THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 3: eLearning Pedagogy Research

Interim Report (2016-17)

Report due 31 October 2017.
Please return by email to mmcd@cuhk.edu.hk

PART I

Project title: **Teaching Health Emergency& Disaster Risk Management Using Massive Open Online Course and Face-to-Face Classrooms: Building a Global Humanitarian Response Community**

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Project duration: From May 2017 to April 2018

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1. Project objectives

I. Explore the spatial and temporal pattern of student enrolment in the Massive Open Online Course (MOOC) and the degree to which socio-demographic variables can predict the course achievement.
II. Examine the pattern of student engagement (the amount of time a student was logged) in the MOOC and its association with the course outcome (the probability of certificate obtainment).
III. Understand students' different learning experience, course perceptions and outcomes between MOOC and face-to-face classroom.
IV. Provide recommendations for future policy associated with eLearning development at the university level.

Object I and II have been achieved and no changes made throughout the investigation.

2. Progress on process, outcomes or deliverables

(1) Ethics Application

Two ethics applications were submitted to the Survey and Behavioural Research Ethics Committee. The first was approved by the committee on 10 July 2017. The committee has granted permission to conduct surveys to collect first-hand data and video recording during the summer course. The second ethics approval was approved by the same committee on 17 August 2017. This submission was to seek ethics approval to use the retrospective data of the specific online course including the data collected at registration, Moodle Logs and student evaluation.

(2) Face-to-Face Classroom

In this project, a face-to-face teaching was conducted. Summer course POPG 5006 Disaster and Humanitarian Crisis, bearing 2 credits was run on 27-30 June 2017 with a majority of students studying Master of Public Health. The course comprised of 6 lectures, 3 tutorial sessions, 1 simulation exercise and 1 final examination. The lectures covered the topics of public health & humanitarian principles in disaster settings, disaster management system, management of natural disaster, management of man-made disaster & complex emergencies, preparedness, resilience and international polices in disaster stings and mental health issues relevant to disaster and humanitarian crisis. Students in this course were required to participate in pre- and post- course questionnaire survey, and 22 valid samples were collected.

(3) eLearning

The online course of Public Health Principle in Disaster and Medical Humanitarian Response was initiated in June 2014. It is a cohort based course where students were required to complete the course in a maximum of 7 months. As of August 2017 when the online follow-up survey was launched, 5 cohorts were completed and the 6^{th} cohort was in progress. The online course consists of 7 lectures: public health approaches to medical disaster response, disaster concepts and trends, the impact of disaster, public health emergency preparedness, human health impact of disasters and 2 modules on responding to health needs in disaster. During the course students were required to complete 4 quizzes and 1 examination. In the follow-up survey, 392 valid samples were collected from participants who had completed the online course.

(4) Current Findings

i) Spatial and temporal pattern of student enrollment in MOOC

A total of 3,457 participants from more than 150 different countries registered to Cohort 1 to 4 of the online course, and among them, 20.6% ultimately completed the course and obtained certificates over the 7-month cohort period. Hong Kong (25.3%), USA (4.3%), UK (3.7%), Philippines (3.6%), Pakistan (3.5%), Kenya (3.2%), mainland China (3.0%), Ethiopia (2.6%), India (85, 2.5%), and Nigeria (80, 2.3%) were the 10 most frequent reported countries/areas in this online course. Among the ten areas mentioned above, China, India, USA, Philippines, Nigeria and Pakistan are also in the list of top ten countries with reported disaster occurrence.

Significant correlated relationship and linear positive relationship was observed between the number of registered students and disaster occurrence among the countries. The first month of each cohort was the peak of new registrations. Males and students with healthcare qualifications were more likely to complete the course when adjusting education level, occupation, disaster response experience and initial information source for the online course.

ii) Student engagement and its association with the course outcome

On average, each enrolled student spent 4.3 hours on the online course. There was a large difference in the time spent between those who completed their certificates (15.7 hours) and those eventually dropped out (1.3 hours). Male invested 18.3% more time than females. Healthcare professionals spent 30.7% more time than the others. Student engagement was confirmed to have a significant and strong effect on their course completion and certificate obtainment adjusting gender, age and education level. The course design suggested students to spend 1-3 hours per lecture and this was confirmed to be within a reasonable range.

3. Evaluation Plan

No alteration was made in the evaluation plans. There are three sections of evaluation in the proposal: online course, summer course with traditional face-to-face classroom and research evaluation.

(1) Online Course

In this project, 392 valid samples of follow-up survey were collected from the students who completed in the online course. Among them, 96.3% agreed that this course lived up to their expectation and 87.3% were satisfied with this learning experience. Online course students rated high that their subject knowledge was enhanced (5.32 out of 6.0), the assessment method was appropriate (5.11 out of 6.0), the amount of workload was appropriate (5.10 out of 6.0), and recommended readings were useful (5.19 out of 6.0). In this online course, the participants indicated that case study was the most favorite sections (46.4%). And they would recommend this course to their friends (5.44 out of 6.0).

(2) Summer Course with face-to-face teaching

In this project, 22 valid samples of face-to-face teaching were collected from students in the summer course. All of them agreed that this course lived up to their expectation and 90.9% satisfied with the learning experience during the course. Summer course students rated high that their subject knowledge was enhanced (5.2 out of 6.0), the assessment method was appropriate (5.0 out of 6.0), and recommended reading was useful (4.9 out of 6.0). However, the rating in the appropriate amount of workload was lowest (4.5 out of 6.0) among the ten aspects in learning experiences. In this summer course, students enjoyed the simulation exercise most (36.4%). They agreed much that they would recommend this course to their

friends (5.1 out of 6.0).

(3) Research evaluation

Object I and II have been achieved during the past half year's study. Please see current findings of section 2 for the findings related to object I and II.

4. Dissemination Activities (reports, websites, video links, products, *etc.*)

The findings of Teaching Health Emergency and Disaster Risk Management via Massive Open Online Course have been presented by Dr. Chunlan Guo in the 49th Asia-Pacific Academic Consortium for Public Health Conference, Organized by APACPH and Yonsei University, Incheon, South Korea, 17-19 August 2017.