggestions:

1) School administrators and concerned personnel should place the importance of thefore problems in order to prepare the readiness on policy, supporting budgets, and appropriate working load. Besides, the Agriculture teachers should be promoting to further their study.

2) The Agriculture teachers must always develop themselves e.g. further their study, attend training, networking, etc. in order to develop their effective agricultural teaching.

3) Building coordination with students' parents/guardians and the community for agricultural teaching/learning support.

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