INTEGRATING ONE HEALTH CORE COMPETENCIES FOR MULTI-DISCIPLINES WORKFORCE PROGRAM : A REPORT

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Abstract

This paper reports on the results of the training by integrating One Health Core Competencies (OHCC) for multi-disciplines workforce program. This training program was the joint collaboration by the Faculty of Veterinary Medicine and Faculty of Education, Kasetsart University, Thailand. The university strengthened training aimed to 1) enable multidisciplinary participants to coordinate and to understand One Health Concept and OHCC, 2) improve cooperation and multidisciplinary collaboration among professional lecturers who were interested in One Health principle, 3) provide practical strategies useful for teaching OHCC, and, 4) increase exposure, implement and apply OHCC for undergraduate students teaching course: "Fundamental OHCC course for multidisciplinary students" that is a general education course of Kasetsart University. During 2 days-training program, professional skills were developed and harmonized among 39 participants from 13 faculties who were interested in volunteering to participate in this project through interactive learning activities. The data were collected from all participants whom were asked to respond to the Self-Evaluation Questionnaire and Satisfaction Survey. All participants took the 5 rating scales Self-Evaluation Questionnaire prior to and after the training program and took the Satisfaction on training program Survey after the training program. According to the participant self-evaluation, they recognized that One Health was useful for daily life of every disciplines and could apply for better individual health. Active learning skills including Systems Thinking, communication techniques, leadership, collaboration and partnership were necessary for students in the 21st century. Beside Health Science, finally One Health Concept could be expanded through different disciplines in Kasetsart University in both lecturers and students following the concept of "One World One Health".

Keywords: One Health Core Competencies (OHCC), Active Learning, Multi-Disciplines

INTRODUCTION

One Health (OH) approach recognized that the health of human, animals and environment are interdependent and that promoting optimal health in any of these sectors requires cross-sectorial collaboration, communication and respect (Centers for Disease Control and Prevention, 2017). The multidisciplinary nature of OH approach needs OH professionals are proficient in knowledge, skill, behaviors and attitudes that go beyond the discipline-specific knowledge. One Health Core Competencies (OHCC) is critical to prepare OH workforce to tackle the complex health threats by working collaboratively Education and training programs which incorporate these core competencies will create the workforce for better able to address OH challenges (THOHUN, 2017).

The faculty of Veterinary Medicine and Faculty of Education, Kasetsart University, Bangkok, are the members of Thailand One

Health University Network (THOHUN). The staffs from both faculties have experiences on working and providing knowledge on OH education and researches.

Last year project, both faculties had successfully created a course which integrated the fundamental knowledge on One Health Core Competencies (OHCC) into a general course of KU. The student and facilitator guides were developed with activities and assessment tools etc.

After last year project achievement, we had set a goal to train the facilitators in the multidisciplinary fields to fulfill our goal, we created the training program for integrating OHCC for multi-disciplines Workforce which have shown to be one of the joint collaboration that successfully conducted by 2 faculties. This OHCC integrating training program was created for multidisciplinary facilitators in order to have proficient in knowledge, skills, behaviors, and attitudes that go beyond the discipline-specific knowledge gained more than the traditional training program.

This training of the trainers: integrating One Health Core Competencies for Multi-disciplines Workforce Program is part of OHCC educational and training designed to be a source of information training workshops focused on OH professionals responsible for human, domesticated animal, wildlife and ecosystem/environmental health. Professional lecturers from 13 faculties such as Faculty of Agriculture, Business Administration, Economics, Education, Engineering, Environment, Agro-Industry, Forestry, Humanities, Science, Social Science, Veterinary Medicine and Veterinary Technology of Kasetsart University were volunteered participation on the training program which will enable them to better coordinate and implement OHCC teaching modules and to harmonize their professional skills guided by OHCC domains.

GOALS AND OBJECTIVES

The university strengthened training aimed to:

1) Enable multidisciplinary participants to coordinate and understand One Health Concept and One Health Core Competencies (OHCC).

2) Improve cooperation and multidisciplinary collaboration among professional lecturers who were interested in One Health Principles.

3) Provide practical strategies useful for teaching OHCC and,

4) Increase exposure, implement and apply OHCC for undergraduate students teaching course: "Fundamental OHCC course for multidisciplinary students" that is a general education course of Kasetsart University.

IMPLEMENTATION

During 2 days-training program, professional skills were developed and harmonized among participants through interactive learning activities. The training program was designed based on activity-based learning approach. Seven training activities, 1) The introduction activity to Thailand One Health University Network (THOHUN) and OHCC, 2) Contagious Classroom, 3) Systems Thinking and Practice, 4) Brainstorming on Integrating OHCC for Teaching on Case Based Study Learning, 5) Introduction to the OHCC Course, 6) Effective risk communication: A Guide to Best Practice, and, 7) Teamwork: Brainstorming on integrating OHCC subjects, were provided to the all participants.

With those activities, the participants all together can learn how to apply OH approach into their curriculum and student learning activities. Moreover, they learn how to effectively apply the multidisciplinary collaboration among their organization to teach OH future workforce. Key outcomes of the module are the ability to: 1) understand OHCC, 2) understand core concepts of systems thinking and their application, 3) define

communication techniques and tools to deal with various audience, 4) define stakeholder/organization and practice multidisciplinary collaboration among those organizations for problem solving, 5) practice how to deliver effectively communication on case based learning, 6) apply OH Concepts for curriculum and student learning activities, and 7) design and planning course for teaching OH future workforce.

The training program used activity-based learning approach to train the participants in order to gain more knowledge and skills on OHCC. Seven training activities were provided to the participants. The summary of activities' details and results would be presented as follow:

1. Training Program Introduction

Activity Summary: 1) Training Program Introduction: Thailand One Health University Network (THOHUN) was introduced to the participants. The practical usefulness of using One Health Network and related activities were provided to the participants, for instances, guidelines for veterinary practice for animals with potential exposure by Mahidol University, Thailand. Then, 2) 2 days-training program activities: the information about 2-days activities was given and the participants which were divided into 6 groups for activity-based learning activities. 3) Training Program Materials: A facilitator guide book was created and there were table of contents explaining each activity in essential details. The contents provided were also based on the lectures delivered. Self-learning lessons were added to an appendix for better knowledge of OH.

After lectures were delivered, participants took part in activities by expressing their personal opinions via mobile phones. The questions were the topics like asking their views on how the roles of their career having an impact on OH, what OHCC they had etc.

Moreover, there were some activities to evaluate the knowledge on OH of the participants playing "Kahoot" game. Kahoot is a game-based learning platform, used as educational technology in classrooms to measure the basic knowledge on OHCC of the participants. This game included 11 related items and its content was OH related such as giving definition, involved factors, and related organizations and so on.

2. Contagious Classroom

Activity Summary: Contagious classroom was to build up a situation model to understand when epidemic broke out. The participants would hold a glass of water with a number. 5 glasses of water were added with some substances to be represented as contagious water.

The activity started with pairing. Music was played along and when it was stopped, participants would turn to the closest person and pair up. Both of them would each other, then suck the water up through a straw, add it into his/her pair's glass and mix up the water. After that the number on the glass would be written down and the participants restarted the activity from the beginning again until 3 rounds were completed.

Next, some substances would be added to make certain that whether it contained the specific component used as "contagious disease" or not. If the water turned pink, it would be assumed that the water was "contagious".

It was found out that many participants were "contagious" from quick spreading and there were some who were not. This activity was partly based on a plot of the movie "Contagious" which the first character was found infectious by touching hands on a contagious chef and it led to major epidemics.

3. Systems Thinking and Practice

Activity Summary: Providing ice breaker activity that began with letting all participants fold 6 paper apples to make one paper apple. Next, the participants were asked about their definitions on Systems Thinking, for instances, whether Systems

Thinking depending on one's experiences or not and so on. The participants would join activities regarding Systems Thinking and a moderator selected a round object and the participants had to write about it. Then participants had to answer if the object selected was soft or not. The consensual answers of each question would be written in different flip chart page.

The answers of each group was investigated by participants from other groups and if they had any questions from the other groups, they would write a question mark on their flip chart page. From this activity, opinions or answers received were different depending on their perception. The number of question marks represented different perception or disagreement. The moderator allowed them to answer each questions.

There was also an activity called "Loss on the Moon" that the moderator would determine the survival kit to live on the moon and each participant had to sort out the priority of each equipment. They would discuss in their group and compare the results with the ranks from NASA, for instances, if the participant gave a gun the first priority but it was given 8th by NASA, the difference would be 7. The participants who got the highest and lowest scores would get some presents.

4. Brainstorming on Integrating One Health Core Competencies for Teaching on Case Based Study Learning

Activity Summary: Brain training games stated with giving knitting wool, scissors and table tennis balls to participants to work together and find a way to put the table tennis ball at the designed point by given items. Lesson learned from this activity was unity. All participants had to help each other to think, analyze, work and plan systematically. They had to communicate their opinions and solve problems creatively. This activity focused on close collaboration and helping each other.

Then, before the start of the session, knowledge of rabies was given. Video clip on basic knowledge of rabies was provided covering topics of disease-carrying animals, rabies prevention such as avoidance of disease-carrying animals, vaccinating your dogs or providing proper knowledge on rabies. These would enable people to understand rabies prevention and they could also build up a knowledge network in the future.

In Thailand the percentage of disease-carrying dogs found was 40%. It was expected that in 2030 the number of these dogs should be 0% and Thailand determines to be a rabies-free country in 2563.Objectives of rabies-free zone: If we start with rabies-free zone in a university (rabies-free university), the participants came up with creative activities to make their university "a rabies-free zone". Stray dogs in a view of participants was dogs without owners, shelters and nobody looking after them.

Activities which participants from each group thinking and presenting were concerning these questions,

- What have to do in order to achieve this objective?

- Who are to participate?

- What activities can we set up for participants from different faculties to join?

- What core competency in One Health Concept we adopt?

Summarized and announced the winner of "Rabies Free University" activity by voting of participants that would be taken and sticky notes would be pasted at a notice board of the interesting groups. Close collaboration with all faculties in Kasetsart University played an important to achieve its objectives. Lessons should be learned from a new concept like image analysis which people from different faculties could join such as participants from

Faculty of Veterinary Medicine and Veterinary Technology would support vaccination or dogs neutering. Participants from Faculty of Education can help disseminate proper knowledge and encourage people to be aware of the importance of rabies.

5. Introduction to the One Health Core Competencies Course

Activity Summary: The objective was to help participants get more understanding on One Health concepts and create a student network to work in a team. Lessons were given at the ground floor of Chakrabandhu Pensiri Hall and students from the Faculty of Veterinary Medicine and Faculty of Education attended the classes provided (General Education Center of Kasetsart University, 2016). A positive classroom environment was created and students enjoyed exchanging their knowledge in OH related topics. Presentation on OH will also be given and it will be easier to understand if it's in clip video format. Explaining group brainstorming on integrating one health core competencies subjects

All groups brainstorm on module creation to provide lessons on OH and books regarding core competency can be a source of reference. A competition on lessons module creation can be set up and it can be adopted to teach students from various fields with different presentation format such as video clip, game demonstration, Power Point documents or role playing that could be around 10 minutes long. The suggestions should be 10 minutes long as well.

6. Effective risk communication: A Guide to Best Practice

Activity Summary: Communication plays an important role in efficiently sending and receiving message to make sure that a sender and a receiver receives a correct message. However communication can also be involved with risks from miscommunication or conveying incorrect messages.

Nowadays many cases of risks from miscommunication were found. For instances, "Noodee" had a sore throat, runny nose and headache and a pharmacist dispensed her some amoxicillin, paracetamol and bromhexine syrup. According to this case, there were many questions brought up after the communication in this situation such as what the medicines dispensed were for? when "Noodee" could stop taking these medicines? or people around "Noodee" should take some preventive medicines?

A moderator allowed participants to make a role play presentation related to the risks communication from this situation with different 6 characters as follows; a doctor, a drug seller, a pharmacist, a mother, a nanny, a friend of "Noodee". Each group was assigned to one of these characters and making a presentation as a group performance.

7. Teamwork: Brainstorming on integrating OHCC

Activity Summary: Integrative learning concept has been actively supported and OH is one of the most important topics which we will focus on. A learning module called "One Health module to International Projects Education (IPE)" was derived from WHO. The participants were given the scenario example for brainstorming related to integrating OHCC learning modules. After providing this inspiring examples, participants in each group would brainstorm ideas of creating learning modules to give OH lessons. These could be a competition among participants from different faculties in each group and the 10 minutes presentation could be in the various formats, such as a video clip, a game demonstration, power point or role playing, following by 5 minutes group discussion. The lesson learned from this activity was to learn and to practice integrating OHCC into the participants' professional work.

RESULTS AND CONCLUSION

The results of this training program were as follows:

1. The training program was successful in making cooperation and multidisciplinary collaboration among 39 professional lecturers from 13 faculties who were interested in One Health Principles. Self-Evaluation questionnaire created by the researchers, using 5 rating scale and adopted the criteria of participant's self-evaluation which was designed by Best (1997) that mean score 1.00-2.33 = Low, 2.34-3.66 = Moderate, and 3.67-5.00 = High. The participants were asked to respond to 8 items (Learning Skills, Group Skills, Interpersonal Skills, Communication Skills, Contribution to team building, Individual Contribution to team, Leadership, and Responds to Conflict)on Self-evaluation questionnaire. Using one-group pretest-posttest design, the findings indicated that the results of a pairedt- test = -11.3730, df = 33, and pair t-test yield significance at the .001 level (p<.001*), meaning that for the whole group the difference between the pretest average score and the posttest average score was statistically significant (see Table 1 and Figure 1).

Table 1 Pretest and Posttest Mean Scores and Standard Deviation of Self Evaluation on the OHCC Skills.

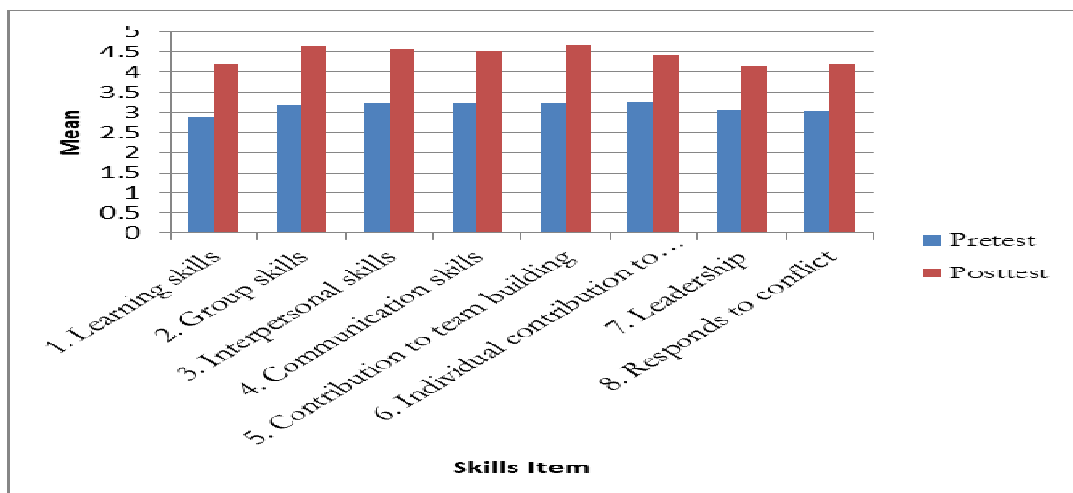| Items	Pretest-Score			Posttest-Score		
	$\bar{x}$	S.D.	Evaluation	$\bar{x}$	S.D.	Evaluation
1. Learning Skills	2.88	0.73	Moderate	4.21	0.64	High
2. Group skills	3.18	0.90	Moderate	4.65	0.49	High
3. Interpersonal skills	3.21	0.81	Moderate	4.56	0.56	High
4. Communication skills :	3.21	0.59	Moderate	4.53	0.56	High

Figure 1: Mean level of Pretest and Posttest in Self- Evaluation

2. Furthermore, by using the Satisfaction Survey, it was found that the participants had satisfaction toward the training program at the high level in every items (see Figure 2).
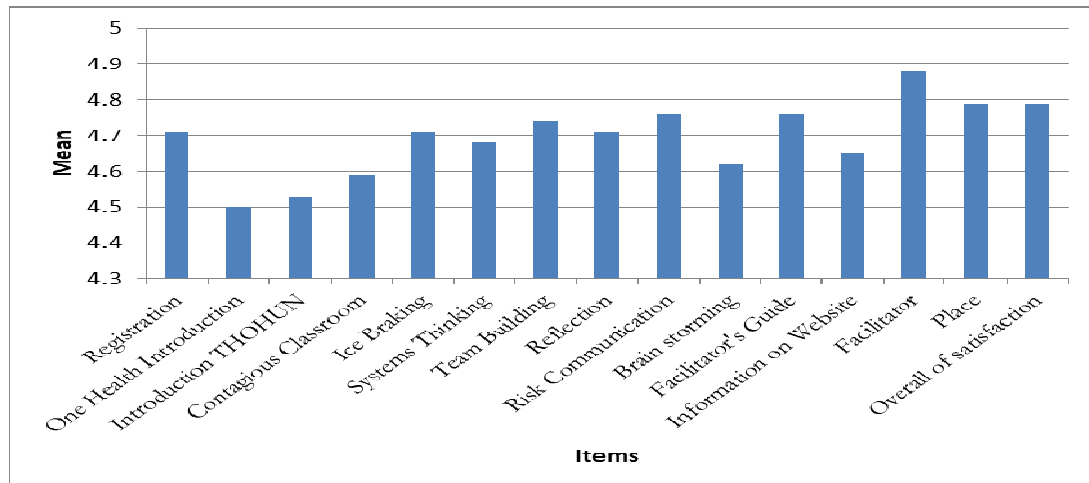
Figure 2: Mean level of Participant Satisfaction on the OHCC Training Program

In conclusion, according to the participants' self-evaluation, they recognized that OHCC was useful for daily life of every disciplines and could apply for better individual health. Active learning skills including Systems Thinking, communication techniques, leadership, collaboration and partnership were necessary for students in the 21st century. Beside Health science, finally One Health Concept could be expanded through different disciplines in Kasetsart University in both lecturers and students following the concept "One World One Health".

LESSON LEARN AND RECOMMENDATIONS

Even though, this training has both practical and effectiveness program, but the limitation of time was noteworthy to be reported as well. Recommendation for training various competencies and dealing with the multidiscipline workforce which has different academic fields, therefore, better time management should be performed to fit the topics of training.

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