Project Title :	Establishment of New Paradigm with Feasible Models in Teaching and Learning Science for Problem Solving and Future Development
Leading University :	The Chinese University of Hong Kong
Participating UGC-funded University(ies) :	The Education University of Hong Kong, The Hong Kong University of Science and Technology
Project Leader(s) :	Professor Wai Yin Poon, Department of Statistics, The Chinese University of Hong Kong
	Professor Thomas Kwok Keung Au, Department of Mathematics, The Chinese University of Hong Kong
	Professor Ming Chung Chu, Department of Physics, The Chinese University of Hong Kong
	Professor Liwen Jiang, School of Life Sciences, The Chinese University of Hong Kong
	Dr Matthew Kin Wah Mak, Department of Chemistry, The Chinese University of Hong Kong
	Professor Pang Chui Shaw, School of Life Sciences, The Chinese University of Hong Kong
	Professor Teng Fong Wong, Earth System Science Programme, The Chinese University of Hong Kong
	Professor Siu Cheung Kong, Department of Mathematics and Information Technology, The Education University of Hong Kong

Layman Summary of Proposal

The rapid development of technology has changed the way students acquire

knowledge and information, and many teachers have started to use technology in teaching and learning. While there are more and more successful cases of “flipped classrooms”, innovative practices are mostly confined to classroom environments and individual teacher’s own ways of delivery. Many academics still do not appreciate the necessity to establish blended learning and eLearning as an indispensable component in curriculum design at the programme level, and there is a lack of critical mass that leads to advancement at the system level. With the support of 35 teachers who are at different points of their career paths, the current project is designed to fill this gap. The project aims at using technology to address the issue of heterogeneous background of students in junior year science (including mathematics) courses, which is a prevailing and increasing severe problem in higher education. Our strategy is to first secure buy-in at system level by solving problems, and at the same time foster further developments to add values. Specifically, we will develop a host of digital resources, establish practical eLearning and blended learning models, construct models that actively involve students to enhance their learning through teaching/mentoring, and to establish community of practices that serves as change agent to promote the new teaching and learning paradigm of adopting eLearning and blended learning at the programme level.

Objectives and Major Activities:

1. To create critical mass, in terms of human resources and digital resources in science to meet the needs of local students.
   Major activity: To engage a large group of teachers to develop a host of teaching and learning objects across a wide range of science topics.
2. To support the development of a new teaching and learning paradigm that implants blended learning and eLearning as an indispensable component in programme-level curriculum design.
   Major activity: To develop practical and feasible eLearning and blended learning models.
3. To actively engage students in the blended learning and eLearning movement.
   Major activity: To develop various models to actively engage students.
4. To cultivate a community of practices that serves as an effective change agent in the development of blended learning and eLearning.
   Major activity: To design and launch a series of activities to promote the successful models to other teachers, programmes and institutions.

Partners:

The project has gained the support and participation of some 35 teachers. While The Chinese University of Hong Kong (CUHK) is the leading institution in this project, we will work in concerted effort with colleagues from two other institutions: The Education University of Hong Kong (EdUHK) and The Hong Kong University of Science and Technology (HKUST).

Layman Summary of Final Report

Facing the issue of heterogeneous background of students, many teachers had made use of technology to address the diverse learning needs of students. However, there appeared a lack of critical mass conducive for system-level advancement. With the concerted effort of more than 35 science professors and teachers, we have developed a bulk of digital teaching and learning resources on more than 600 science topics, benefiting thousands of students every year. We have proactively taken up the role of change agents to establish eLearning and blended learning as a significant and imperative component in science curriculum design at the programme level, during which students have been actively engaged. With CUHK taking the lead, a robust community of practice was assembled to share our experience to other teachers, programmes and institutions. We have organised and participated in more than 20 teaching and learning activities in Hong Kong and overseas in close collaboration with EdUHK and HKUST.