



The Distance Learning Model on Cross-Cultural Agriculture: A Case Study of Thai and American 4-H club

SINEENUCH KHRUTMUANG SANSERM*

School of Agriculture and Cooperatives, Sukhothai Thammathirat Open University, Nontaburi, Thailand

Email: sineenuch.san@stou.ac.th, tukstou@hotmail.com

BUMPEN KEOWAN

Sukhothai Thammathirat Open University, Nontaburi, Thailand

BENCHAMAS YOOPRASERT

Sukhothai Thammathirat Open University, Nontaburi, Thailand

NAREERUT SEERASARN

Sukhothai Thammathirat Open University, Nontaburi, Thailand

PONSARAN SARANROM

Sukhothai Thammathirat Open University, Nontaburi, Thailand

Received 15 January 2020 Accepted 29 October 2021 (*Corresponding Author)

Abstract: Learning in the digital age of the 21st century and globalization era, a knowledge-based society, expects students to master the 21st century skills or global competencies rather than being excelled in their academic performance. The cross-cultural learning concept supports learning in this era that focuses on the learning of diverse people and cultural differences by organizing mutual learning on issues of mutual interests to create wide and varied learning in line with the needs of the learners and the current trend of global change. This learning is also in accordance with the needs of 4-H club members that has a variety of learning needs as well as having a variety of learning styles. The objectives of this research were to develop and evaluate a learning model on cross-cultural distance education in agriculture. The research and development model were used. The populations were 1) 162 4-H club members from Thailand and the United States. Quantitative data were collected from the sample size of 75 using a questionnaire and analyzed using descriptive statistics. 2) educational experts in Thailand and the United States. 15 experts was determined by using purposive sampling method. Qualitative data was collected using focus group and analyzed by content analysis. The results showed that developing a learning model according to the 4-H needs included learning interest, expectation, experiences, and knowledge. The development of a model of distance learning management in cross-cultural agriculture for 4-H is divided into 4 phases as follows: seminar defining the learning model, implementation of learning model, evaluation of learning Model, and conducting seminar and summarizing the learning model. From the evaluation of learning model regarding learning characteristics, learning methods, learning channels and tools, learning period, learning style and learning support, 4-H revealed that they were appropriate usefulness and satisfaction at high level and highest level.

Keywords learning model, cross-cultural, distance education, agriculture, 4-H club

INTRODUCTION

Learning in the digital age of the 21st century and the globalization era is a knowledge-based affair. Students are expected to master 21st-century skills as well as global competencies apart from excelling in their academic performance (Turiman, 2011; OECD, 2018), which is driven by creative

power and involves the potential of knowledge and wisdom combined with the advancement of information and communications technology (Sanguankaew, 2008). The curriculum in the 21st century focuses on critique attributes, interdisciplinary project-based activities, and research-driven coursework that can connect local communities, countries and the world. Occasionally, students can collaborate with various projects around the world using a curriculum that emphasizes advanced thinking skills, multiple intelligence, technology and multimedia (Sangkhaphan, 2013, p. 14)

The goal of Thailand and the United States' 4-H operations is to develop and empower agricultural youth. This was done by establishing a 4-H groups in schools to promote and encourage 4-H members to gain knowledge and technology related to agriculture, strengthen their agricultural skills and create attitudes to passion and interest in agriculture and agricultural professions. Furthermore, the goal is also to develop leadership, thinking, and problems solving skills that can be applied in their life in the future, especially in globalization and in the 21st century.

The cross-cultural learning concept supports learning in the digital age, focusing on the learning of diverse groups of people and cultural differences by organizing mutual learning on issues of mutual interests in order to create wide and varied learning in line with the needs of learners and the current trends of global advancement. This learning is also in line with the needs of 4-H club members that have a variety of learning needs as well as having a wider variety of learning styles with the use of modern technology for learning. Consequently, there is a need for novel forms of communication through social media, chat platforms, and bulletin boards (Weeranakin et al., 2013; Weeranakin et al., 2014).

Distance learning can transcend geographical boundaries, differences in socio-cultural contexts, values, and expectations of diverse educational systems, though learners may prove to be its greatest challenge (Gunawardena, 2014). Distance education is consistent with learning management in the 21st century that focuses on self-directed learning through the use of a variety of media. Therefore, the application of distance education concepts in cross-cultural learning management between Thai and American 4-H clubs involves the transfer of knowledge to and between learners in each country through various types of media, thus allowing learners to have the opportunity to continuously learn by themselves broadly and with cost-effectiveness.

For the reasons mentioned above, the researchers developed this study. It concerns the development of learning styles that are in line with the needs of young people in the 21st century who want to learn from a variety of media and be able to connect local communities in their country with the world through collaboration with global projects. Moreover, the information can be synthesized as a guideline for the development of a model for managing distance learning across cultures, in line with the needs of young people in the 21st century.

OBJECTIVES

The objectives of this research were to develop and evaluate a learning model on cross-cultural distance education in agriculture of 4-H clubs in Prachamongkol School and Purdue Extension.

METHODOLOGY

This research used the research and development model. Data was collected in both quantitative and qualitative research (Creswell, 2012). The populations were 1) 112 members of the 4-H club at Prachamongkol School, Kanchanaburi Province in Thailand and 50 members of the 4-H club of the Legacy Learning Center from Marion County under the extension services of Purdue Extension of Purdue University, Indiana, USA., totaling 162 persons. Quantitative data were collected from the sample size of 75 using a questionnaire containing questions on a five-point Likert scale and analyzed using descriptive statistics. The questionnaire was divided into 4 parts including general information, the context and operating conditions of 4-H, agricultural learning management, and the need of 4-H for cross-cultural distance learning. 2) Educational experts in Thailand and the United States. 15 experts was determined by using purposive sampling method. Qualitative data

was collected using focus group and analyzed by content analysis. The research conceptual framework as shown in Fig. 1.

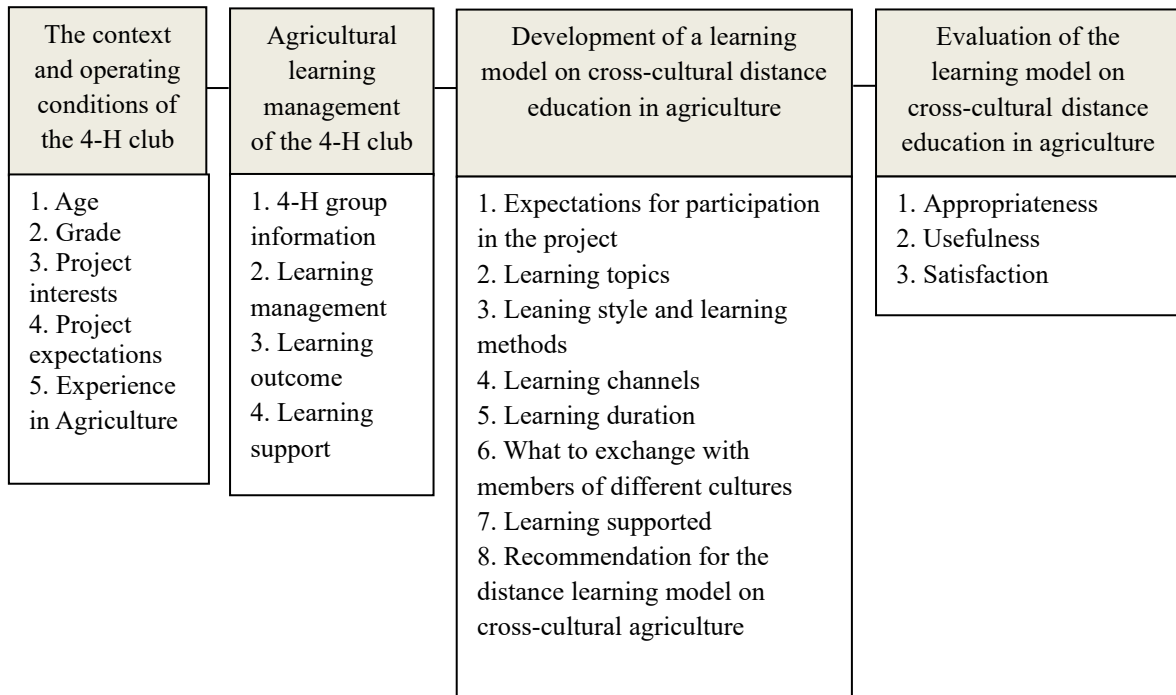


Fig. 1 The conceptual framework of the research

RESULTS AND DISCUSSION

The Context and Operating Conditions of 4-H Club in Prachamongkol School and Purdue Extension

Thai and American 4-H club context and operating conditions are as follows: 70.0% of Thai 4-H were females with an average age of 15.02 years old, 36.0% of whom were studying in 7th grade, while 64.0% of American 4-H were females with an average age of 13.56 years with 52.0% studying in 6th grade. Most of them were interested in joining the project to exchange cross-cultural learning. In terms of culture, agriculture and food in foreign countries, most of the expectations of 4-H members in the project were to get to know and talk to new friends, speak languages, and learn about the culture of foreign life. Based on the findings, there can be a discussion that in term of new generation in the 21st century, 4-H club members who want to connect the world has a variety of learning needs, learning styles with the use of modern technology for learning such as social media. The school should provide opportunities for student growth through exploring the global through collaboration with projects.

Agricultural Learning Management of 4-H club in Prachamongkol School and Purdue Extension

Agricultural learning management of 4-H club in Prachamongkol School consisted of learning by doing, constructivism learning, cooperative learning, learning by technology. Agricultural learning management of 4-H club in Purdue Extension School consisted of school enrichment, special interest programs, after school, camps and conferences. Based on the findings, there can be a discussion that the learning management for 4-H club should get in line with the curriculum in the

21st century that focuses on the critique attributes, interdisciplinary project-based, research-driven, and connecting local communities with countries and the world.

Development of Learning Model on Cross-Cultural Distance Education in Agriculture of 4-H Club in Prachamongkol School and Purdue Extension

Development of learning model on cross-cultural distance education in agriculture was conducted in 4 phases as follows: 1) seminar defining the learning model on cross-cultural distance education in agriculture, 2) implementation of learning model on cross-cultural distance education in agriculture, 3) evaluation of learning model on cross-cultural distance education in agriculture, and 4) conducting seminars and summarizing the learning model on cross-cultural distance education in agriculture as shown in Fig. 2.

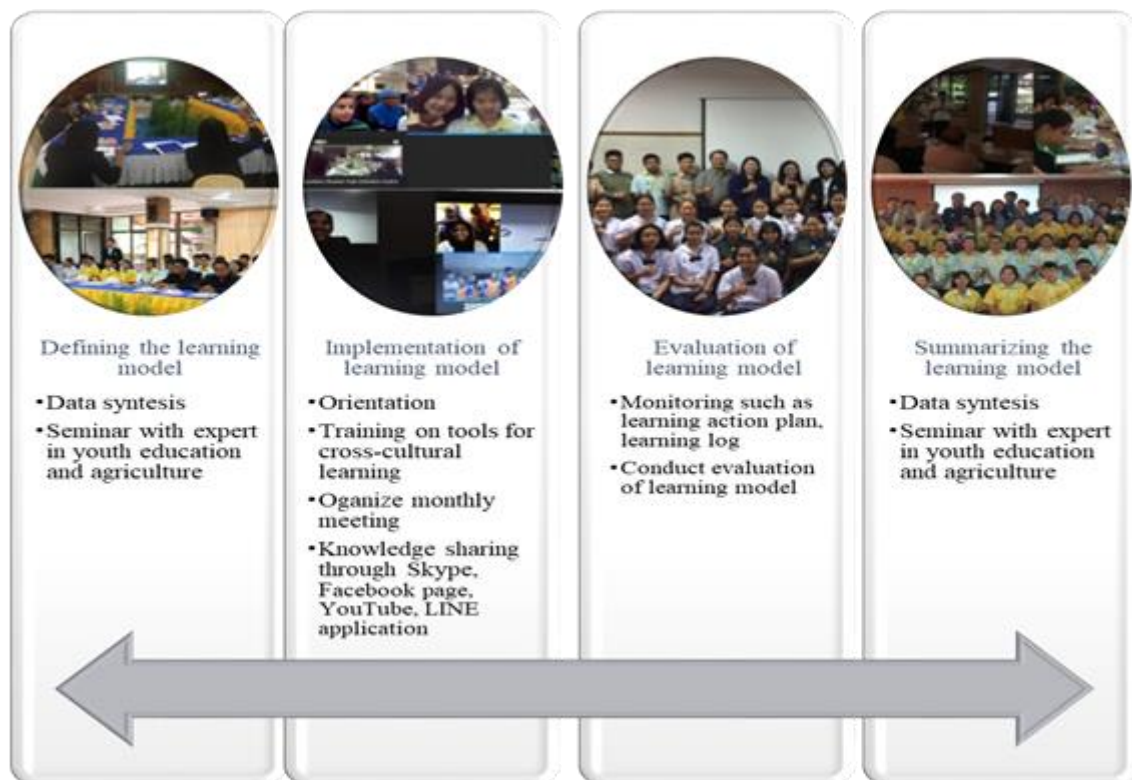


Fig. 2 Development of learning model on cross-cultural distance education in agriculture of 4-H club

The learning model on cross-cultural distance education in agriculture of 4-H club was designed based on student needs such as learning topics, learning time and learning channels. Many social media were used for this learning model including 1) Facebook page; Thai-American 4-H, <https://www.facebook.com/thaiamerican4H>, 2) YouTube; for examples, <https://youtu.be/4p1yguMWvII>, <https://youtu.be/GMGP1qA8tsY>, and 3) LINE application. This learning model are in line with the needs of 4-H who want to learn from a variety of media to be able to connect local communities to the country and the world through collaboration with projects.

Evaluating of the Learning Model on Cross-Cultural Distance Education in Agriculture of 4-H Club in Prachamongkol School and Purdue Extension

The evaluation of learning management model on cross-cultural distance education was to assess the learning styles and learning methods in 3 areas which are suitability, usefulness and satisfaction.

Each area will evaluate in 6 aspects including learning characteristics, learning methods, learning channels and tools used in learning, learning duration, learning style, and learning support. It was found that the evaluation of learning styles and learning methods in all 6 aspects, Thai and American 4-H club considered its appropriate usefulness and satisfaction at the high to highest level (Mean ranged from 3.64-4.74) as shown in Table 1.

Table 1 Evaluation of 6 aspects of learning styles and learning methods in appropriate usefulness and satisfaction

Issue	Appropriate		Usefulness		Satisfaction	
	Thai 4H (\bar{X})	American 4-H (\bar{X})	Thai 4H (\bar{X})	American 4-H (\bar{X})	Thai 4H (\bar{X})	American 4-H (\bar{X})
1. Learning style						
1) Student-centered learning	4.18	4.36	4.18	4.20	4.16	4.12
2) Project Based learning	4.02	4.24	4.16	4.24	4.06	4.08
3) Learning by doing	4.30	4.12	4.38	4.16	4.42	4.32
2. Learning tools						
1) Discussion	4.04	4.04	4.02	4.00	3.94	4.00
2) Training	4.16	4.16	4.28	4.20	4.02	3.96
3) Demonstration	4.32	4.52	4.34	4.36	4.14	4.24
4) Group activities	4.26	4.40	4.12	3.88	4.02	3.96
5) Video	4.06	4.12	4.06	4.12	4.20	4.40
3. Learning Channels						
1) Facebook	4.52	4.48	4.64	4.56	4.44	4.36
2) Skype	4.28	4.16	4.46	4.32	4.38	4.36
4. Learning time						
1) Duration of learning throughout 4 months	4.16	4.16	4.18	3.96	4.24	4.24
2) Time to exchange						
2.1) Sunday (6.00-8.00 p.m.)	4.24	4.24	4.28	4.20	4.00	4.08
2.2) Monday (6.00-8.00 p.m.)	3.94	3.76	4.00	3.72	3.96	3.64
5. Learning methods						
1) Large group exchange once a month						
1.1) Between 4H Thai-American	4.52	4.52	4.30	4.40	4.26	4.32
1.2) In each school	4.42	4.60	4.34	4.40	4.22	4.16
2) Exchange subgroups						
2.1) Between 4H Thai-American	4.56	4.60	4.16	4.20	4.38	4.40
2.2) In each school	4.48	4.60	4.18	4.32	4.26	4.20
3) Exchange subgroups on issues of interest	4.18	4.12	4.14	4.00	4.20	4.16
4) Learning from project implementation	4.36	4.36	4.36	4.00	4.16	4.12
5) Exchange using video	4.32	4.36	4.34	4.28	4.32	4.40
6) Exchange of learning through Skype	4.46	4.44	4.34	4.20	4.18	4.00
7) Sharing Learning through Facebook	4.46	4.44	4.42	4.48	4.38	4.60
6. Learning Supported						
1) Teacher Consultant	4.74	4.60	4.62	4.60	4.48	4.32
2) School administrators	4.12	4.04	4.18	4.20	4.20	4.20
3) Parents	4.34	4.28	4.28	4.20	4.20	4.08
4) Operators from Sukhothai Thammathirat Open University	4.32	4.32	4.28	4.28	4.40	4.36
5) Operators from Purdue Extension	4.54	4.56	4.40	4.40	4.46	4.44
6) Related agencies	4.24	4.20	4.16	4.04	4.12	4.04

Based on the findings, there can be a discussion that the implications of this study are for teacher and school to provide opportunities for student growth through exploring the global through collaboration with projects around the world and to engage in the advancement of information and communication technology in learning. The learning model for cross-cultural distance education in agriculture between the 4-H club should be flexible and fit to students needs such as learning topics, learning styles, learning methods, learning tools, learning channels, learning time and learning supported. In order to prepare 4-H club and youth for an inclusive and sustainable world, it should be done by preparing them with the global competencies which is the capacity to be able to examine local, global and intercultural issues, to understand and appreciate the perspectives and world views of others, to engage in open, appropriate and effective interactions with people from different cultures, and to act for collective well-being and sustainable development (OECD, 2018). Furthermore, student should engage in the cross cultural learning to see the world and explore the different cultures to be fully engaged in the experience.

CONCLUSION

The results show that in terms of the context and operating conditions of Thai and American 4-H club, most of them were interested in joining the project to exchange cross-cultural learning. In terms of culture, agriculture and food in foreign countries, most of the expectations of 4-H members in the project were to get to know and talk to new friends, speak languages, and learn about the culture of foreign life. Agricultural learning management of 4-H club included learning by doing, constructivism, cooperative learning, learning by technology, school enrichment, special interest programs, after school, camps and conferences. Development of learning model on cross-cultural distance education in agriculture was conducted in 4 phases as follows: 1) seminar defining the learning model on cross-cultural distance education in agriculture, 2) implementation of learning model on cross-cultural distance education in agriculture, 3) evaluation of learning model on cross-cultural distance education in agriculture, and 4) conducting seminars and summarizing the learning model on cross-cultural distance education in agriculture. The evaluation of learning management model on cross-cultural distance education was to assess the learning styles and learning methods in 3 areas which are appropriate, usefulness, and satisfaction. Each area was evaluated in 6 aspects including learning characteristics, learning methods, learning channels and tools used in learning, learning duration, learning style, and learning support. It was found that Thai and American 4-H club considered its appropriate, usefulness, and satisfaction at the high to highest level (Mean ranged from 3.64-4.74)

ACKNOWLEDGEMENTS

Authors are extremely thanks to Sukhothai Thammathirat Open University, Prachamongkol School, Karnchanaburi Province in Thailand, Purdue Extension of Purdue University, and The Legacy Learning Center from Marion County, Indiana, USA. for participated this study. We would like to acknowledge to Thai-American 4-H for providing their times and share their knowledge to contribute this research and development study.

REFERENCES

- Charlotte, N.G. 2014. Globalization, culture and online distance learning. 75-107, In Olaf Zawacki-Richter and Terry Anderson (Eds.), *Online Distance Education, Towards a Research Agenda*, AU Press, Athabasca University, Canada, Retrieved from <https://doi.org/10.15215/aupress/9781927356623.01>
- Creswell, J.W. 2012. *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, Sage Publications, California.
- OECD. 2018. *Preparing our youth for an inclusive and sustainable world: The OECD PISA global competence framework*. The Organisation for Economic Co-operation and Development (OECD), Directorate for

- Education and Skills, France, Retrieved from <https://www.oecd.org/education/Global-competency-for-an-inclusive-world.pdf>
- Sangkhaphan, S. 2013. 21st century skills: Why? “Teach less, Learn more”, Retrieved from http://www.srn2.go.th/index.php?option=com_content&view=article&id=145:-21-&catid=44:2013-06-18-04-59-02&Itemid=74
- Sanguankaew, C. 2008. Dual mode: Learning in the 21st century. Retrieved from http://www.ku.ac.th/icted2008/download/learning2_chadaporn.pdf
- Turiman, P., Omar, J., Mohd, D.A. and Osman, K. 2011. Fostering the 21st century skills through scientific literacy and science process skills. UKM Teaching and Learning Congress 2011, Retrieved from <https://core.ac.uk/download/pdf/82704246.pdf>
- Weeranakin, N., Zaton, S., Raksong, O., Asanok, M., Pongpipat, S. and Moolvilai, S. 2015. Developing an e-learning model of rice farming for young farmers in Thailand. Rajamangala University of Technology Isan, Faculty of Social Technology, Kalasin Campus, Retrieved from <https://www.tci-thaijo.org/index.php/eduku/article/view/78558>
- Weeranakin, N., Zaton, S., Tabsombut, P., Chalernsuk, T. and Moolvilai, S. 2014. The development of model of online farming Kaowong Kalasin Sticky Rice Learning Center for new generation farmers in Kaowong district, Kalasin Province. Rajamangala University of Technology Isan, Faculty of Social Technology, Kalasin Campus, Retrieved from <http://ird.rmuti.ac.th/newweb/search/research.php?rs=1679>