



Research Article

Students' opinions about Living Agricultural Learning Center

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Abstract

The number of learning centers related to agriculture and environmental education is increasing in Thailand. However, there is little research on determining opinions about them. This study was carried out to determine student views about one of them. This study is a quantitative survey research. The students' views on Living Agricultural Learning Center in Praibueng Wittayakom Sisaket Province are the characteristics sought to be determined in this research. Participants consisted of 391 students who were enrolled in Agriculture subject, second semester, school year 2021. Opinionnaire for Living Agricultural Learning Center was used for data collection and analyzed by using descriptive statistics and t-test. As a whole, the students had a high level of opinions about the Living Agricultural Learning Center ($\bar{x}=3.61$). In other words, there were 4 dimensions found at a high level and only one dimension found at a moderate level as follows: Instructional Climate ($\bar{x}=3.95$), Activity Facilities ($\bar{x}=3.86$), Gaining Knowledge ($\bar{x}=3.80$), Raising Awareness ($\bar{x}=3.66$), and Relationships with the Community ($\bar{x}=2.77$). It was determined that the students' views about LALC differ in favor of female students according to gender ($t=-6.01$, $p<.01$). In the OLALC sub-dimensions, it was determined that there was only a gender difference in the Instructional Climate and Relationships with the Community dimensions ($p<.01$), students' views about LALC do not differ according to educational attainment ($p>.01$), students' views about LALC do not differ according to achievement ($p>.01$). In the OLALC sub-dimensions, it was determined that there was a differentiation in favor of low success only in the Gaining Knowledge dimensions ($p<.01$). It was determined that the students' views about LALC do not differ according to their parents' occupation ($p>.01$). In this research, the opinions of the students were taken with opinionnaire, but it can be recommended to conduct qualitative research using observations and interviews to obtain more in-depth information.

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Introduction

Many environmental crises are caused by human misconceptions and actions towards the environment. Academics agree that short- and long-term problem solving about the environmental crises must begin with change of people's attitudes towards the environment. Nevertheless, it is not easy because attitudes and factors leading to practice. Indeed, the

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process of change of human's attitudes towards environment must rely on knowledge and understanding about environment so as to be used for decision-making about behavior appropriate to the environment. Importantly, the decision-making is a process which needs problem-solving skills to prevent problems that may happen once again. To develop these skills, it needs to revise value system and the concept of people on the environment for better management of environmental conditions.

Huckle (1991) and Fien & Trainer (1993) agreed that the problem-solving must begin with human. That is, they must understand and perceive value of the relationship between man environment as well as environmental conservation. Therefore, the facilitation of environmental education is essential to the understanding about environmental problems and value of nature. This aims to develop potential of human to be ready to participate in environmental problem-solving in order to exist harmoniously with the environment (Piempongson, 2005).

Environmental education activities and determined to all levels of fundamental education; particularly on secondary school students. According to the 1999 National Education Act, it puts the importance on students and teachers (Government Gazzet (2002). Importantly, article 22, indicates that all students are capable in learning and able to develop themselves. Besides, article 24 states that all agencies concerning with the facilitation of learning process must prepare learning content and activities which are consistent with interest and aptitude of learners as well as individual differences. This includes thinking process, skill practice, application of knowledge for problem-solving, experiential learning, integration of various fields of knowledge, cultivating morals and good values, as well as desired characteristics of students. In addition, teachers are encouraged to arrange on prepare classroom/school environment, teaching media and convenience facilitation for effective teaching/learning. Interestingly, research can be part of a learning process (Office of the Basis Education Commission, 2004).

Actually, the Living Agricultural Learning Center of Praibueng Wittayakom school has the manager of teaching and learning in integrated agriculture with knowledge of other fields as well. This is particularity on agriculture and environment. Examples are waste disposal activities from fruit and vegetable scraps by using them in earthworm feeding. It can be seen that the facilitation of educational activities is essential to develop learners to be complete human resources helping develop their environment. The teaching/learning facilitation by using the Living Agricultural Learning Center is one way to develop learners to achieve learning goals. Therefore, this study aims to gain data for developing teaching/learning activities that integrate knowledge and other activities for efficiency and benefit to learners.

Objective of the Study

This study aimed to explore students' opinions about environmental education activities in the Living Agricultural Learning Center at Praibueng Wittayakom Sisaket Province.

The difference in sex, educational attainment, grade point average, and amity occupation of the respondents had an effect on the difference in their opinions about environmental activities in the Living Agricultural Learning Center.

Method

Research Model

This study is a quantitative survey research. These studies can be used to determine the characteristics of a particular group. The students' views on environmental education activities at the Living Agricultural Learning Center in Praibueng Wittayakom Sisaket Province are the characteristics sought to be determined in this research.

Participants

Sample group of the study consisted of 391 from 1,100 Praibueng Wittayakom students who were enrolled in Agriculture subject, second semester, academic year 2021-2022 (291 lower secondary school students and 178 upper secondary school students).

Socio-economic Structures of the Students

Table 1. Socio-economic structures of students

Variables	n=391	%
Sex		
	Male	154
	Female	237
Studying Level		
	Lower secondary	237
	Upper secondary	154
Grade Point Average		
	Above 2.92	190
	Below 2.93	201
Main Occupation of Parents		
	Agriculture	288
	Others	103

According to Table 1, it was found that most of the respondents were females (60.60%), studying in the lower secondary school level (60.60%) and their grade point average were less than 2.97 (51.40%). More than one-half of their parents' occupation (73.70%) were engaged in agriculture.

Data Collection Tools

Opinionnaire for Living Agricultural Learning Center (OLALC)

Data were collected by using a set of OLALC administered with 391 secondary school students at Praibueang Wittayakom school, Sisaket province. The questionnaire comprised 3 parts: Part 1-socio-economic attributes of the respondents; Part 2-opinions about environmental education activities of the Living Agricultural Learning Center; and Part 3-Suggestions. Correctness and consistency of the questionnaire were checked by 5 specialists (IOC=0.85). The questionnaire was in the form of 5-rating-scale. The distance between each interval was equivalent to 0.80 (Raengprapan, 2000; Leekitwattana, 2016) as follows:

Table 2. Scores and agreement/satisfaction levels

Score	Scale Limits	Description
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 school director gave the researchers permission to gather data. The data that were gathered were examined using frequency, percentage, mean, standard deviation, and t-test (independent variable).

Results

Descriptive Analysis of Students Opinions about Living Agricultural Learning Center

Table 3. Descriptive Analysis of Students Opinions about Dimensions of LALC

Dimensions	Opinion Levels (n = 391)		
	\bar{x}	S.D.	Description
Instructional Climate	3.95	0.48	High
Activity Facilities	3.86	0.39	High
Gaining Knowledge	3.80	0.35	High
Raising Awareness	3.66	0.42	High
Relationships with the Community	2.77	0.53	Moderate
Total	3.61	0.21	High

As a whole, the students had a high level of opinions about the Living Agricultural Learning Center ($\bar{x}=3.61$). In other words, there were 4 dimensions found at a high level and only one dimension found at a moderate level as follows: Instructional Climate ($\bar{x}=3.95$), Activity Facilities A ($\bar{x}=3.86$), Gaining Knowledge ($\bar{x}=3.80$), Raising Awareness ($\bar{x}=3.66$), and Relationships with the Community ($\bar{x}=2.77$).

Table 4. Descriptive Analysis of Students Opinions of Items of LALC

		\bar{X}	S.D.	Level
Dimension 1. Instructional Climate				
1	Appropriate atmosphere/environment	3.95	1.041	High
2	Suitable for teaching/learning	4.35	.684	Highest
3	Suitable for independent study	3.81	1.125	High
4	Having appropriate teaching media and convenience facility	3.56	1.084	High
5	The atmosphere/environment promotes learning and awareness of the importance of environment	4.11	0.899	High
Dimension 2. Activity Facilities				
6	The learning center has diverse environmental activities	3.09	1.053	Moderate
7	Safe environmental activities	4.02	0.908	High
8	Interesting and appropriate with the students' learning level	4.13	0.846	High
9	It promotes self-environmental learning	3.65	1.022	High
10	The sequencing of activities is consistent with environmental activities	2.99	.963	Moderate
11	It is consistent with the practice of environmental education activities	4.06	.680	High
12	It promotes environmental learning	4.13	0.748	High
13	It causes environmental skills	4.23	0.753	Highest
14	It causes the occurrence of good attitude towards environmental conservation in the school	4.36	0.663	Highest
15	It promotes awareness of the importance of environment	4.02	0.847	High
Dimension 3. Gaining Knowledge				
16	Acquired knowledge is appropriate age of the students	4.12	0.797	High
17	Acquired knowledge is diverse	3.94	0.909	High
18	Environmental knowledge is gained from various media in the learning center	2.91	0.912	Moderate
19	Gaining novel and up-to-date environmental knowledge	3.85	1.092	High
20	Acquired knowledge can be applied to daily life activities	4.23	0.744	Highest
Dimension 4. Raising Awareness				
21	Environmental knowledge truly enhances understanding about environment	3.20	0.974	High
22	Perception of the importance and benefit of the school/ community environment	3.79	1.048	High
23	Environmental knowledge and activities create sense of belonging to the beauty of nature/environment in the school/community	4.01	0.931	High
24	Worrying about what will happen to environment such as deterioration and destruction	3.92	0.771	High
25	The environmental conservation will be beginning with you yourselves	4.11	0.809	High
26	You will suggest your friends to pay attention to environment	2.95	1.129	Moderate
Dimension 5. Relationships with the Community				
27	The community participates in environmental activities	2.79	0.938	Moderate
28	Local scholars extend knowledge about community environment	2.30	0.891	Low
29	Dissemination of environmental knowledge to the community	3.38	1.096	High
30	Having educational trips and environmental activities in the community around the school	2.63	1.037	Moderate
31	Your environmental knowledge and experience can help solve problems environment in the community	2.76	1.206	Moderate

Differentiation on the Socioeconomic Characteristics of Students

According to the comparison, the following were found: As a whole, the male and female respondents had no statistically significant difference at 0.01 in terms of their opinions about environmental education activities in the learning center. Based on its details, there was statistically significant difference at 0.01 in terms of atmosphere/environment and relationships with the community (Table 5). The difference in educational attainment of the respondents had no effect on the statistically significant difference in their opinions about environmental education activities (Table 6). The difference in grade point average of the respondents had no effect on the statistically significant difference in their opinions about arrangement of environmental education activities. Based on its details, however, there was statistically significant difference at 0.01 on the basis of knowledge about environmental education (Table 7). The difference in occupation of the respondents' parents had no effect on the statistically significant difference in their opinions about environmental education activities of the learning center (Table 8).

Table 5. The differentiation in the level of students views about the LALC according to their gender

Dimensions	Male (n =154)		Female (n =237)		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
Instructional Climate	3.81	0.46	4.04	0.48	-4.78	0.00**
Activity Facilities	3.89	0.37	3.85	0.40	0.94	0.34
Gaining Knowledge	3.78	0.37	3.82	0.34	-0.81	0.41
Raising Awareness	3.62	0.37	3.68	0.44	-1.50	0.13
Relationships with the Community	2.55	0.45	2.90	0.53	-6.70	0.00**
Total	2.53	0.18	3.66	0.31	-6.01	0.00**

**statistical significance level at 0.01

As it can be seen in Table 5, it is seen that the students' views about LALC differ in favor of female students according to gender ($t=-6.01$, $p<.01$). In the OLALC sub-dimensions, it was determined that there was only a gender difference in the Instructional Climate and Relationships with the Community dimensions ($p<.01$).

Table 6. The differentiation in the level of students views about the LALC according to their educational attainment

Dimensions	Lower secondary (n =237)		Upper secondary (n =154)		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
Instructional Climate	3.94	0.46	3.96	0.52	-0.42	0.67
Activity Facilities	3.85	0.39	3.88	0.39	-0.74	0.45
Gaining Knowledge	3.79	0.37	3.82	0.33	-0.75	0.44
Raising Awareness	3.68	0.40	3.63	0.45	0.94	0.34
Relationships with the Community	2.77	0.53	2.75	0.54	0.35	0.72
Total	3.61	0.21	3.61	0.22	-0.15	0.87

**statistical significance level at 0.01

As seen in Table 6, it is seen that the students' views about LALC do not differ according to educational attainment ($p>.01$).

Table 7. The differentiation in the level of students views about LALC according to their achievement

Dimensions	Below 2.97 (n =201)		Above 2.97 (n =190)		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
Instructional Climate	3.94	0.50	3.97	0.47	-0.59	0.55
Activity Facilities	3.84	0.42	3.39	0.36	-1.20	0.23
Gaining Knowledge	3.87	0.31	3.74	0.38	3.69	0.00**
Raising Awareness	3.67	0.44	3.65	0.39	0.32	0.74
Relationships with the Community	2.82	0.54	2.71	0.52	1.97	0.05
Total	3.63	0.21	3.59	0.21	1.59	0.11

**statistical significance level at 0.01

As seen in Table 7, it is seen that the students' views about LALC do not differ according to achievement ($p>.01$). In the OLALC sub-dimensions, it was determined that there was a differentiation in favor of low success only in the Gaining Knowledge dimensions ($p<.01$).

Table 8. The differentiation in the level of students views about LALC according to their parents' occupation

Dimensions	Agriculture (n = 288)		Others (n =103)		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
Instructional Climate	3.97	0.51	3.90	0.39	1.13	0.25
Activity Facilities	3.84	0.37	3.92	0.43	-1.58	0.11
Gaining Knowledge	3.82	0.35	3.75	0.35	1.70	0.09
Raising Awareness	3.64	0.44	3.70	0.35	-1.29	0.19
Relationships with the Community	2.78	0.54	2.73	0.51	0.69	0.49
Total	3.61	0.22	3.60	0.19	0.35	0.72

**statistical significance level at 0.01

As seen in Table 8, it is seen that the students' views about LALC do not differ according to their parents' occupation ($p>.01$).

Conclusions and Discussions

Results of the study could be concluded and discussed as follows: As a whole, the respondents had a high level of their opinions about environmental education activities of the Living Agricultural Learning Center. Based on its details, there were 4 aspects found to have a highest level. They were: 1) activities in the learning center caused good attitudes towards the school environmental conservation; 2) atmosphere/environment in the school was suitable for teaching/learning environmental education; 3) the environmental education activities caused the occurrence of environmental skills; and 4) acquired knowledge could be applied to daily life activities, respectively. This implied that the students participating in activities of the environmental education acquired basic environmental knowledge and skills. It might be because these activities of the learning center were consistent with environmental education activities. Examples of these activities included: garbage disposal from agricultural residences; facilitation of national learning center environment; and garbage sorting in the learning center. In addition, students having good attitudes toward environmental education tended to paying attention in learning and understand environment more than even. This conformed to a study of Tinnungwattana (2008) which found that learners had an increase in environmental knowledge and participation in environmental conservation after using a model of environmental education. This also conformed to a study of Palmer and Neal (1994) cited in Piempongson (2005) that environmental education is a process causing awareness of good value to develop needed attitudes and skills in environment. Besides, environmental education enhances the practice of skills in decision-making and conclusion making about quality of environment. Furthermore, Chinatrakul (2004) asserted that extracurricular activities in environmental education serve to promote positive attitudes and make the most of face time in addition to reinforcing subject matter knowledge. Additionally, Rotsawang (1991) proposed that teaching agriculture students about subjects that are pertinent to the agricultural and forestry environments. For agricultural learners, this entails fostering a positive attitude toward the environment, which topic material and practical practice are required to create the environment for use, as opposed to studying said content and practicing it in an educational setting before applying it to one's actual job.

As a whole, the respondents had a moderate level of opinions about environmental education activities based on relationships with the community. This might be because the learning center still had few activities participated by the community. This conformed to a study of Sri-Ultha (1999) which found that there was a moderate level of problems encountered in community participation.

A statistically significant variation in the respondents' opinions of the environmental education activities of the learning center was caused by the respondents' gender. This may be due to the variety of environmental education

activities included in the learning facility, including farming, animal domestication, garbage disposal, and waste-based inventions. The findings of Phupakdi (2010) and Srisuantaeng (2013), who discovered that male and female students had distinct attitudes about learning about agriculture and the environment in schools and the community, are compatible with the study by Saduak et al. (2015). A statistically significant variation in the respondents' opinions of the environmental education activities of the learning center was caused by the respondents' different sexes. This related to the surroundings, atmosphere, and interactions with the locals. Possible explanation: Female students may have been more sensitive than male students. As a result, rather than the needs of male students, they tended to place more value on the atmosphere/environment and relationships with the community. The statistically significant difference between the respondents' responses to questions about environmental education activities at the learning center was influenced by the respondents' different grade point averages. This referred to understanding of environmental education. It could be as a result of the fact that students with high grade point averages tended to pay attention.

Recommendations

Recommendations for Applicants

According to results of the study, the respondents had a moderate level of opinions about relationships with the community. However, their opinions about knowledge about environment in the community extended by the community scholar was found at a low level. The following were suggestions: The learning center should make a plan having local scholar/community participation which may interest students more than even. Facilitation of community participation such as educational trip and environmental activity in the community. Sequencing of agricultural activities in the learning center to be consistent with environmental activities more than even.

Recommendations for Further Research

The development of a model for integrating agricultural activities in the learning center should be studied to be consistent with environmental education activities. This aims to make the learning center be a learning center that is fully integrated and maximizes benefits. Investigation of guidelines for creating relationship with the community to develop environmental education facilitation. Investigation of the development of environmental education curriculum in the school by using the Agricultural Learning Center as base. In this research, the opinions of the students were taken with opinionnaire, but it can be recommended to conduct qualitative research using observations and interviews to obtain more in-depth information.

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Appendix 1. Opinionnaire for Living Agricultural Learning Center (OLEC)

Opinionnaire for Living Agricultural Learning Center (OLEC)						
1 Totally Disagree 2 Disagree 3 Notral 4 Agree 5 Totally Agree						
	Items	1	2	3	4	5
Dimension 1. Instructional Climate						
1	Appropriate atmosphere/environment					
2	Suitable for teaching/learning					
3	Suitable for independent study					
4	Having appropriate teaching media and convenience facility					
5	The atmosphere/environment promotes learning and awareness of the importance of environment					
Dimension 2. Activity Facilities						
6	The learning center has diverse environmental activities					
7	Safe environmental activities					
8	Interesting and appropriate with the students' learning level					
9	It promotes self-environmental learning					
10	The sequencing of activities is consistent with environmental activities					
11	It is consistent with the practice of environmental education activities					
12	It promotes environmental learning					
13	It causes environmental skills					
14	It causes the occurrence of good attitude towards environmental conservation in the school					
15	It promotes awareness of the importance of environment					
Dimension 3. Gaining Knowledge						
16	Acquired knowledge is appropriate age of the students					
17	Acquired knowledge is diverse					
18	Environmental knowledge is gained from various media in the learning center					
19	Gaining novel and up-to-date environmental knowledge					
20	Acquired knowledge can be applied to daily life activities					
Dimension 4. Raising Awareness						
21	Environmental knowledge truly enhances understanding about environment					
22	Perception of the importance and benefit of the school/ community environment					
23	Environmental knowledge and activities create sense of belonging to the beauty of nature/environment in the school/community					
24	Worrying about what will happen to environment such as deterioration and destruction					
25	The environmental conservation will be beginning with you yourselves					
26	You will suggest your friends to pay attention to environment					
Dimension 5. Relationships with the Community						
27	The community participates in environmental activities					
28	Local scholars extend knowledge about community environment					
29	Dissemination of environmental knowledge to the community					
30	Having educational trips and environmental activities in the community around the school					
31	Your environmental knowledge and experience can help solve problems environment in the community					

