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Facilitation of agricultural skills for promoting future careers of special students at Phrae Panyanukul School in Phrae Province

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Abstract Research findings showed that the agricultural teaching modules on laying hen farming, catfish farming, vegetable growing, quail farming and agricultural yield processing could develop agricultural skills of the students at a moderate up to a highest level. The data collection in the past 5 years found that the students preferred and developed the agricultural skills in activities on laying hen farming the most (64.80%). Overall, about 40% of the students had a good level of agricultural skills ($\bar{x}$ =3.52; S.D =1.452). Only 11.27% needed teacher's suggestions and prompting on agricultural practice. It was found that the student's learning achievement after the promotion was higher than before, with a statistically significant difference level at 0.05. Most of the students (80.28%) could do farming well with their parents, while only 8.45% could do farming independently. Parents of the students were satisfied with agricultural skill development of the students at a high level ($\bar{x}$ =3.65; S.D.=0.308); with the highest level of reason due to its being diverse and continual to gain experience in agricultural career ($\bar{x}$ =4.54; S.D.=0.581). For problems encountered after graduation, most of the students lacked of continuity in agricultural careers and agricultural development (65.50%). For suggestions about agricultural skill development, teaching and learning activities should be arranged in small size. Furthermore, diverse agricultural skills should be promoted to benefit in the daily life activities of the students (90%).

Keywords: Agricultural skills, Future careers, Learning achievement, Special students, Self-reliant

Introduction

The 8th to 12th Plans by the Thai's National Social and Economic Development puts importance on the development of human resource or people in the country. In other words, people are the center for development under quality education to cope with the current rapid change in various aspects. In fact, sustainable development also focuses on the importance of education having the National Education Act as a guideline for education in Thailand

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(Puangsuk, 2020). Aside from the education provision to normal students, it also covers special students having deficiency in intellect, hearing, verbal communication, emotion, body and health. Importantly, the provision of education to these students is different depending on deficiency, or intellectual disabilities (ID), usually have problems in almost all aspects in their daily living activities including learning. This is because, they have learning limitations due to intelligence. Hence, these students need continual practice on essential skills of learning for their future careers, as well as social etiquette (Kruadsungnoen, 2017). The educational facilitation to these students must conform to the Thai National Education Act B.E. (1999), Persons with Disabilities Empowerment Act in Thailand B.E. 2007, Education Management for Persons with Disabilities Act in Thailand, Office of the National Education Commission in Thailand (Ministry of Education, 2020), and the Office of Special Education Administration in Thailand (Ministry of Education, 2019).

As supported by the Ministry of Education in Thailand, the special school educational emphasizes on the development of career skills (soft skills) which is relevant to potential and aptitude of an individual (Guidance System Development Group, 2018). That is, special students choose to learn based on their interest and aptitude under local conformity. Goals and standards of learning management under the career and technology group are: 1) livelihood skills, creative thinking, co-working, code of conduct, knowledge acquisition, awareness of wise resource utilization and; 2) knowledge about needed skills and experience for good attitude towards career development (Ministry of Education, 2019). There are various career skills provided to special students to select based on their interest and potential such as agricultural careers, carpentry, *MorHom* clothes (designing, sewing, packaging, and selling), *Saori* cloth weaving, beauty salon-related, dessert making, herbal beverage making, etc. However, agricultural careers are more interesting as it is relevant to the present agricultural careers of those students' parents.

Agricultural career training is a key factor on the teaching & learning facilitation for special students (also known as Intellectual Deficiency). Phrae Panyanukul School, in the province of Phrae, offers agricultural skill practice for its students to be able to apply it in their daily living activities. It aimed to make special students be self-reliant under the philosophy of sufficiency economy. It is essential that a special lesson plan be prepared exclusively for special students to achive the set goals of learning. In other words, most teaching and learning activities aimed to provide career skills for special students to be able to earn a living in the future (Kruadsungnoen, 2017). Therefore, the teaching and learning facilitation on agricultural skills plays

important roles for the future of the special students in order to satisfy their guardians or parents.

Materials and methods

This study employed qualitative and quantitative methods in order to gain detailed data from the sample group and other concerned (Creswell, 2015; Chalakbang, 2017). In this study, the sample group consisted of 71 upper secondary special students at Phrae Panyanukul School who particularly take the course in agricultural career skills, in the school year of 2016-2020 as shown in Table 1.

Table 1. Number of upper secondary special students at Phrae Panyanukul chool and the sample group school year of 2016-2020

Year	Total number of special students	Special students choosing Agricultural course	%
2016	120	20	16.666
2017	105	18	17.142
2018	95	15	15.789
2019	83	12	14.457
2020	75	6	8.00
Total	478	71	14.853

Source: Academic Affairs Section, Phrae Panyanukul School (2020)

The research instrument in this study were an agricultural career skill learning module and learning assessment form on skill in agricultural career practice (5-point rating scale) (Academic Affairs Section, Phrae Panyanukul School, 2020; Ivanov *et al*., 2018).

Rating Score	Scale Limits	Descriptive Equivalents
5	4.51-5.00	Excellent
4	3.51-4.50	Good
3	2.51-3.50	Moderate
2	1.51-2.50	Poor
1	1.00-1.50	Very poor

Remarks: Excellent = Very good performance and can give suggestions; Good = Good performance and can give suggestions; Moderate = Able to follow suggestions of the teacher, classmates, and others; Poor = The teacher must always warn and give suggestions for practice; Very poor = Lack of interest, little practice, and physical health problem.

In addition, structured interview schedule was used to measure guardians' satisfaction through home visit, annual orientation, and online

media; in the form of a 5-point rating scale (Leekitwattana, 2012; Punpinij, 2011). The assessment criteria were as follows:

Rating Score	Scale Limits	Descriptive Equivalents
5	4.51-5.00	Highest
4	3.51-4.50	High
3	2.51-3.50	Moderate
2	1.51-2.50	Low
1	1.00-1.50	Lowest

The research instrument inspection were detailed as follows:the agricultural career skill learning module was checked and advised by 3 specialists (index to item-objective congruence: IOC=0.80, the learning assessment from skills in agricultural career practice was tried out and were found that (r) = 0.23-0.94, (p) = 0.06-0.73, and reliability value was 0.98 and then it was improved; and 3) the structured interview schedule was checked and advised by 3 specialists for improvement (IOC=0.78). Data were collected and analyzed using content analysis and descriptive statistics, percentage, mean, and standard deviation. T-test (dependent) was conducted to compare learning achievement before and after learning.

Results

Preference of activities that promote learning and development of agricultural occupation skills of the sample group

Preference of activities promoting learning and future agricultural careers of the 71 upper secondary special students at Phrae Panyanukul School are shown in Table 2. This was based on the agricultural career skill learning development module covering egg-laying chicken rearing, quail rearing, catfish rearing, vegetable growing, and agricultural yield processing.

Table 2. Preference and activities promoting learning and future agricultural careers skill development of the sample group

Year	(n = 71)	Agricultural career skill learning development module									
		Egg-laying chicken rearing		Quail rearing		Catfish rearing		Vegetable growing		Agricultural yield processing	
		n	%	n	%	n	%	n	%	n	%
2016	20	14	70.00	1	5.00	3	15.00	1	5.00	1	5.00
2017	18	10	55.56	3	16.67	1	5.55	3	16.67	1	5.55
2018	15	13	86.67	-	-	-	-	2	13.33	-	-
2019	12	5	41.67	2	16.67	1	8.33	4	33.33	-	-
2020	6	4	66.66	-	-	1	16.66	-	-	1	16.67
Total	71	46	64.80	6	8.45	6	8.45	10	14.08	3	4.22

It was found that the sample group preferred egg-laying chicken rearing the most (64.80%) as shown in Tale 2. This was followed by vegetable growing (14.08%), quail rearing (8.45%), catfish rearing (8.45%), and agricultural yield processing (4.22%), respectively.

Quality levels of agricultural career skill practice

The quality level of career skill practice of the sample group with data collection was under the Individual Implementation Plan (IIP) are shown in Table 3.

Table 3. Quality level of agricultural career skill practice of the sample group under the Individual Implementation plan (IIP)

Quality level	(n=71)	(%)
Excellent	28	39.44
Good	10	14.08
Moderate	12	16.90
Poor	13	18.31
Very poor	8	11.27

$\bar{x}$ = 3.52, S.D. = 1.452

It was found that the sample group had an excellent level of quality of agriculture career skill practice ($\bar{x}$ =3.52) as shown in Tale 3. This implied that they had excellent performance and were able to give advice to their classmates and others. Based on its details, the sample group had the excellent quality in agricultural career skill (39.44%). This denoted that thay could perform very well and be their own representatives in this aspect. This was followed by a poor level (18.31%), moderate level (16.90%), good level (14.08%), and very poor level (11.27%), respectively. Learning achievement of the sample group and learning achievement comparison of the sample group based on average mean score before and after learning through the learning module are shown in Table 4.

Table 4. Number of special students, average mean score, standard deviation, t value and statistical significance level

Items	n = 71	Total score	$\bar{x}$	S.D.	t	sig.
Before learning	71	25	10.70	3.547	-23.616*	0.000
After learning	71	25	18.85	2.785		

*Statistical significance level at 0.5

It was found that the average mean score before using the learning module of the sample group was 10.70 with S.D. value of 3.547 wheres that of after was 18.85 with S.D. value of 2.785 n (Table 4). In other words, there was a statistically significant difference level at 0.05; thus, it could be concluded that the learning module could effectively develop agricultural career skills of the sample group.

Application by the sample group of agricultural career skills after using the learning module

Application of agricultural career skills after using the learning module was done through the monitoring of the learning facilitation on agricultural career skill development. The sample group who had graduated, and their guardians, were directly inquired into through various channels such as phone inquiries, home visits, and online media. Results of the monitoring are shown in Table 5.

Table 5. Number and percentage of the sample group on the application of agricultural career skills after graduation

Items	N=71	%
Application to daily living activities	57	80.28
Performing well in an agricultural career, with the family	50	70.42
Hired as contract work	30	42.25
Self-employment in agriculture-related career	6	8.45

The sample group had “skills in agricultural career practice in their activities in daily living the most” (80.28%), followed by “performing well in an agricultural career, with the family” (70.42%), “Hired as contract work (42.25%)” and “Self-employment in agriculture-related career” (8.45%), respectively (Table 5). The satisfaction of the guardians with agricultural skills development of the sample group are shown in Table 6. Data were collected through structured interview schedule, home visits, and direct interview with the sample group and their guardians.

Table 6. Average mean score, standard deviation, and guardians' satisfaction with the development of agricultural skills of the sample group

Items	$\bar{x}$	S.D.	Description	Ranking
1. The teacher clearly informs topics and learning objectives to students and their guardians	3.85	0.839	High	4
2. Learning content and agricultural skill practice steps are exciting, continually, and relative	3.94	0.876	High	3
3. Learning facilitation methods are consistent with learning management of students	3.94	0.880	High	3
4. Teaching media enhance students' ability to understand the learning content in which they can practice it easily and safely	4.31	0.667	High	2
5. Students are given an opportunity to express opinions and solve problems with others	3.85	0.840	High	4
6. Diverse and continual to gain experience in agricultural career	4.54	0.581	Highest	1
7. Have activities for developing skills in agricultural career of students and their guardians	3.13	1.180	Moderate	6
8. Continued monitoring together with suggestions during studying at school	2.56	1.284	Moderate	7
9. The teacher is knowledgeable and has appropriate skills suitable for teaching agricultural skills	3.23	1.098	Moderate	5
10. Have the confidence in the development of agricultural career skills of students to be self-reliant after graduation	3.23	1.098	Moderate	5
Total	**3.65**	**0.308**	**High**	

There was a high level of guardians' satisfaction with the development of agricultural skills ($\bar{x}$ =3.65) as seen in Table 6. The guardians perceived "teachers having had the highest level of continued and diverse facilitation of

activities in agricultural career experience" ($\bar{x}$ =4.54). The other 3 aspects were found at high levels: "teaching media enhance students' ability to understand the learning content easily and practise it safely" ($\bar{x}$ =4.31); "learning facilitation is consistent with the learning method of special students and learning content practice steps can be expected" **(** $\bar{x}$ =3.94) and, "the teachers give an opportunity for students to express opinions and solve problems with others" ($\bar{x}$ =3.85).

Regarding problems encountered after graduation of the sample group, it was found that most of them lacked continuity in pursuing an agricultural career neither was there any agricultural skill development (65.50%). This was followed by problems that family encountered in their agricultural career such as low price of agriculture yields, drought, and flood (52%). The sample student group mostly lived with their grandparents since their parents must work in the city center (48.25%). Furthermore, all of the guardians had suggestions to the development of agricultural skills of the Agriculture teachers such were "teaching/learning activities in the school should be limited to a small size" and "agricultural skills must be diverse". This aimed to make students gain actual experience and agricultural skills in their daily living activities. Continual home visit and monitoring of agricultural career skills development might be a good moral support for the students and their guardians. Moreover, installing of video surveillance cameras (or CCTVs), that can also be accessed with smartphones, for guardians to monitor the performance of the students for any improvement is recommended.

Discussion

The facilitation of Agriculture Teaching and Learning Module is in accordance with the Agriculture courses in all educational levels in Thailand. As a matter of fact, undergraduate and graduate levels put the importance on, or focus on research study related to Agriculture in order to gain new bodies of knowledge for development. Generally, vocational education in Agriculture covers crop/animal husbandry, fisheries, agriculture technology/processing, agri-business, etc. Siriwan (2014) and Panyakom *et al.* (2020) pointed to education in agriculture of all levels, in particular to vocational education certificate-undergraduate level, aim to make the learners gain agricultural career skills and be able to successfully earn a living for personal and professional development. For agricultural education facilitation in basic education level (primary to secondary education), it is intended to conform with the career-learning subject group which aims the learners/students to learn the basic skills in agriculture that can be applied to their daily living activities.

Furthermore, it can practise the learner to have responsibility and code of conduct since agriculture deals with crops & animal husbandry (Sangnate, 2019; Saduak *et al.*, 2017; Siriwan, 1989). In the case of people with agriculture education facilitated for special students, or with disabilities, it is under the curriculum determined by the school on consistence with the locals' careers. Likewise, it can be in the form of nonformal/ informal education offered by both public and private sectors. Surprisingly enough, agricultural activities are believed to have the ability to heal people with disabilities Foundation for Children with Disabilities, 2020; Sopontammarak, 2003; Siriwan, 2014).

Results of the study revealed that the sample student group preferred agricultural activities such as rearing egg-laying chicken the most. This might be because the said activity includes egg collecting, selling, and cooking are fun and enjoyable. This conforms to the study of Saduak and Poungsuk (2021) which found that native and egg-laying chicken rearing in the school's agricultural learning center interests students and also enjoy rearing it. Jaowanna (2020) agreed as well that students having interactive deficiency enjoy rearing egg-laying chicken and quails the most. This might be due to these animals having interactive behaviors (i.e. voice utterance, body movement, and playfulness) with special students.

The findings showed that the sample student group were "excellent" in agricultural career skills ($\bar{x}$ =3.52). This denotes that they have good learning performance and can extend this knowledge or skills to others (39.44%). It meaned that there was a tendency that agricultural career skill promotion can be enhanced special students' ability to earn a living from an agricultural career in the future. It conformed to the guidelines for the facilitation of agricultural education for special students (Academic Affairs Section, Phrae Panyanukul School, 2020). That is, the teacher facilitates mixed learning in various forms e.g. online media, actual practice, authentic media, etc. which interest special students and that they enjoy learning/practising agricultural career skills (Sirirat, 2010). This truth had a higher score effect on posttest than of the pretest on learning achievement. There was statistically significant difference at 0.05 between the pretest and posttest scores. Therefore, It is denoted that the module on agricultural learning activities for skill development is effective and promote agricultural career development. Indeed, the learning achievement is consistent with the monitoring result on the application of skills in agricultural career of the "special students who have already graduated" (80.28%); followed by "performing well in an agricultural career with the family" and "hired as contract work".

In this study, there was 8.45% of the sample student group who can be applied knowledge and skills in agriculture careers to earn a living. This implies that activities on agriculture career skills are satisfactorily successful done. Although the application of skills in agricultural careers acquired at school to real life was not much, but its skills promoted special students to be self-reliant. It conformed to the objectives of the curriculum from the Thai Ministry of Education (Ministry of Education, 2019). In addition, it is found that the sample guardian group were highly satisfied with the agricultural skill development of their children. They also had the highest level of opinion about diverse and continued agricultural learning experience facilitated by the teachers. They suggested that agricultural teaching/learning activities should be arranged in small-sized group incorporating multi-skill agriculture with the aim of students gaining skills and experience that can be practiced in their daily lives. Inclusion of smart agriculture technology in the learning facilitation for special students can be supported channel in promoting learning skill development. Moreover, special students are given an easy access to this technology through social media applications such as Line, Facebook, Tiktok, etc. in combination with agricultural learning activities can aspire better to help overcome any limitations. In addition, home visits and continual monitoring by the teachers can be concerned the moral support for special students and their guardians.

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