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## [調査報告]Web-Based Distance Learning in a Graduate School of Health Sciences : A Case Study of the International Maternal and Child Health Course

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## Web-Based Distance Learning in a Graduate School of Health Sciences: A Case Study of the International Maternal and Child Health Course

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### ABSTRACT

The International Maternal and Child Health (IMCH) course in the International Cyber University for Health (ICUH) at Yonsei University (Korea), within Asia-Pacific Academic Consortium for Public Health (APACPH), was offered by the University of the Ryukyus and Yonsei University in the fall term of 2007. A total of 26 students registered for the course, 13 of them for credit. Three of the 26 were from the Graduate School of Health Sciences, University of the Ryukyus, with one of the three finishing with credit from ICUH. In order to improve the offering of this IMCH course, we carried out course evaluation by the students of ICUH and semi-structured questionnaire survey for 3 students from the University of the Ryukyus. The results of the course evaluation by the students with credit suggested that most students were satisfied with the course. Main causes of failure to obtain credit included insufficient information about the ICUH course, a lack of competence in the English language, and a lack of interactive participation between professors and students. There were no regular offline classes held at the University of the Ryukyus. A strategic and integrative approach could well support the web-based distance learning especially for those students living in remote areas. *Ryukyu Med. J., 28(1,2)35~39, 2009*

Key words: Distance Learning, Cyber University for Health, International Maternal and Child Health Course

### INTRODUCTION

The International Cyber University for Health (ICUH), a program initiative of the Asia-Pacific Academic Consortium for Public Health (APACPH) was launched at the Yonsei University, Republic of Korea, in May 2004<sup>1)</sup>. The implementing institution of the ICUH is Graduate School of Public Health, Yonsei University. The mission of the ICUH is to promote the education of health professionals in the Asia-Pacific region by providing flexible learning courses<sup>2)</sup>. The University of the Ryukyus, Okinawa, Japan, actively participated in the ICUH activities as well as other APACPH member institutions<sup>3)</sup>.

A memorandum of understanding (MOU) and cooperation was executed between National Taiwan University, the University of the Ryukyus, Yonsei University and the ICUH in 2006. The

MOU includes the development of "for credit" academic programs that can be jointly offered by the participating member institutions, the development of course materials and joint recognition of the programs.

In the fall term of 2007, the International Maternal and Child Health (IMCH) course was offered by the faculty member of the University of the Ryukyus and Yonsei University through the ICUH. The experience of the University of the Ryukyus in serving the Okinawa prefecture, which includes many remote communities living in small isolated islands, provides the basis for the development of this course. Twenty six students from APACPH member institutions enrolled in this joint offering, implemented through the distance learning mode. In order to improve the offering of this new IMCH course, we carried out course evaluation by students of ICUH and semi-

structured questionnaire survey for 3 students from the University of the Ryukyus.

## SUBJECTS AND METHODS

The IMCH web-based course was offered for 16 weeks from September to December by ICUH. Table 1 shows weekly lecture plans. The major activities in the development and implementation of the online course included preparing the teaching/learning materials, recruitment of students, conducting web-based classes and evaluating the course. A problem based learning (PBL) approach was adopted in the case study of the course. The PBL case studies were based on actual cases that needed primary health care services at the local community. Course materials were designed according to the syllabus of the IMCH course. Level of competency of enrolling students was set at the

beginning of post graduate. Sources of references were mainly World Health Organization (WHO) and United Nations Children's Funds (UNICEF). Students registered in the course through web site of ICUH. Their evaluation for the course was carried out according to the criteria of active participation for the class schedule and mid-term examination. Transcript of 2 credits for the course of IMCH was issued to the students with grade of A-C from ICUH.

Subjects for the online course evaluation were 10 students who completed the course with credit. The evaluation items were lecture materials, learning objectives, course management by professor, teaching assistant, etc. The number of students enrolled and completing the course with credits by University are shown in Table 2. Three of the 26 registered students were master's students of the Graduate School of Health Sciences, University of

Table 1 Weekly lecture plans in the International Maternal and Child Health Course

Week	weekly plan
1	Introduction to maternal and child health
2	Woman's health related pregnancy
3	Fetal development in pregnancy
4	Normal child birth
5	Breast feeding promotion
6	Regular health examinations for child
7	Regular health examinations for mother
8	Mid term examination
9	Case study (Problem based learning approach)
10	Nutritional education for mother and child
11	Child health from 1-6 years: infants, toddler and preschool years
12	Child health in school age
13	Adolescent health
14	Marriage and build up family
15	Health plan of Japan and Korea in 21 century
16	Summary of case study report

Table 2 Number of students and available learning tools

	Yonsei University	Ryukyus University	Other Institutions
Number of enrollees	17	3	6
Credit	8	2	3
Completing with credits	8	1	1
Available learning tools			
Online course	+	+	+
Breeze Audio Program	+	+	+
Online reference journal	+	+	+
Monthly offline class	+	-	-
PBL online discussion	+	-	-

PBL: Problem Based Learning, +: available, -: not available

the Ryukyus. More than half of the enrollees (17/26) were from Yonsei University followed by three students from the University of the Ryukyus. Half of the students (13/26) were enrolled for credit. Of the 10 students who passed the course with credit, eight were from Yonsei University, one from the University of the Ryukyus and another one from the other universities.

As to the availability of teaching/learning tools by institution, there were five teaching/learning tools: 16 weeks of online sessions, Breeze Audio Program (software for discussion), online reference journal, monthly offline class and PBL online discussion. All of the five items were available at Yonsei University. Monthly offline class and PBL online discussion were not available for the University of Ryukyus and the other institutions (Table 2).

Subjects for semi-structured questionnaire survey by individual interview were 3 students from the University of the Ryukyus. The questionnaire items were course participation in available cyber site, assessment of the PBL elements and ease of finding references, etc. Furthermore they were asked about reasons for successful completion or inability to complete the course for credit.

## RESULTS

Table 3 shows the results of IMCH course evaluation for 10 students who completed the course with credit. Lecture materials, learning objectives, and course management by professor and teaching assistant were reasonably adequate; however, technical support was less adequate perhaps because some students had difficulty with Breeze Audio Program. Half of the students did

not agree that online class was more effective than the traditional offline classes. Areas for further improvement were: better accessibility to web environment and friendlier online group discussion, more references, and more feedbacks.

Table 4 shows the profile of the three students from the University of the Ryukyus, PBL assessment and their comments on class participation and obtaining credit. The two students residing in the main island were able to attend the occasional face to face class while the third student in the remote island could not. Those residing in the main island rated their participation as good, the student in the remote island found it more difficult to find the time for adequate participation. Regarding the PBL assessment, two students were satisfied with the approach. The case studies were related to the course and the questions were reasonable. The third student had difficulty accessing the PBL file. The main reason given for being able to finish the course with credit was that the course contents were easy to understand. Main causes of failure to obtain credit were insufficient information about the ICUH, a lack of competency in the English language and a lack of interactive relationship with professors and other students.

## DISCUSSION

Web-based distance learning has been applied in the health sector through out the world. Farel *et al.*<sup>4)</sup> reported the impact of an online course for maternal and child health professionals, suggesting the course was potentially an effective means for professionals to advance their skills. More than half educators of maternal and child health who experienced using web-based learning

Table 3 Results of the Course Evaluation

	Number (%)		
	Agree	Average	Disagree
Lecture materials were adequate	7(70)	3(30)	0
Learning objectives were clear	7(70)	2(20)	1(10)
Professor provided adequate feedback	7(70)	2(20)	1(10)
Teaching assistant provided adequate support	9(90)	1(10)	0
Technical support was adequate	6(60)	4(40)	0
Internet access was adequate	9(90)	1(10)	0
Learning objectives were achieved	7(70)	2(20)	1(10)
Learning effectiveness was better than offline lecture	5(50)	4(40)	1(10)
Areas for further improvement (allow for multiple responses)	4(40)	2(20)	6(60)

Table 4 Profile and comments of registered students from the University of the Ryukyus

Characteristics	Student A	Student B	Student C
profile			
Profession	Midwife	Psychologist	Public health nurse
Employment	University staff	Student	Municipal staff
Address	Main island	Main island	Remote island
Credit status	Credit	Non-credit	Credit
Participation	Good	Good	Difficult
PBL assessment			
Relevance	Good	Good	-
Question	Good	Good	-
Reference	Good	Good	-
Comments	Course material was easy to understand, because the course was her major. PBL was useful for practical thinking. On demand self study was convenient.	Registration was not in time due to insufficient information. Course material was not so difficult to understand.	Course material was difficult to understand due to language problems. Following course schedule was difficult for limited time of self study. Access was difficult because of isolation from professor and other students.

PBL: Problem Based Learning

indicated it as their preferred method of continuing education<sup>5)</sup>. In the absence of standard accreditation criteria for the IMCH course, the course syllabus was designed based on several international textbooks on maternal and child health. The prescribed time schedule, teaching/-learning tools and methods and evaluation were followed by ICUH. Students enrolled in the IMCH web-based course were from Yonsei University, the University of the Ryukyus and other universities from Mongolia and China. Half of them enrolled for credit and the other half was on a non-credit basis. The proportion of students finishing with credit in relation to those enrolled was much higher in Yonsei University than the other universities. This may be attributed to the availability of the teaching/learning tools in Yonsei and the familiarity of these students with this type of learning than in the others.

The results of the course evaluation by students with credit suggested that most students were satisfied with the course. Half of the students agreed that web-based learning effectiveness was better than offline lecture. Better accessibility to web environment, friendlier online group discus-

sion, more references, and more feedback are necessary for further improvement of the course.

With regards to PBL assessment about the relevance of the course contents, references and appropriate questions, two students assessed the PBL approach positively as facilitating student motivation. Soo Jin et al.<sup>6)</sup> reported that the attitudes of professors and students toward the lessons were major influences on the effectiveness of the web-based PBL in graduate school of public health course. We need more devise to use this effective method in IMCH course.

The reasons for failure to finish with credit identified by the two Japanese students were insufficient information about ICUH, difficulty of comprehension of the English-based learning materials and a lack of interactive relationship with professors and other students. These comments implied that regular offline class is necessary to support students living in remote areas. Personal interaction with professors and other classmates will stimulate students to motivate each other. Furthermore, learning materials written in the Japanese language would enhance understanding of course topics.

Positive full participation of the students and professor is good way for an effective and high quality cyber lectures to meet the needs of the students on self study. Full participation will be facilitated by clear instructions of access to the course. Competent IT personnel and tutors are necessary to support both professors and students. Offline classes in each university are useful to provide and confirm sufficient information about ICUH. The offline class also needs supplementary materials written in Japanese. A strategic approach including these points will support web-based learning, especially for those students living in remote islands. Systematic student support in each member institution is necessary to improve the web-based course.

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