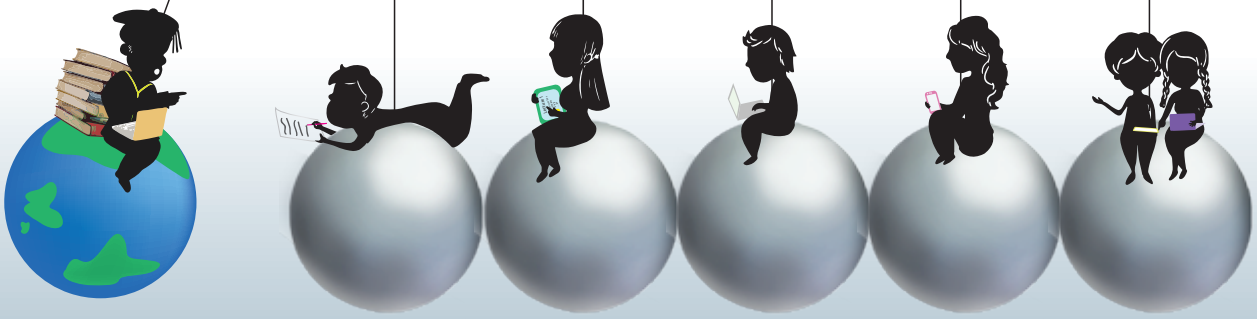
TEACHING AND LEARNING INNOVATION

# EXPO 2016

CREATIVITY TECHNOLOGY DESIGN TRENDS



## Teaching and Learning Innovation EXPO 2016

16 December 2016 (Friday)

8:45am - 4:30pm

LT6, 1/F, Lee Shau Kee Building,
Central Campus, CUHK

Please visit the Expo website

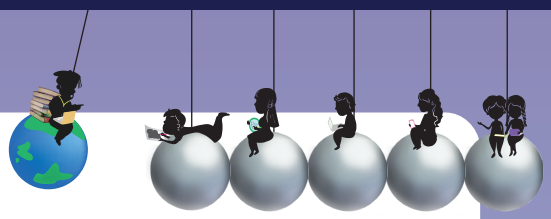
**http://www.cuhk.edu.hk/elearning/expo**

**Organisers**:

The eLearning Service@CU http://www.cuhk.edu.hk/eLearning/

**A joint project of ITSC and CLEAR.**

## Contents



## Message from the Vice-Chancellor

**Prof. Joseph J. Y. SUNG**
*Vice-Chancellor / President*
*Mok Hing Yiu Professor of Medicine*
*The Chinese University of Hong Kong*

I would like to invite you all to the 2016 Teaching and Learning Innovation Expo, which will be held at the CUHK on 16th December. This is where the CUHK faculty and staff showcase their recent advances in teaching and learning that have been trialed and/or implemented over the year.

All the teachers at the CUHK have a common goal and that is to maintain their teaching excellence. Indeed, from the start, we have effectively implemented many different strategies, some quite innovative in nature, to enhance the teaching and learning environment. Many of these strategies have echoed important educational concepts and beliefs, such as outcome-based, active and authentic learning methods. Our courses are therefore designed and conducted in such a way that students can gain the essential learning outcomes by engaging in learning processes that require critical thinking and the accomplishment of authentic tasks.

Recent advances in technology have certainly initiated new possibilities for the enhancement of teaching and learning strategies. The fact that for many subjects, basic knowledge can be self-learnt by the students through the provision of quality multi-media learning packages, has given us a chance to rethink whether class time could be spent more wisely. For example, teachers might use this time to focus on more challenging concepts or conduct activities that engage students in discussions, interactive activities and the application of knowledge on tasks of variable complexity.

We know that to take full advantage of any new pedagogical activities and technological breakthroughs that occur, new skills are required. Thus, practitioners can benefit from learning from each other's experiences and wisdom. The Expo this year will certainly serve as a platform for such a mode for sharing. See you all on the day!

## Message from the Provost

**Prof. Benjamin W. Wah**
*Provost*
*Wei Lun Professor of Computer Science and Engineering*
*The Chinese University of Hong Kong*

The Teaching and Learning Innovation Expo has always been an extremely valuable event at the CUHK, as it provides an excellent opportunity for teachers to share their effective teaching and learning practices.

Quite a few excellent teachers will share their good practices in the keynote addresses. First of all, it is great news that the General Education Team, led by Professor Leung Mei-yee, Dr. Julie Chiu and Dr. Wong Wing-hung, have been awarded the UGC Teaching Award this year. In addition, Professor Lu Yi Chun and the teaching team at the Nethersole School of Nursing are recipients of the University Education Award, the latter to be represented by Professor Chow Ka Ming on the Expo day.

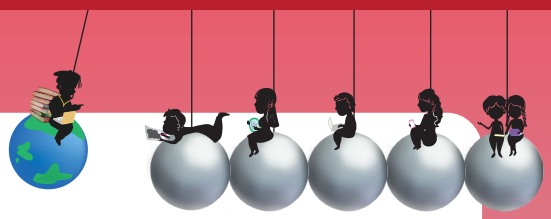
The award-winning teachers will provide us with many good suggestions and food for thought regarding various aspects of teaching and learning (including curriculum design and pedagogy), and I look forward to listening to their advices.

The Student Voice session this year focuses on the use of technology (and in particular the use of videos) for self-learning, as well as the re-design of classroom time for engaged learning following practices advocated in the Flipped Classroom approach. In recent years, this concept has aroused a great deal of interest in many institutions worldwide.

The Poster session and the Parallel Talks will continue to showcase a lot of the achievements of our teachers, such as the making of Micro-Module Courseware as well as the implementation of many innovative teaching and learning strategies in and outside classroom.

I look forward to interacting with our fellow teachers and students on the Expo day and as a community we strive for teaching excellence.

## Introduction



### *Objective*

This is the tenth year we have organised the annual event since 2007 which allows teachers to share their educational experience and insights.

The Expo is an academic conference providing a mutually supportive and positive environment, where creative ideas or practices that lead to learning enhancement can be exchanged through meaningful conversation and interactive seminars. We welcome all ideas and practices ranging from the course to the institutional level, regardless of whether technology is involved or not.

The 'Teaching and Learning Innovation Expo 2016' has five main features: a formal opening session, keynote sessions, talks, poster presentations and a one-week poster exhibition as a follow-up.

### *Organisers*

eLearning Service @ CU

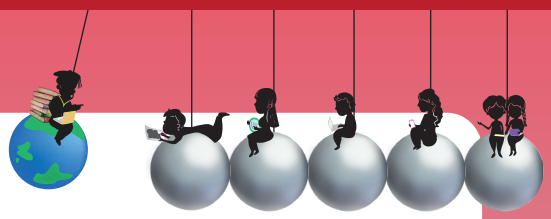
http://www.cuhk.edu.hk/eLearning/

A joint project of ITSC and CLEAR

| Centre for Learning Enhancement And Research (CLEAR) | Information Technology Services Centre (ITSC) |
|---|---|
| Cherry TSOI | Sally WONG |
| Nelson SIU | Judy LO |
| Ivy LU | Carol CHIU |
| Prof. Paul LAM | |
| Prof. Cecilia CHUN | |

Centre for Learning Enhancement And Research 學能提升研究中心

CUHK



## Programme

### *Summary*

The Expo is composed of five main parts:

1. An opening session
2. Three keynote sessions (around 40 minutes each);
3. An assembly of poster presentations. We hope our participants enjoy a light lunch while learning about new ideas and discussing with colleagues.
4. Talks will be organised in parallel sessions (20-minute slots). The talks include information talks on defined themes and formal presentations by teachers on their work.
5. The posters will be exhibited at the venue for 1 week (16 – 23 December 2016).

### *Timetable of the Main Events:*

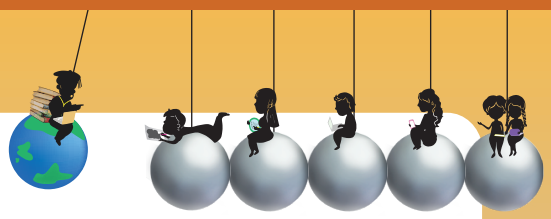
| Time | Programme | | | | | |
|---|---|---|---|---|---|---|
| 8:45am – 9:15am | Registration | | | | | |
| 9:20am – 9:30am | Formal opening **by Professor Benjamin W. WAH, Provost** (LSK LT6) | | | | | |
| 9:30am – 10:10am | Keynote by **Professor Mei Yee LEUNG, Dr. Wing Hung WONG, Dr. Julie CHIU**<br>*Setting High Standards and Building Pathways for Student Achievement* | | | | | |
| 10:10am – 10:40am | Student Voice by CUHK students | | | | | |
| 10:40am – 10:55am | Coffee break[2] (1/F, LSK) | | | | | |
| 10:55am – 11:35am | Keynotes by **Professor Yi Chun LU**<br>*Learner-Centered Teaching & Learning Activities* | | | | | |
| 11:35am – 12:15pm | Keynotes by **Professor Ka Ming CHOW**<br>*The Challenges of Large-class Teaching: Adoption of Innovative Teaching Strategies* | | | | | |
| 12:15pm – 1:30pm | **Interactive poster presentation and lunch[1,2] (1/F, LSK)** | | | | | |
| | **Parallel sessions** | | | | | |
| | LSK 201 | LSK 204 | LSK 206 | LSK 208 | LSK 210 | LSK 202 |
| 1:30pm – 1:50pm | T1 | T2 | T3 | - | T5 | T29 |
| 1:55pm – 2:15pm | T6 | T7 | T8 | T9 | T10 | T31 |
| 2:20pm – 2:40pm | T11 | T12 | T13 | T14 | T15 | T32 |
| 2:45pm – 3:05pm | T16 | T17 | T18 | T19 | T20 | - |
| 3:10pm – 3:30pm | T21 | T22 | T23 | T24 | T25 | - |
| 3:35pm – 4:05pm | T26 | T27 | T28 | T4 | T30 | - |
| 4:10pm – 4:30pm | Refreshment + Poster awards + Closing[2] | | | | | |

*Remarks: 1. Light lunch will be provided. 2. For environmental protection, please bring along your own cup for drinks.*

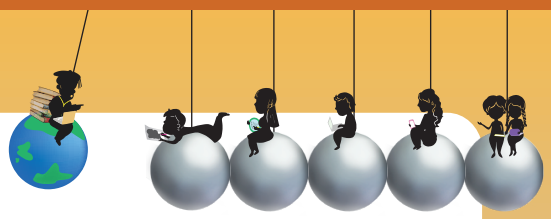
**Judges of the poster award**

| | |
|---|---|
| **Mr. Ian BROWN** | Associate Director, Educational Development Centre,<br>The Hong Kong Polytechnic University |
| **Dr. Crusher WONG** | Senior Manager (e-Learning), Office of the Chief Information Officer,<br>The City University of Hong Kong |
| **Dr. Eva WONG** | Director, Centre for Holistic Teaching and Learning,<br>The Hong Kong Baptist University |

## List of Talks



| List of Talks | | | | |
|---|---|---|---|---|
| **Session** | **Room(LSK)** | **Presenter(s)** | **Unit** | **Presentation Title** |
| T1 | 201 | Prof. Irwin KING<br>Bo ZHU<br>Anne HU<br>Raymond YUEN | Department of Computer Science and Engineering | KEEP Learning for Life |
| T2 | 204 | Prof. Steve TSE | Department of Chemistry | Regularization of Fundamental Chemistry Knowledge through On-line Interactive Video Micro-modules |
| T3 | 206 | Prof. Charles GOMERSALL[1]<br>Prof. Wai Tat WONG[1]<br>Prof. Czarina LEUNG[1]<br>Prof. Gavin JOYNT[1]<br>Prof. Colin GRAHAM[2] | [1]Department of Anaesthesia & Intensive Care<br>[2]Academic Emergency Medicine | Experience of a Flipped Classroom Course to Teach Care of Critically Ill Patients |
| T4 | 208 | Dr. Florence TANG[1]<br>Prof. David CHUNG[2]<br>Prof. Tony MAK[3]<br>Prof. Simon NG[3]<br>Jenny FANG[2]<br>Ray LEE[4]<br>Kristy FUNG[5]<br>Olivia NGAN[6] | [1]School of Biomedical Sciences<br>[2]Clinical Skill Learning Centre<br>[3]Division of Colorectal Surgery<br>[4]Information Technology Service Center<br>[5]Faculty of Medicine<br>[6]The Jockey Club School of Public Health and Primary Care | A New Concept for the Micro-modules in Medical Education: The eLearning Clinical Skills (eC Skills) Channel |
| T5 | 210 | Prof. Kit-Tai HAU | Department of Educational Psychology | Flip and the Ultimate Goal of Flip: Experience with Research Methodology Courses |
| T6 | 201 | Dr. Joyce Sio-Kun IUN | Department of Management | Rewards and Challenges of 'Flipped-teaching' in my Two-year Journey |
| T7 | 204 | Chi Leung CHAN<br>Kwun Hung CHANG<br>Ka Yee SHUM | Yale-China Chinese Language Centre | Flipping Second Language Classrooms with Audio-visual Materials: Design, Production, and Evaluation of Developing Audio-visual Materials for Cantonese Second Language Learners |



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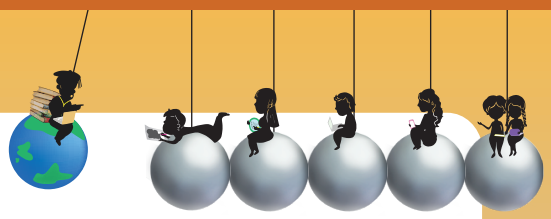
| T8 | 206 | Prof. Czarina LEUNG | Department of Anaesthesia and Intensive Care | Complex Skills Training via Blended Learning |
| T9 | 208 | Dr. Wai Kai WONG<br>Dr. Ann Sin Nga LAU<br>Dr. Sam Hong Kit POON<br>Dr. Rebecca Kit-Ying LEE<br>Dr. Willmann LIANG | School of Biomedical Sciences | Learning Through Discovery: The Use of First-Person-Immersive Illustration (Augmented Reality, Virtual Reality and Mixed Reality) On a Variety of Biomedical Sciences Teaching |
| T10 | 210 | Dr. Kenneth Ming LI<br>Dr. Kevin Chi Wai LAI<br>Dr. Wai Man SZETO | Office of University General Education | UGFN Animated – Flipped Classroom with Whiteboard Animations |
| T11 | 201 | Prof. Cecilia CHUN<br>Kin Chi WONG | Centre for Learning Enhancement And Research | Preliminary Findings of the CUHK Undergraduate Exit Survey |
| T12 | 204 | Prof. Helen ZHAO[1]<br>Lexi Li[2] | [1]Department of English<br>[2]Applied English Linguistics, Department of English | Concept-based Instruction on English Modality |
| T13 | 206 | Dr. Wai Tat WONG<br>Prof. Czarina LEUNG<br>Prof. Charles GOMERSALL<br>Prof. Gavin JOYNT | Department of Anaesthesia and Intensive Care | Controlled Trial to Evaluate the Effectiveness of a Computer Application in Teaching Chest Compression as an Adjunct to the Usual Cardiopulmonary Resuscitation Training on Medical Student |
| T14 | 208 | Prof. Carmen WONG[12]<br>Prof. Shekhar KUMTA[2]<br>Prof. Paul LAI[23]<br>Prof. Samuel WONG[1]<br>Wai Yan KAM[3]<br>Sandra WONG[1] | [1]Family Medicine And Primary Healthcare<br>[2]Task force for Clinical Communication Skills<br>[3]Office of Medical Education | Blended Learning of Clinical Communications Skills Using eLearning Modules, Role Play Workshops and Video Review |
| T15 | 210 | Dr. Kai Ming KIANG<br>Dr. Derek Hang Cheong CHEUNG<br>Dr. Andy Ka Leung NG<br>Dr. Vivian Jun WU | Office of University General Education | Micro-modules for UGFN1000 Classroom Flipping |



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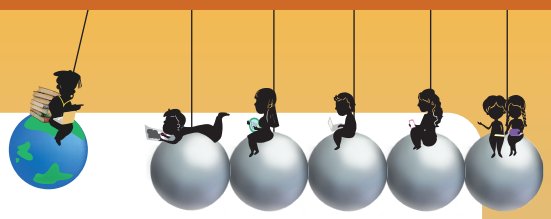
| T16 | 201 | Prof. Ann HUSS<br>Rashon CLARK<br>Pauline DAY<br>Nathan FABER | Morningside College | The Design and Implementation of Complex Micro-modules and their Impact on College General Education Tutorial Teaching and Learning |
| T17 | 204 | Dr. Yvonne LOONG<br>Dr. Felix CHAO | Independent Learning Centre | ISDS Ex: Promoting Independent Learning and Improving Students' Interview Performance via a One-Stop Online Platform |
| T18 | 206 | Dr. Willmann LIANG | School of Biomedical Sciences | PictoPharm: An Innovative Approach to Learn Drug Names |
| T19 | 208 | Prof. Vivian LEE[1]<br>Prof. Janita CHAU[2]<br>Prof. Bryan YAN[3]<br>Ann LAU[4]<br>Michael CHUNG[5]<br>Prof. Wallace CHAN[6]<br>Franco CHENG[1]<br>Enoch NG[1]<br>Laadan LO[1]<br>Felix FONG[1]<br>Livia NGAI[1] | [1]School of Pharmacy<br>[2]Nethersole School of Nursing<br>[3]Department of Medicine and Therapeutics<br>[4]School of Biomedical Sciences<br>[5]School of Chinese Medicine<br>[6]Department of Social Work | Use of a Collaborative Approach to Improve Teaching And Learning Yielding Sustainable and Translational Outcomes (CATALYST) |
| T20 | 210 | Dr. Derek Hang Cheong CHEUNG<br>Dr. Andy Ka Leung NG<br>Dr. Kai Ming KIANG<br>Hin Yan CHAN | Office of University General Education | Effects and Risks of Micro-module Implementation in UGFN1000 |
| T21 | 201 | Dr. Paula HODGSON[1]<br>Betty HUI[1]<br>Dr. Masato KAJIMOTO[2]<br>Xiangyu HOU[3] | [1]Centre for Learning Enhancement And Research<br>[2]Journalism and Media Studies Centre, The University of Hong Kong<br>[3]Technology-Enriched Learning Initiative, The University of Hong Kong | Cognitive Exchange and Dissonance in a MOOC Forum |
| T22 | 204 | Prof. Sharon Wai-yee WONG | Department of Anthropology | Studying Archaeology and Cultural Heritage Out of the Classroom: An Experiential Learning Project in Lei Yue Mun Museum and its Community |



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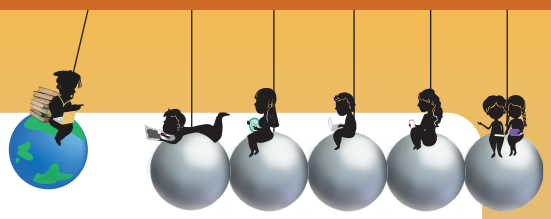
| T23 | 206 | Queenie LAI | Faculty of Law | Making Law Students Client Ready: Training Students Lawyering Skills in a Substantive Law Course |
| T24 | 208 | Dr. Cho Lee WONG<br>Prof. Carmen W.H. CHAN<br>Prof. Helen Yue Lai CHAN | The Nethersole School of Nursing | A Flipped Classroom with Mi-cro-modules in a Foundation Nurs-ing Course |
| T25 | 210 | Dr. Jie YANG | Office of University Gener-al Education | Bilingual Mechanism for University General Education in Classic Read-ing and Discussion |
| T26 | 201 | Dr. John O'REILLY<br>Prof. A.S. HA<br>Prof. W.C. SO<br>Prof. C.S. TSE<br>Prof. Y.L. WONG | Department of Sports Science and Physical Education | Examining the Effectiveness of "The Flipped Classroom" in Teacher Edu-cation Profession |
| T27 | 204 | Dr. Kiu Tung POON | Department of Music | Shifting from Teacher-centered to Student-centered Education: A Project-based Approach to Piano Pedagogy |
| T28 | 206 | Prof. Michael LOWER | Faculty of Law | Student Control of the Means of Knowledge Production |
| T29 | 202 | Prof. King-Ming CHAN[1]<br>Prof. Morris S.Y. JONG[2] | [1]School of Life Sciences<br>[2]Department of Curriculum and Instruction | Field Venture: Mobile Electronic Work Sheet for Field Study |
| T30 | 210 | Dr. Sandy Wan Heng HOI<br>Dr. Wing Hung WONG<br>Dr. Kam Moon PANG | Office of University Gener-al Education | Confronting Science Anxiety through In Dialogue with Nature |



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| T31 | 202 | Betty HUI<br>Dr. Paula HODGSON<br>Cindi TANG | Center for Learning Enhancement And Research | Maximizing Student Engagement: Variations in Assessment Tasks |
| T32* | 202 | Prof. Eunice Lai-yiu TANG<br>Dr. Eric Mau-yuen NG | Department of Curriculum and Instruction | Teaching Awareness Enhancement: A Video Repository for Chinese Language Teacher Education (教學觸覺提升計劃: 中文教師教學錄影專頁) |

** The presentation will be conducted in Cantonese.*

## Keynote Addresses

### The leaders of the General Education Team of CUHK

*(From Left)*

**Professor Mei Yee LEUNG**
*Awardee of University Grants Committee Teaching Award*
*Awardee of University Education Award 2016*
*Director, University General Education*
*Director, General Education Foundation Programme*
*Fellow, Chung Chi College*
*The Chinese University of Hong Kong*

**Dr. Wing Hung WONG**
*Awardee of University Grants Committee Teaching Award*
*Awardee of University Education Award 2016*
*Associate Director, Office of University General Education*
*Associate Programme Director, General Education Foundation Programme*
*Fellow, Chung Chi College*
*The Chinese University of Hong Kong*

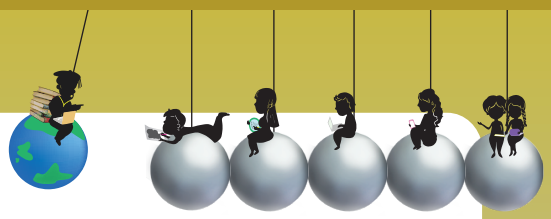
**Dr. Julie CHIU**
*Awardee of University Grants Committee Teaching Award*
*Awardee of University Education Award 2016*
*Deputy Programme Director, General Education Foundation Programme*
*Fellow, Morningside College*
*The Chinese University of Hong Kong*

***Topic:***

**Setting High Standards and Building Pathways for Student Achievement**

***Abstract:***

Fully launched since 2012, the General Education Foundation (GEF) Programme has been designed to set high a standard in order to foster students' abilities for university learning. Students are required to read classics across different cultures and disciplines, explore unifying themes in seminar discussions, and deepen their reflection in their writing. Reading difficult texts, thinking about them, and engaging in discussions about serious and complex subjects—all these challenge the students' abilities and their habitual modes of learning. As the Programme is compulsory, it also poses a big challenge to the teaching team, as we have to address the needs of students from all walks of life and academic backgrounds. In this talk, we will describe how the GEF team has developed different resources and forms of learning support to cater for the needs of a diverse range of students, and facilitate the development of their capabilities and talents.

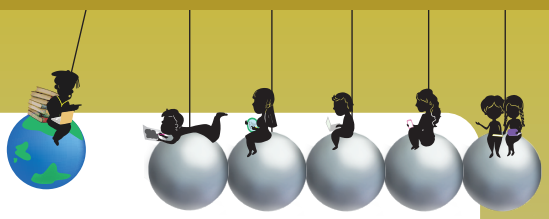


***Biography:***

**Professor Mei Yee LEUNG** graduated from the Chinese University of Hong Kong (CUHK) with a Bachelor of Arts (major in History and minor in Philosophy). After working for a year as a secondary school teacher, she continued her post-graduate education in Université de Paris I (Panthéon-Sorbonne) in France, gained her Docteur-en-Histoire with a thesis on social and economic history of the French Revolution. She has started serving the Office of University General Education in CUHK since 1999, Associate Director from 1999 to 2012, and Director since 2012. She has also taken charge of developing GEF Programme since 2008 as Programme Director. Her academic interests include history of general education, theories and practices of liberal education, and assessment in general education.

**Dr. Wing Hung WONG** received his B.Sc., M. Phil. and Ph.D. degrees in Physics from the Chinese University of Hong Kong in 1991, 1993 and 1996, respectively. In 2004, he was awarded a Master's degree in Christian Studies by the Lutheran Theological Seminary. His academic interests include theoretical physics, history of science and dialogue between science and religion. He is the Associate Director of the Office of University General Education and Associate Programme Director of the GEF Programme. He initially taught at the Department of Physics in 1996. In 2009 when a core team was being assembled to design, pilot and implement the GEF Programme for the new curriculum to all new students starting from 2012, he joined the Office of University General Education. Dr. Wong was awarded Exemplary Teaching Award in General Education, Vice-Chancellor's Exemplary Teaching Award and University Education Award in 2006, 2007 and 2011, respectively.

**Dr. Julie CHIU** is a graduate of CUHK, with a BA in English and a Diploma in Education. She had worked as an English teacher, an information officer, and a teacher trainer before taking up MA studies in Translation and Interpretation at the City University of Hong Kong, where she also obtained a doctoral degree in Literary Studies. While serving as Assistant Professor at Lingnan University 's Translation Department, she was granted a Master's degree in Buddhist Studies at HKU. She has twice worked for CUHK's Office of University General Education, where she is now Deputy Director of the GEF Programme. She is interested in literary translation, modern poetry, and core text education.



## Professor Yi Chun LU

**Awardee of University Education Award 2016**
**Assistant Professor, Department of Mechanical and Automation Engineering, Faculty of Engineering, The Chinese University of Hong Kong**

***Topic:***

**Learner-Centered Teaching & Learning Activities**

***Abstract:***

In a conventional teacher-centred education, the focus of the class is on the teacher, the students exclusively listen, and there is no (or limited) interaction among the students. In learner-centred education, however, the students become the focus, such that the interactions between the teacher and the students, and among the students dominate the class. In this type of education, the teaching and learning activities are specifically designed around the learning outcomes that the students NEED to achieve, rather than what the teachers want to teach. When designing this type of course, it is important for teachers to consider the difficulties that the students might encounter when learning certain concepts, and thus find examples or captivating stories that can be used to arouse the students' interest. In this presentation, I will share my teaching philosophy and my practices for implementing learner-centred education and class engagement.

***Biography:***

**Dr. Yi Chun LU** is currently an Assistant Professor in the Department of Mechanical and Automation Engineering at CUHK. She received her B.S. degree in Materials Science & Engineering from the National Tsing Hua University, Taiwan, in 2007. She received her Ph.D. degree in Materials Science & Engineering from the Massachusetts Institute of Technology, Cambridge, USA in 2012. After her graduate study, she worked as a Postdoctoral Fellow in the Department of Chemistry at the Technische Universität München, Germany. She was the recipient of University Education Award (Early Career), CUHK 2016, the Hong Kong SAR Research Grants Council Early Career Award (2014), Vice-Chancellor's Exemplary Teaching Award, CUHK (2014), European Materials Research Society Graduate Student Award (2011) and Electrochemical Society Battery Division Student Research Award (2010).

## Professor Ka Ming CHOW

**Awardee of University Education Award 2016**
**The core team member of the University Education Award 2016 awarded team**
**(Members: Professor Carmen Chan Yip Wing Han (team leader),**
**Professor Chair Sek Ying and Dr. Jo Jo Wong)**
**Assistant Professor, The Nethersole School of Nursing,**
**Faculty of Medicine, The Chinese University of Hong Kong**

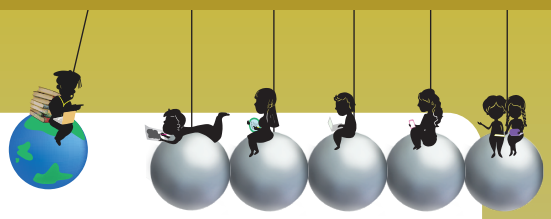
***Topic:***

### The Challenges of Large-class Teaching: Adoption of Innovative Teaching Strategies

***Abstract:***

How many students are there in your programme? In our Bachelor of Nursing Programme, we have more than 200 undergraduates in each of the five study years. It is therefore a big challenge for us to create an optimal learning environment to support their holistic development. It is our responsibility to help our students enhance their capabilities in critical thinking, communication skills and teamwork. Our goal is to develop and adopt tailor-made teaching strategies to optimize the curriculum, the content and the learning/ assessment activities of the students, and we are committed to meet the needs not only of the students, but also of the profession, and society as a whole.

Since 2007, we have developed and adopted a variety of innovative strategies and technologies to enhance teaching quality and performance. These innovative approaches and practices are expected to set a good example for other programmes to follow. Here, we will share how these strategies and technologies are adopted in the Nethersole School of Nursing, to motivate and support our undergraduate students to actively engage in large-class learning.

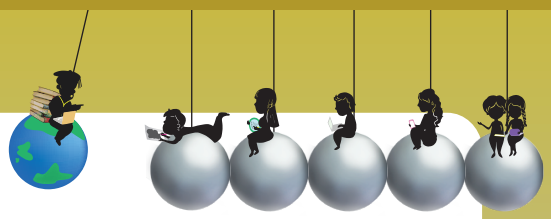


***Biography:***

**Dr Ka Ming CHOW** is currently an Assistant Professor of the Nethersole School of Nursing and the Bachelor of Nursing Programme Director in the School. She received her undergraduate and postgraduate education at the Chinese University of Hong Kong. Before returning to her Alma Mater to develop her research and teaching profession, she had worked as a registered nurse and midwife at the Prince of Wales Hospital for nearly 10 years.

Since assuming the role of Bachelor of Nursing Programme Director last year, Dr Chow has actively adopted innovative strategies (such as flipped classroom and micro-modules) and incorporated new contents (such as biological and Traditional Chinese Medicine nursing) in the programme. She is dedicated to nursing education and research. She has been invited to be an external academic assessor for other tertiary institutes to provide professional comments on nursing courses. Moreover, she has been appointed by the Nursing Council of Hong Kong (NCHK) to be a co-opt member to review the syllabus and core-competencies for training of Registered Nurse (General) in Hong Kong. She is keen in collaborating with overseas universities to investigate education experiences of nursing students in different countries, so as to construct an educational environment conducive to effective learning and to develop educational strategies to better prepare students for their professional roles in the future.

As for research, Dr Chow has successfully obtained a total amount exceeding HKD1.5 million from various research funding agencies including General Research Fund and Health and Medical Research Fund. She has extensively translated research findings into high-quality clinical practice. She received a Young Investigator Award in 2013, and has been invited to present at various local and regional conferences.



## Student Voice

Five students will explain how they perceive two recent trends in higher education: implementation of flipped classroom approach in course and micro-module courseware development.

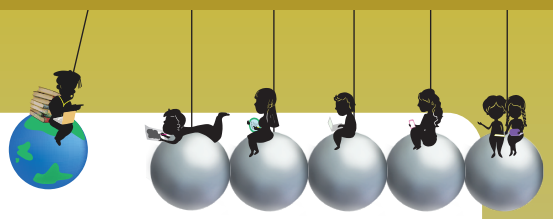
**Topic: Sharing on Filpped Classroom Experience**

Ms. Naomi NIP
*[Faculty of Law]*

**Topic: Use of e-Learning in Preclinical Medical Education**

Mr. Tsun Hei LO
Mr. Zakariyya Zakiyy Bin WAHAB
Mr. Sam Sai Pui KWOK
Mr. Michael Chun Wai LAU
*[Faculty of Medicine]*

## List of Presenters



| Abstract # | Presenter | Unit | Title | Poster | Talk |
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| 1 | Prof. Ann HUSS<br>Rashon CLARK<br>Pauline DAY<br>Nathan FABER | Morningside College | The Design and Implementation of Complex Micro- modules and their Impact on College General Education Tutorial Teaching and Learning | P1 | T16 |
| 2 | Prof. Kit-Tai HAU | Department of Educational Psychology | Flip and the Ultimate Goal of Flip: Experience with Research Methodology Courses | P2 | T5 |
| 3 | Prof. Eunice Lai-yiu TANG<br>Dr. Eric Mau-yuen NG | Department of Curriculum and Instruction | Teaching Awareness Enhancement: A Video Repository for Chinese Language Teacher Education (教學觸覺提升計劃: 中文教師教學錄影專頁) | P3 | T32 |
| 4 | Prof. Cecilia CHUN<br>Kin Chi WONG | Centre for Learning Enhancement And Research | Preliminary Findings of the CUHK Undergraduate Exit Survey | P4 | T11 |
| 5 | Dr. Yvonne LOONG<br>Dr. Felix CHAO | Independent Learning Centre | ISDS Ex: Promoting Independent Learning and Improving Students' Interview Performance via a One-Stop Online Platform | P5 | T17 |
| 6 | Prof. Irwin KING<br>Bo ZHU<br>Anne HU<br>Raymond YUEN | Department of Computer Science and Engineering | KEEP Learning for Life | P6 | T1 |
| 7 | Dr. John O'REILLY<br>Prof. A.S. HA<br>Prof. W.C. SO<br>Prof. C.S. TSE<br>Prof. Y.L. WONG | Department of Sports Science and Physical Education | Examining the Effectiveness of "The Flipped Classroom" in Teacher Education Profession | P7 | T26 |
| 8 | Prof. Sharon Wai-yee WONG | Department of Anthropology | Studying Archaeology and Cultural Heritage Out of the Classroom: An Experiential Learning Project in Lei Yue Mun Museum and its Community | T8 | T22 |
| 9 | Chi Leung CHAN<br>Kwun Hung CHANG<br>Ka Yee SHUM | Yale-China Chinese Language Centre | Flipping Second Language Classrooms with Audio-visual Materials: Design, Production, and Evaluation of Developing Audio-visual Materials for Cantonese Second Language Learners | P9 | T7 |
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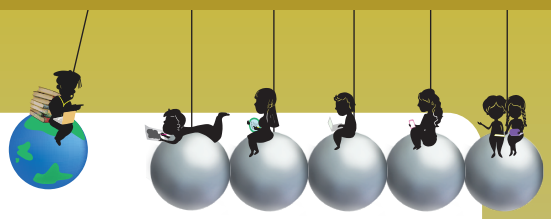
| 11 | Prof. King-Ming CHAN[1]<br>Prof. Morris S.Y. JONG[2] | [1]School of Life Sciences<br>[2]Department of Curriculum and Instruction | FieldVenture: Mobile Electronic Work Sheet for Field Study | P11 | T29 |
| 12 | Prof. Charles GOMERSALL[1]<br>Prof. Wai Tat WONG[1]<br>Prof. Czarina LEUNG[1]<br>Prof. Gavin JOYNT[1]<br>Prof. Colin GRAHAM[2] | 1Department of Anaesthesia & Intensive Care<br>[2]Academic Emergency Medicine | Experience of a Flipped Classroom Course to Teach Care of Critically Ill Patients | P12 | T3 |
| 13 | Prof. Czarina LEUNG | Department of Anaesthesia and Intensive Care | Complex Skills Training via Blended Learning | P13 | T8 |
| 14 | Dr. Wai Tat WONG<br>Prof. Czarina LEUNG<br>Prof. Charles GOMERSALL<br>Prof. Gavin JOYNT | Department of Anaesthesia and Intensive Care | Controlled Trial to Evaluate the Effectiveness of a Computer Application in Teaching Chest Compression as an Adjunct to the Usual Cardiopulmonary Resuscitation Training on Medical Student | P14 | T13 |



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| 16 | Dr. Willmann LIANG | School of Biomedical Sciences | PictoPharm: An Innovative Approach to Learn Drug Names | P16 | T18 |
| 17 | Dr. Wai Kai WONG<br>Dr. Ann Sin Nga LAU<br>Dr. Sam Hong Kit POON<br>Dr. Rebecca Kit-Ying LEE<br>Dr. Willmann LIANG | School of Biomedical Sciences | Learning Through Discovery: The Use of First-Person- Immersive Illustration (Augmented Reality, Virtual Reality and Mixed Reality) on a Varieties of Biomedical Sciences Teaching | P17 | T9 |
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| 19 | Prof. Vivian LEE[1]<br>Prof. Janita CHAU[2]<br>Prof. Bryan YAN[3]<br>Ann LAU[4]<br>Mr. Michael CHUNG[5]<br>Prof. Wallace CHAN[6]<br>Franco CHENG[1]<br>Enoch NG[1]<br>Laadan LO[1]<br>Felix FONG[1]<br>Livia NGAI[1] | [1]School of Pharmacy<br>[2]Nethersole School of Nursing<br>[3]Department of Medicine and Therapeutics<br>[4]School of Biomedical Sciences<br>[5]School of Chinese Medicine<br>[6]Department of Social Work | Use of a Collaborative Approach to Improve Teaching And Learning Yielding Sustainable and Translational Outcomes (CATALYST) | P19 | T19 |
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| 21 | Dr. Kenneth Ming LI<br>Dr. Kevin Chi Wai LAI<br>Dr. Wai Man SZETO | Office of University General Education | UGFN Animated – Flipped Classroom with Whiteboard Animations | P21 | T10 |
| 22 | Dr. Kai Ming KIANG<br>Dr. Derek Hang Cheong CHEUNG<br>Dr. Andy Ka Leung NG<br>Dr. Vivian Jun WU | Office of University General Education | Micro-modules for UGFN1000 Classroom Flipping | P22 | T15 |
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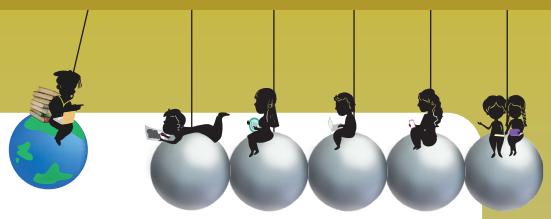

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| 28 | Dr. Paula HODGSON[1]<br>Betty HUI[1]<br>Dr. Masato KAJIMOTO[2]<br>Xiangyu HOU[3] | [1]Centre for Learning Enhancement And Research<br>[2]Journalism and Media Studies Centre, The University of Hong Kong<br>[3]Technology-Enriched Learning Initiative, The University of Hong Kong | Cognitive Exchange and Dissonance in a MOOC Forum | P28 | T21 |
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| 30 | Dr. Paula HODGSON[1]<br>Agnes FONG[2]<br>Coco LAM[1]<br>Irene LEUNG[1]<br>Flora LEUNG[1]<br>Mavis CHAN[1] | [1]Centre for Learning Enhancement And Research<br>[2]Centre for eLearning Innovation and Technology | Rapid Prototyping to Optimize Animated Cases for Effective Learning | P30 | - |
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| 33 | Raymond LEUNG[1]<br>Dr. Jacqueline WONG[2] | [1]Office of Student Affairs<br>[2]Department of Decision Sciences and Managerial Economics | Student Control of the Means of Knowledge Production | P31 | - |
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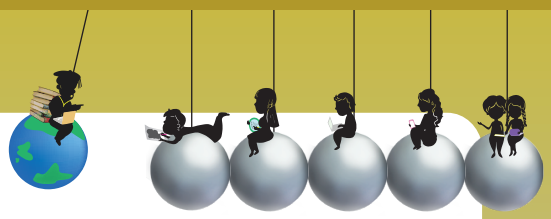

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| 40 | Prof. Paul LAM[1]<br>Dr. Jacqueline WONG[2]<br>Dr. To CHAN[3]<br>Prof. Bo HUANG[4]<br>Aubrey CHAN[5]<br>Stephen LEUNG[6] | [1]Centre for Learning Enhancement And Research<br>[2]Department of Decision Sciences and Managerial Economics<br>[3]Department of Curriculum and Instruction<br>[4]Department of Geography and Resource Management<br>5Registration and Examinations Section and Audio Visual Services Unit<br>[6]Campus Development Office | New Interactive Classrooms | P38 | - |
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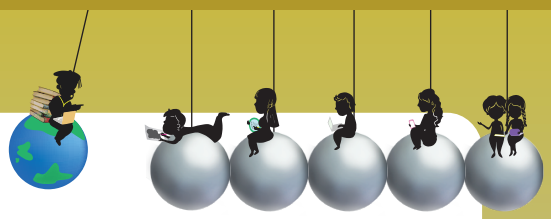

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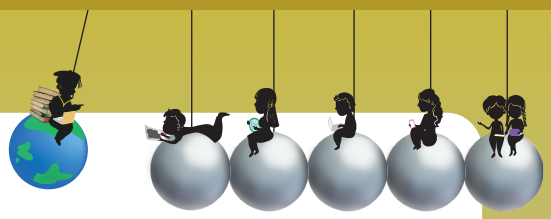

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| 69 | Dr. Florence TANG[1]<br>Prof. David CHUNG[2]<br>Prof. Tony MAK[3]<br>Prof. Simon NG[3]<br>Jenny FANG[2]<br>Ray LEE[4]<br>Kristy FUNG[5]<br>Olivia NGAN[6] | [1]School of Biomedical Sciences<br>[2]Clinical Skill Learning Centre<br>[3]Division of Colorectal Surgery<br>[4]Information Technology Service Center<br>[5]Faculty of Medicine<br>[6]The Jockey Club School of Public Health and Primary Care | A New Concept for the Micro-modules in Medical Education: The eLearning Clinical Skills (eC Skills) Channel | P65 | T4 |
| 70 | Dr. Florence TANG[1]<br>Prof. Aden Ka-yin CHAN[2]<br>Prof. Wai Tat WONG[3]<br>Taylor TANG[4]<br>Daisy CHEN[4]<br>Ray LEE[4]<br>Dr. Olivia NGAN[5] | [1]School of Biomedical Sciences<br>[2]Departmenrt of Anatomical & Cellular Pathology<br>[3]Department of Anesthesia and Intensive Care<br>[4]Information Technology Service Center<br>[5]The Jockey Club School of Public Health and Primary Care | The Pilot Study on the e-Professional Study (ePS) in Teaching Anatomy and Physiology: Blended Learning Approach for the Health Professional Education in Faculty of Medicine | P66 | - |
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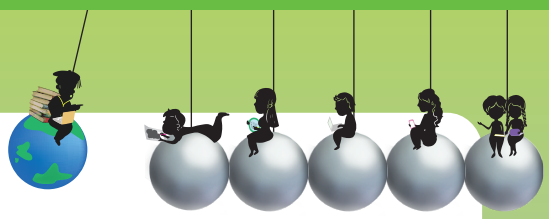
| 77 | Prof. Helen ZHAO[1]<br>Lexi Li[2] | [1]Department of English<br>[2]Applied English Linguistics, Department of English | Concept-based Instruction on English Modality | - | T12 |

## Abstracts



### 1. The Design and Implementation of Complex Micro-modules and their Impact on College General Education Tutorial Teaching and Learning (P1, T16)

*Prof. Ann HUSS, Rashon CLARK, Pauline DAY & Nathan FABER*

*Morningside College*

Over a period of four weeks in September and October 2016, Morningside College introduced a four-part interactive self-paced micro-module unit in the College's Freshman Seminar, GEMC1001 – Current Dilemmas and Their Histories. The micro-modules were designed by the College's Junior Fellows (Teaching Assistants) and produced using Articulate® E-learning software. Production was supported by a courseware development grant.

The micro-module narrative, which integrates the thinking of Aristotle, Confucius, Bentham and Kant with a fictionalized retelling of the 2015 UN Climate Change Conference, models class interactions and assignments by applying traditional philosophical frameworks to new contexts. Students view the micro-modules on the eLearning platform after weekly lectures and before small group discussions and debates (in tutorial) on the following week. The expectation is that students will arrive to tutorials better prepared, and thus have more time for meaningful conversation and productive argument.

Our presentation will introduce the complexities of designing, producing, and implementing the micro-modules, followed by a preliminary review of their impact on College General Education learning and teaching. Said impact will be determined in part by scrutiny of in-class and online surveys, weekly web logs, midterm questionnaires, and end-of-term focus groups.

### 2. Flip and the Ultimate Goal of Flip: Experience with Research Methodology Courses (P2, T5)

*Prof. Kit-Tai HAU*

*Department of Educational Psychology*

"Flip classroom" has been a popular reform initiative due to the ease in preparing videos and online learning material. The emphasis is to have students individually prepare before class using the videos or online materials, while leaving more time for in-depth discussion and interactive activities during class. In an experimental study with 80 students in an introductory postgraduate educational research methodology course (3h × 6 meetings), "flip" was adopted. Students viewed short (3 × 10 min) videos and lecture notes before each lesson, while leaving all class time for in-depth small and large group discussion of additional challenging problems. Results showed that 60%-70% of these students believed "Flip" to be worth strong promotion and they would use "Flip" in their own teaching. Only 10%-15% had some reservation. Flip was particularly positively evaluated by those having greater interest, self-awareness, autonomy, and perceived choices. Interestingly, both high and low achievers liked flip, and less competent students actually recommended more flipping. The project continues into a "lecture-less" advanced methodology course.

### 3. Teaching Awareness Enhancement: A Video Repository for Chinese Language Teacher Education (教學觸覺提升計劃：中文教師教學錄影專頁) (P3, T32)*

*Prof. Eunice Lai-yiu TANG & Dr. Eric Mau-yuen NG*

*Department of Curriculum and Instruction*

An online platform is currently being developed for hosting micro-modules that support student-teachers from the Chinese Language Education programme (CLED) in the Faculty of Education. The micro-modules, which include teaching videos, will serve as analytical tools to help student-teachers better understand the reality of teaching practices in the local classrooms, as well as the behavior of students in general. Thus, our aim is for the micro-modules to help develop the teaching skills and strategies of student-teachers. In addition to the video clips, each micro-module is being designed to support independent learning by incorporating: 1) Lesson plans and instructional materials used in the select videos; 2) guided questions for personal reflection; and 3) recommended reading materials of a prominent theme in Chinese language teaching. The online platform will also provide a chat room to promote critical discussions about different teaching areas. These will allow student-teachers to review and consolidate their prior learning with respect to their teaching of the Chinese Language. The meaningful multi-media input in an eLearning environment will allow novice teachers to anticipate problems, propose solutions, and develop their ability to judge the effectiveness of pedagogical decisions.

*The presentation will be conducted in Cantonese.

### 4. Preliminary Findings of the CUHK Undergraduate Exit Survey (P4, T11)

*Prof. Cecilia CHUN & Kin Chi WONG*

*Centre for Learning Enhancement And Research*

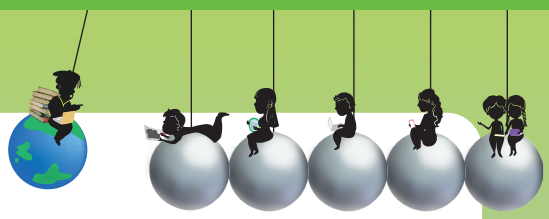
The Centre for Learning Enhancement And Research (CLEAR), in collaboration with the Colleges, the Office of University General Education (OGE), the Office of Student Affairs (OSA), and the Office of Admissions and Financial Aid (OAFA) administered a comprehensive “CUHK Undergraduate Exit Survey” for final year undergraduate students in May to August 2016. The Exit Survey is designed to gauge graduates’ perception of their learning experience, reflection of capabilities development and reflection on university education, etc. It consists of around 260 items, around 150 of which are related to the Entry Class Questionnaire (ECQ).

The findings of the Exit Survey will provide collaborating units a better understanding of CUHK graduates’ reflection of their learning outcomes and feedback on their undergraduate experience. Such understanding will have implications on the overall programme and curriculum design as well as related policies like academic advising and teaching and assessment methods.

Some preliminary findings of the Exit Survey will be presented in this session. The first part will focus on some quantitative comparisons of the graduates from the new and the old curricula, in terms of

1) Preference on career choice & long-term goal;
2) Reflection on the contribution CUHK has made to their personal and capability developments; and
3) Reflection on undergraduate experience

The second part will provide a summary of the open-ended comments on
1) The most important learning outcomes that have been achieved;
2) The most remarkable experience at CUHK; and
3) Suggestions to University on ways to enrich undergraduate experience and their advice for current students.



**5. ISDS Ex: Promoting Independent Learning and Improving the Interview Performance of Students via a One-Stop Online Platform (P5, T17)**

*Dr. Yvonne LOONG & Dr. Felix CHAO*

*Independent Learning Centre*

The Interview Skills Development System (ISDS) is an online tool, which was first launched by the Independent Learning Centre (ILC) in 2013 to help improve the students' interview skills in English. The ILC is now working in collaboration with the Office of Student Affairs (OSA) to develop an extended and upgraded trilingual online platform, called ISDS Ex, to help our students develop their interview skills not only in English, but also in Cantonese and Mandarin more effectively. Students will achieve this by engaging in reflection and independent learning via a range of interactive multimedia exercises, and support resources, which will be provided by the ILC, the OSA and other units across the university, as well as a selection of high quality external links.

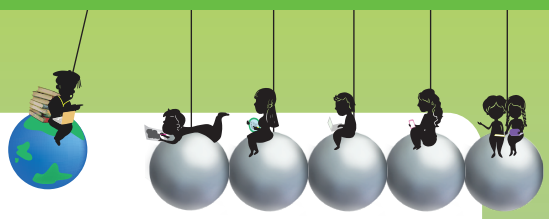
In our presentation, we will illustrate how the one-stop trilingual online platform guides students through a reflective process, which involves setting goals; critical self-evaluation of their own interview performance via video; teacher feedback; and planning for future improvements in terms of personal strengths and weaknesses. We will also show the self-learning exercises developed from student videos on topics such as non-verbal skills, attire, interview language, and the organization of answers in response to given interview scenario. We will conclude our presentation by exploring how the online platform can be incorporated into the formal curriculum, and how it can be used by students for purposes other than job interviews.

**6. KEEP Learning for Life (P6, T1)**

*Prof. Irwin KING, Bo ZHU, Anne HU & Raymond YUEN*

*Department of Computer Science and Engineering*

Since its inception, KEEP has been committed to facilitating the use of technology in the classroom for teachers. This past September, we launched three new products KEEPAttendance, KEEPCourse 2.0, and KEEPDashboard. KEEPAttendance was designed to remove burden of manual entry and expensive hardware for attendance tracking simply by utilizing student's existing smartphones, tablets and laptops. In the redesign of KEEPCourse, the experience for teachers and students to search, filter, share, and create courses was considered of utmost importance. In addition, we have been providing support to teachers developing courses, along with user guides and video tutorials for how to use the platform. Lastly, as teachers consistently shared how important learning analytics were for eLearning, we developed a central one-stop dashboard to view all learning activity from videos, pages, quizzes, assignments, and discussions from both KEEPMoodle and KEEPOpen edX. We are making it easier for teachers to analyse and evaluate their own teaching materials as well as student engagement.



**7. Examining the Effectiveness of "The Flipped Classroom" in Teacher Education Profession (P7, T26)**

*Dr. John O'REILLY, Prof. A.S. HA, Prof. W.C. SO, Prof. C.S. TSE & Prof. Y.L. WONG*

*Department of Sports Science and Physical Education*

Introduction

The flipped classroom is a pedagogical method employed to deepen students' engagement in learning and improve higher order thinking skills. Based on the self-determination theory, we examined how this method might affect students' perceived competence, autonomous and controlled motivation for university courses.

Design and method

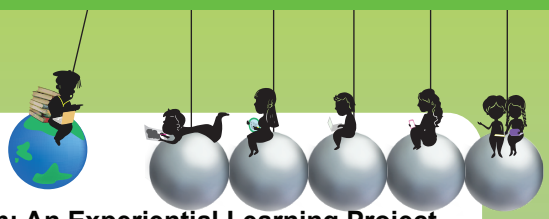
A quasi-experimental design was used; group allocation was conducted at the course level. 354 students from 12 undergraduate and postgraduate courses (taught by five instructors; each teacher taught in at least one class using traditional methods and one using flipped classroom) were allocated in either an experimental or control group. For the experimental group, course instructors adopted the flipped approach using multimedia, out-of-class materials or pre-lecture modules. Control group classes were taught using standard in-class lecture formats. Students reported their causality orientations (i.e., personality) at the start of the course. They also reported their perceived competence, autonomous and controlled motivation at mid and end of term. Between-group differences were examined using multilevel modeling methods.

Results

As the study is ongoing, only results at mid-term are presented. It was found that, after adjusting for causality orientations, the groups did not differ in perceived competence ($p = .32$). However, students in the experimental group reported lower autonomous and controlled motivation ($p < .01$).

Conclusion

The results suggested students may not have fully endorsed flipped classroom at the mid-term stage. End of term results and qualitative interviews will be conducted. It is expected that the results will provide a more comprehensive evaluation of such teaching methods from students' perspectives.



**8. Studying Archaeology and Cultural Heritage Out of the Classroom: An Experiential Learning Project in Lei Yue Mun Museum and its Community (P8, T22)**

*Prof. Sharon Wai-yee WONG*

*Department of Anthropology*

In this project, we aim to apply the theories on experiential learning proposed by Kolb (2015), and other researchers, to the senior undergraduate course, ANTH2730 Preserving Cultural Heritage. Students have a chance to help with the preservation work of an old ceramic factory in Lei Yue Mun, which dates from the 1950s to the 1980s. During the summer term of 2016, some students from this course were selected to continue the project. They were involved in a number of tasks, such as: Preparing work plans for the archaeological survey; documenting the artifacts; writing the cultural heritage management plan; and curating the exhibition with different community members. In this talk, we will highlight some of the interesting findings from the teacher and students, and discuss the effectiveness of the experiential learning theories when applied to this project.

Reference:

Kolb, David, 2015. *Experiential Learning: Experience as the Source of Learning and Development*, 2nd Edition, New Jersey: Pearson Education Inc.

**9. Flipping Second Language Classrooms with Audio-visual Materials: Design, Production, and Evaluation of Developing Audio-visual Materials for Cantonese Second Language Learners (P9, T7)**

*Chi Leung CHAN, Kwun Hung CHANG, Ka Yee SHUM*

*Yale-China Chinese Language Centre*

In view of the multicultural background, varied learning style and pace of students, the need to have well-structured flipped classroom materials is a necessity in the 21st century. In second language teaching, audio-visual input is known to support various oral aspects (Hardison 2004, 2009, 2016; JunHong Zhao *et al.*, 2013). Here, we will introduce the design, production, as well as evaluate the use of audio-visual materials developed for Cantonese second language learners.

Design:

The audio-visual materials designed for Cantonese learners are included in three modules. These are Oral Accuracy, Oral Fluency, and Grammar Points/Vocabulary Practice. In the Oral Accuracy module, a teacher demonstrates the correct shape of the mouth when speaking, and the pitch is shown in the form of voice graphs embedded in the online platform. In the Oral Fluency module, there is a consecutive series of timed questions asked by the teacher with given pictures, videos or context. The Grammar Points/Vocabulary Practice module serves to enhance the student's knowledge and provides drilling through mini-lectures or annotated PowerPoint slides.

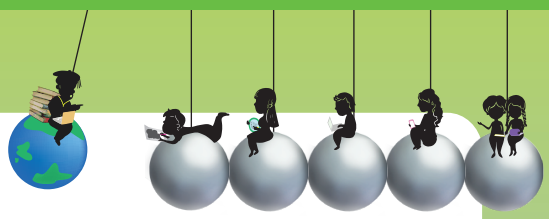
Production:

We will introduce the procedures we use for preparing the materials as well as the production of the audio-visual materials. We will discuss activities such as script writing and video production.

Evaluation:

Initial evaluation results show that Oral Fluency module gave greater support to students with higher proficiency and motivation. Further evaluation on other modules would need to be carried out further.

Hardison, M.D (2004) Generalization of computer-assisted prosody training: Quantitative and qualitative findings. *Language Learning & Technology, 8,* 34-52



Reference:

Hardison (2009) Acquisition of L2 Japanese geminates: Training with waveform displays. With M. Motohashi Saigo. *Language Learning & Technology, 13,* 29-47

Hardison, T. Okuno (2016) Perception-production link in L2 Japanese vowel duration: Training with technology. *Language Learning & Technology, 20,* 61-80.

J.H. Zhao, H. Yuan, W.K. Leung, H. Meng, J. Liu and S.H. Xia (2013) "Audiovisual synthesis of exaggerated speech for corrective feedback in computer-assisted pronunciation training", *Proc. ICASSP,* pp.8218 -8222

**10. Shifting from Teacher-centered to Student-centered Education: A Project-based Approach to Piano Pedagogy (P10, T27)**

*Dr. Kiu Tung POON*

*Department of Music*

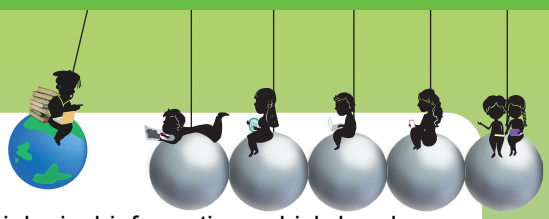
While student-centered active learning in higher education has proven to be effective in promoting both deeper learning and higher-order thinking in students, it is relatively rare to see its implementation in the field of music studies. The idea of the "teacher as [a] sage on the stage" still dominates major music programs worldwide (especially in applied music instruction), due to its highly individualistic nature as well as its traditional apprenticeship model. However, there is now a need to shift from the traditional teaching methods to a more student-centered approach. This is because we now live in a digitally and globally interconnected world and are exposed to abundant information. Thus students need to develop their autonomy and independence to cope with the challenges they face in an ever-changing environment. In this presentation, I will describe an active learning project that was developed for an upper-level undergraduate piano pedagogy course. With this project-based learning approach, I attempt to draw the students' attention to student-centered learning while providing them with an introduction to aspects of piano pedagogy, as well as examining the literature on the art of piano teaching and learning. I also engage students in exploring topics in music interpretation, physiology, and psychology in piano playing and teaching, through an extended inquiry process, which is structured as a semester-long curriculum design project. Students are involved in curriculum design, problem-solving, decision making, and independent research, which allows them to learn concepts, apply knowledge, and present outcomes in a variety of ways. I will also describe a number of active learning instructional strategies that nurture higher order thinking and peer learning, the implementation and outcomes of the project, and the impact this project-based approach has on the students.

**11. Field Venture: Mobile Electronic Work Sheet for Field Study (P11, T29)**

*Prof. King-Ming CHAN[1] & Prof. Morris S.Y. JONG[2]*

*[1]School of Life Sciences, [2]Department of Curriculum and Instruction*

The EduVenture system is a cloud-based platform, which helps students and teachers conduct field studies with global positioning capability, as well as handle post-trip investigations and assessments. There are currently hundreds of trips from many schools, which are openly available online, and which encompass field studies in a range of different scenarios including; historic site explorations, cross country exercise, culture touring in towns, and urban renewal investigations. There are also trips created on-line that have restricted access for registered students only. Very few study trips, however, are available for field studies or ecological surveys on wildlife to investigate environmental sustainability issues.



FieldVenture is a mobile electronic worksheet containing ecological and biological information, which has been developed to lead students on a number of signature field trips in Hong Kong. These include: [1] Tai O Dolphin Watch, [2] Mai Po Wetland, and [3] Sha Lo Tun. All these sites have attracted much attention with regards to debates about conservation versus development, and controversial environmental impact assessment reports are included in the worksheet. In addition, ecological maps and images of the sites are available from government documents, and standard routes have been established for these trips. The students are required to follow the standard routes and 4-5 checkpoints are assigned on each route. Specific information is provided when the students get to a particular checkpoint, and questions are shown for the students to provide on-line responses. The students are also encouraged to upload any photographs they take during the trips to the cloud-based EduVenture platform.

**12. Experience of a Flipped Classroom Course to Teach Care of Critically Ill Patients (P12, T3)**

*Prof. Charles GOMERSALL[1], Prof. Wai Tat WONG[1], Prof. Czarina LEUNG[1],*

*Prof. Gavin JOYNT[1] & Prof. Colin GRAHAM[2]*

*[1]Department of Anaesthesia & Intensive Care, [2]Academic Emergency Medicine*

Over the past 10 years, in response to increasing student numbers, we have moved progressively to a complete flipped classroom approach to teach the practical management of critically ill patients. The use of brief e-lectures, interactive electronic tutorials, animations, and videos, as well as a computer game supplemented by a smartphone app, has freed up teacher time for high-value activities such as guided experiential learning via small group tutorials, as well as using patient simulators and even real patients. The course is highly rated by the students and our (albeit limited), data suggest that exam performance is also enhanced.

**13. Complex Skills Training via Blended Learning (P13, T8)**

*Prof. Czarina LEUNG*

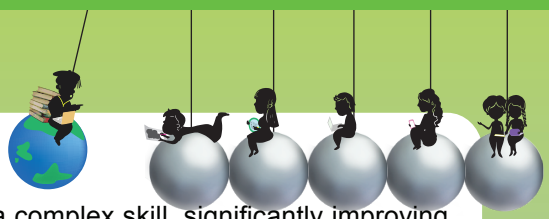
*Department of Anaesthesia and Intensive Care*

Background: Being able to manage mechanical ventilation (MV) is a complex skill, which requires the integration of knowledge with practical application in order to help acutely ill patients. Limited real-life learning opportunities make teaching complex skills such as MV very difficult.

Objectives: To create a flipped classroom, which consists of pre-reading; online interactive cases, practice quizzes, a MV simulator, a discussion forum and a face-to-face (FTF) tutorial.

Methodology: The pedagogical effectiveness of our objective was assessed. Knowledge acquisition was evaluated by pre- and post-course multiple choice questions (MCQs) covering 10 domains. Practical competence was evaluated by 10-minute post-course skills tests conducted by two assessors who were unfamiliar with the course content other than the outline of the syllabus. Assessments were constructed to reflect the competence expected of interns.

Results: 73% and 81% final year medical student classes opted to participate in this flipped classroom. Their knowledge improved in every domain of the MCQ test (McNemar's test, P-values varied from <0.001 to <0.03). In addition, the mean score (with 95% CI) increment 7.0 (0.8 to 13.1) improved to 32.6 (28.7 to 36.6) with FTF participation ($p<0.001$). The median skills test score was 8/10 (IQR 6.75 – 8.5). The students rated the course as being useful with a median score of individual components being 4-5 (IQR 4-5), such that 4 = agree and 5 = strongly agree.



Conclusions: The flipped-classroom approach was effective in teaching a complex skill, significantly improving the students' knowledge and skills. The FTF component appeared to be crucial to their improved performance.

The randomization of the MCQs minimized differences in the difficulty of the pre- and post-course tests. In addition, the assessment-blinded educators gave a more accurate reflection of the course value, also facilitating identification of areas for improvement.

Students' motivation to learn skills perceived as useful, was high.

**14. Controlled Trial to Evaluate the Effectiveness of a Computer Application in Teaching Chest Compression as an Adjunct to the Usual Cardiopulmonary Resuscitation Training on Medical Student (P14, T13)**

*Dr. Wai Tat WONG, Prof. Czarina LEUNG, Prof. Charles GOMERSALL & Prof. Gavin JOYNT*

*Department of Anaesthesia and Intensive Care*

Introduction:

European Resuscitation Council (ERC) 2015 guidelines stress the importance of adequate chest compression during resuscitation in optimizing the survival rate and recommend pressing down on sternum 50mm-60mm at a rate of 100-120 times per minute during chest compression.

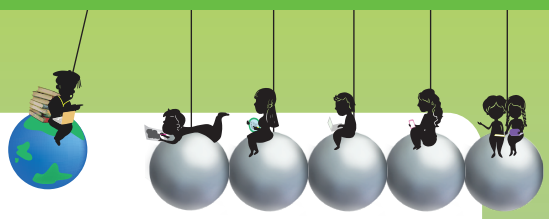
An application was developed using the feature of accelerometer in the smartphone to give feedback to the quality of chest compression. By sensing the average acceleration change, start time, stop time and total duration of applied acceleration force, the frequency and depth of chest compression is calculated and then displayed by the application as a feedback to the user.

Method:

We have designed a randomized controlled trial to evaluate effectiveness of our smart phone application for chest compression training in year one medical students during their basic life support training from January to March 2016. Sixty students were randomized to intervention group (conventional teaching and provision of smart phone application in the lesson) and control group (conventional teaching). The outcome of the training were assessed by achieving adequate number of good quality chest compression (5-6 cm) in one minute in performing chest compression on the manikin.

Result and conclusion:

There is no statistical significant different in number of good quality chest compression between the intervention group and the control group (25.5 vs 23.8 compressions per minute). Fifty nine percent of students agree that the smartphone application improve their technique. Further improvement in the design and timing for use by the student should be further explored.



### 15. Blended Learning of Clinical Communications Skills Using eLearning Modules, Role Play Workshops and Video Review (P15, T14)

*Prof. Carmen WONG[1,2], Prof. Shekhar KUMTA[2], Prof. Paul LAI[2,3],*

*Prof. Samuel WONG[1], Ms. Wai Yan KAM[3], Ms. Sandra WONG[1]*

*[1]Family Medicine And Primary Healthcare, [2]Task force for Clinical Communication Skills,*

*[3]Office of Medical Education*

Communication skills are an essential component of medical consultations, and they can enhance patient outcomes by facilitating the comprehension of information and decision making, as well as self-care and compliance. In this project, we have started to develop a clinically relevant communication course, which is integrated in the main clinical teaching and it advances longitudinally as students progress through their course and are exposed to different specialties and challenges.

In 2015, a survey was conducted to gain the medical student's views about their experiences with communication. These year 5 (2nd year clinical students) revealed difficulties in the use of Cantonese and especially when 'translating' English terms. They also indicated that there were too few opportunities to see patients alone in a clinical setting, and that they had problems with the use of 'laymen' terms in difficult situations, e.g., when breaking bad news and when discussing sensitive topics. A 12-domain curriculum was then devised by an expert taskforce, incorporating a combination of eLearning, video vignettes and workshops, which were integrated across all 3 clinical years to complement the main clinical course work. The production of the eLearning material took place from January to October, 2016.

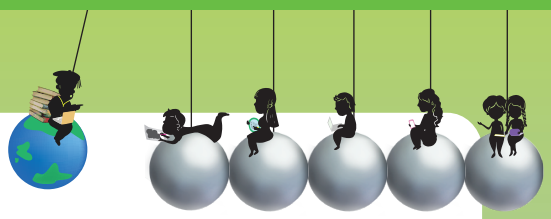
The eLearning course was launched in October 2016 on Blackboard, and workshops with role play took place in November and December of this year. The framework of this curriculum and the student evaluations will be described in the poster presentation; whilst the process of developing the eLearning material and some samples will be shown in the oral presentation. The course currently operates as a 'floating' eLearning module with e-assessments and workshops that are integrated and relevant to the clinical teaching.

### 16. PictoPharm: An Innovative Approach to Learn Drug Names (P16, T18)

*Dr. Willmann LIANG*

*School of Biomedical Sciences*

Learning drug names is an inevitable challenge faced by students in any health-related discipline. While most students manage to remember the drug names in the end, the process is certainly less than fun. There are many excellent textbooks that deliver authoritative and comprehensive information about drugs. However, credible sources that provide ways to help students to learn drug names are lacking. PictoPharm aims to help students get comfortably acquainted with the drug names before they learn the dry facts about the individual drugs. The aim of PictoPharm is to make learning drug names more fun. The pilot version of PictoPharm includes a list of seventeen antibacterial drugs. The letterings of each drug name are presented in a variety of shapes and font styles. These are matched with native drawings of the drug targets, which are designed specifically to reinforce a visual connection with the drugs themselves. The use of custom-designed graphics and special fonts serves to enhance the interest level of the students when they learn the drug names, as well as to help strengthen their visual memory between the drug names and their mechanisms of action. PictoPharm is self-contained and does not require an active internet connection, although links to online resources are also provided in case the user wants to obtain supplementary information. PictoPharm has a simple user interface with convenient navigation features, which includes a drug index that allows the user to find relevant information easily. In addition, feedback from the users (whose identity is kept anonymous) is collected via a built-in link in PictoPharm. We believe that the innovative approach provided by PictoPharm can offer an enriching learning experience for health science students.



**17. Learning Through Discovery: The Use of First-Person-Immersive Illustration (Augmented Reality, Virtual Reality and Mixed Reality) On a Variety of Biomedical Sciences Teaching (P17, T9)**

*Dr. Wai Kai WONG*, Dr. Ann Sin Nga LAU*, Dr. Sam Hong Kit POON,*

*Dr. Rebecca Kit-Ying LEE & Dr. Willmann LIANG*

*School of Biomedical Sciences*

Learning through discovery is an effective way to motivate and engage students by immersing them in a first-person experience. Key challenges in the study of biomedical sciences include: the translation of conceptual information into a real-life situation; understanding the dynamics of a particular scientific process (e.g., how intriguing biochemical processes might proceed at the molecular level); and how to relate the spatial and functional relationships of different human structures. These challenges can now be overcome via the use of new technology. We have recently produced a virtual reality (VR) package for teaching anatomy. This provides a simulated view of the center of the human body, and includes a novel forensic science game, which consolidates the physiological concepts and analytical methods via a combination of augmented reality and mixed reality (AR/MR). The advantages of using AR and VR over conventional videos or narrative animations are their ability to allow for a "first-person-immersive illustration," and teachers can produce simulations to elaborate concepts, which are otherwise difficult when using two-dimensional images. Riding on this AR and VR trend, learners can have a greater autonomy to control their pace of learning and to satisfy their own learning goals. We have already successfully demonstrated the use of AR and VR for a number of topics in the biomedical sciences.

*Main authors

**18. A Flipped Classroom with Micro-modules in a Foundation Nursing Course (P18, T24)**

*Dr. Cho Lee WONG, Prof. Carmen W.H. CHAN & Prof. Helen Yue Lai CHAN*

*The Nethersole School of Nursing*

With support from a Micro-module Courseware Development Grant, four micro-modules that cover four major topics in a first-year nursing course, "Fundamentals of Nursing I", were developed to facilitate flipped classroom implementation. The four topics include: "Nursing diagnosis and care plan"; "Nursing care for patients with pain"; "Process of wound healing and wound care"; and "Techniques in wound dressing". Each micro-module consists of: (1) An annotated PowerPoint; (2) a set of self-test questions; and/or (3) a tailored-made video.

Students are required to view the micro-modules and answer the self-test questions before class to gain preliminary information about each topic. The course teachers can then make use of the class time to revisit the important concepts described in the micro-modules and clarify any misunderstandings that might arise. At the same time, students are expected to participate in various in-class activities, such as discussion sessions and presentations, to consolidate what they learned in the micro-modules.

To date, the project has been evaluated by inspecting the web-logs, and via student surveys and focus-group interviews. The web-log analysis showed that the micro-modules were viewed a lot (i.e., ranging between 438 to 3965 times). The surveys indicated that 69.5% of the students agreed that the micro-modules helped them to gain a better understanding of nursing knowledge and skills on the designated topics, and over 70% of the students were satisfied with the flipped classroom approach to teaching/learning. Our preliminary analysis of the data from the focus-group interviews indicate that the majority of students enjoyed the new learning model, but some preferred to have more online exercises and less in-class discussion.

### 19. Use of a Collaborative Approach to Improve Teaching And Learning Yielding Sustainable and Translational Outcomes (CATALYST) (P19, T19)

*Prof. Vivian LEE[1], Prof. Janita CHAU[2], Prof. Bryan YAN[3], Dr. Ann LAU[4], Michael CHUNG[5],*

*Prof. Wallace CHAN[6], Franco CHENG[1], Enoch NG[1], Laadan LO[1], Felix FONG[1]& Livia NGAI[1]*

*[1]School of Pharmacy, [2]Nethersole School of Nursing, [3]Department of Medicine and Therapeutics,*

*[4]School of Biomedical Sciences, [5]School of Chinese Medicine, [6]Department of Social Work*

Background: Currently, collaborative teaching is usually limited to teamwork within the same discipline. The CATALYST project is designed to develop an inter-departmental translational cross-disciplinary e-teaching platform in health sciences education.

Methodology: CATALYST consists of an online electronic learning platform and a series of practical outreach sessions, which are organised by CU CHAMPION. Learning materials about geriatric care and medication safety were prepared by teachers from six departments, namely: Medicine, Pharmacy; Nursing, Chinese Medicine; Social Work; and Biomedical Sciences;. The community outreach service program provides an opportunity for participants to improve their understanding of geriatric care and their skills at communicating with elderly people. Participants were invited to conduct a self-evaluation survey both before their enrolment to the platform and at the end of the outreach programme.

Results: Of the 210 students who enrolled in the CATALYST project: 71 (33.8%) of them obtained platinum medal certificates; 60 (28.6%) obtained gold medal certificates; 24 (11.4%) received silver medal certificates; 42 (20%) were awarded bronze medal certificates; and remaining 13 (6.2%) completed without medal certificates. The pre- and post-CATALYST evaluation surveys were completed by 109 and 108 students, respectively. A comparison of the two surveys showed that there was a 17% increase in the knowledge of students regarding medication safety, a 4% increase in their medication safety awareness, a 27% increase in their knowledge about atrial fibrillation, a 9% increase in their understanding of elders' needs; and an 11% increase in their communication skills with the elderly. More than 90% of the students agreed that both the outreach programme and CATALYST met their expectations.

Conclusion: The CATALYST project successfully promoted inter-professional collaborations to improve cohesive teaching and learning outcomes, to address the needs of the public.

### 20. Confronting Science Anxiety through In Dialogue with Nature (P20, T30)

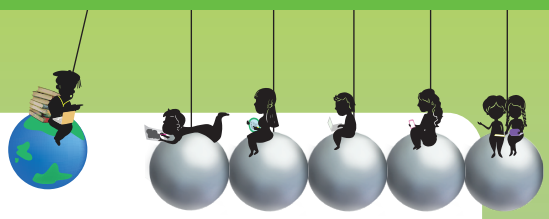
*Dr. Sandy Wan Heng HOI, Dr. Wing Hung WONG & Dr. Kam Moon PANG*

*Office of University General Education*

Science anxiety is a common phenomenon among students taking traditional science courses, including some science-related general education courses. It has been observed that science anxiety hinders students from effective scientific literacy and confident application of science skills to solve problems.

'In Dialogue with Nature' (UGFN1000) is a compulsory general education course for undergraduates of The Chinese University of Hong Kong. This course encourages students to engage in reading science texts and peer discussion about science-related issues, thereby clarifying misconceptions and building up confidence in seeing things from a scientific perspective.

This study aims at investigating the change in students' science anxiety after they have taken UGFN1000, hence it brings insights into pedagogical development that could reduce students' science anxiety and hence improve their learning efficiency. We applied the "Science Anxiety Questionnaire" (SAQ) developed by Alvaro (1978) and found that science anxiety could be related to students' gender, faculty, and even the gender of the teacher. Findings from focus group interview suggested that the primary source of science anxiety roots in the 'fear of



getting it wrong'. Preliminary analysis showed that UGFN1000 has made science more 'friendly' to students, and reduced the emotional burden of reading scientific articles. Students have developed more concern for the world scientific issues. Several aspects of Nature of Science (NOS) were brought up in focus group interviews. It was hypothesized that better understanding of NOS might be related to lower anxiety towards science.

Alvaro, R. *The effectiveness of a science-therapy program on science-anxious undergraduates*. Doctoral dissertation, Loyola University of Chicago, 1978.

**21. UGFN Animated – Flipped Classroom with Whiteboard Animations (P21, T10)**

*Dr. Kenneth Ming LI, Dr. Kevin Chi Wai LAI & Dr. Wai Man SZETO*

*Office of University General Education*

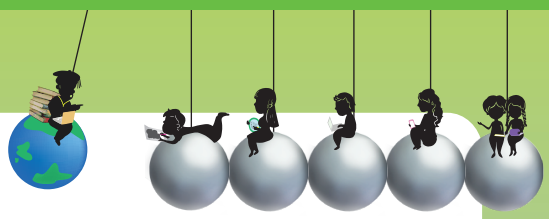
UGFN1000 - In Dialogue with Nature (or simply UGFN for short), is a foundation course for all undergraduates. The students are required to read core texts before having discussions in a series of interactive tutorials on central issues, such as "What is life?" and "What is mind?" In our experience, students are very keen to reflect on these cross-text issues. However, many of them, whether they have a background in science or not, find it difficult to have an in-depth discussion. This is mainly because: they lack the prerequisite knowledge beyond the texts; they misunderstand the concepts; or they have an inadequate comprehension of abstract ideas and are unable to connect different texts. In view of this, we have developed two micro-modules, namely: "Scientific Enquiry of Life" and "Scientific Enquiry of Mind", to flip the UGFN1000 class, and thus provide eLearning supplements for better learning and teaching. A total of four short whiteboard animations have been tailor-made to explain essential knowledge and to clarify misconceptions that might arise. Instead of conventional video recordings of short lectures, whiteboard animations have been created to enrich the students' learning experience. These consist of step-by-step illustrations with voiceover narrations to explain complicated and abstract ideas in an attractive and enjoyable way. The micro-modules are available online for students' self-paced learning. The final results regarding the use of these micro-modules will be obtained in December, and we are currently conducting surveys to determine their effectiveness. The preliminary data indicate that the animations have on the whole improved the students' understanding of the texts. They have also helped to resolve some common misconceptions, and they have equipped the students to a certain degree, with the more in-depth knowledge required for the course. In this poster presentation and talk, we will give an overview of the production of the whiteboard animations, and describe their effectiveness in helping students to learn UGFN.

**22. Micro-modules for UGFN1000 Classroom Flipping (P22, T15)**

*Dr. Kai Ming KIANG, Dr. Derek Hang Cheong CHEUNG, Dr. Andy Ka Leung NG & Dr. Vivian Jun WU*

*Office of University General Education*

To facilitate classroom flipping, we have developed a suite of micro-modules for 5 of the 11 classics taught in the In Dialogue with Nature course (UGFN1000), as part of the Micro-Module Courseware Development Grant Scheme 2, 2015-16. This course is a compulsory general education foundation course for all students at the Chinese University of Hong Kong. It requires students to read science-related classics on their own, and to discuss core questions that arise from their reading, which are enduring in the history of human civilization. Students often report that the 1-hour lecture is insufficient to provide all the necessary background knowledge for them to handle the specific classic texts on their own. However, with this new suite of micro-modules, students can watch a variety of materials online if they wish to, at their own pace at home. These materials include: 1) Introducing the historical background of the text and the author; 2) Explaining the applications or the issues raised; and 3) Discussing the core questions raised in each text. The Knowledge & Education Exchange



Platform (KEEP) was used to present these materials to the students. In this presentation and poster, we will describe how we developed this micro-module website on KEEP, and explain how it is integrated into the teaching of the UGFN1000 course.

**23. Effects and Risks of Micro-module Implementation in UGFN1000 (P23, T20)**

*Dr. Derek Hang Cheong CHEUNG, Dr. Andy Ka Leung NG,*

*Dr. Kai Ming KIANG & Hin Yan CHAN*

*Office of University General Education*

The development of micro-modules for eLearning is a rapidly advancing pedagogy in universities worldwide. Funded by a Micro-Module Courseware Development (MMCD) grant, two sets of micro-modules were developed for UGFN1000 “In Dialogue with Nature”, a compulsory general education foundation course for all CUHK students. These new micro-modules were designed to supplement the students’ basic science knowledge, as well as to provide them with more in-depth historical and technical background information. The present project focused on evaluating the effects of, and risks involved in, the implementation of these micro-modules. First, the effectiveness of the two sets of micro-modules was evaluated with regards to the outcome of student learning in UGFN1000. Second, the potential risks (or threats) in the implementation of eLearning were determined by investigating the impact of the new micro-modules on other learning activities. In this project, both quantitative and qualitative measurements were adopted. Quantitatively, entry-exit surveys were used to gather the students’ perceptions on learning outcomes and learning activities, and the student’s academic performances were compared. Qualitatively, the focus group technique was employed to investigate the underlying causes as to why the micro-modules might improve the students’ learning outcome attainment as well as their impact on current learning activities. The evaluation results will be valuable for other general education courses and might provide insight for the University to identify its way forward with eLearning.

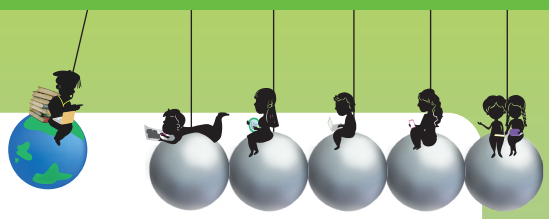
**24. Bilingual Mechanism for University General Education in Classic Reading and Discussion (P24, T25)**

*Dr. Jie YANG*

*Office of University General Education*

The General Education Foundation (GEF) Programme has been included (as a compulsory common core programme), in the existing design of general education in the CUHK since 2012.

The texts in the GEF textbook were originally written in (or translated into) either English or Chinese, and students need to read somewhere in the order of 268,000 words during the GEF Programme. However, the native language of most Hong Kong students is Cantonese, and as an international university, there are about 15% of the students at the CUHK are non-local, with mother tongues including Putonghua, English or other languages. This is a dilemma for the GEF. On the one hand, we expect the students to engage in direct dialogues with (and make sense of) a variety of original texts from a number of different traditions, cultures and disciplines. On the other hand, we expect the students to be able to express themselves clearly, freely and deeply both during the in-class discussions and in their personal reflection writing. Being able to achieve a balance is key.



Considering the students diversity in language preferences, we try to run a bilingual system in the GEF. Thus, we keep textbooks of the original classics, but also provide lectures and tutorials in Cantonese, English and Putonghua. Students can choose to attend classes in any of these languages and they can write their personal reflection in either Chinese or English.

Here, we will discuss and analyze the influences of the bilingual mechanism we employ, on students of 1) different gender; 2) different grades; and 3) different majors.

**25. How PASS works in the General Education Foundation Programme: A Mixed Methods Study (P25)**

*Dr. Wai Man SZETO, Prof. Mei Yee LEUNG, Dr. Kenneth Ming LI, Dr. Vivian Jun WU, Dr. Amber Lo Ming YIP, Isaac Ka Tai WONG & Ann Ka Yu LAI*

*Office of University General Education*

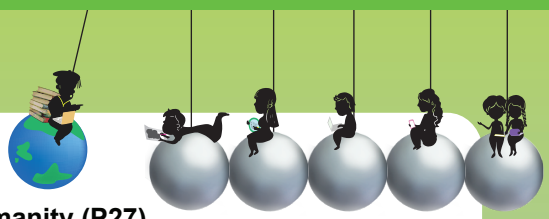
The General Education Foundation (GEF) Programme, is a common core programme that was launched in 2012, and it consists of two courses, namely: In Dialogue with Nature; and In Dialogue with Humanity. Through the study of classic texts, students engage in dialogues with their teacher and their peers to explore the world of science and knowledge, as well as to reflect on what it means to have a good life and an ideal society. The courses require students to read selected texts prior to taking part in seminar discussions. Reading classic texts and discussing serious questions in class, however, prove to be challenging for many of the students. To help them overcome these problems, Peer Assisted Study Session (PASS) has been implemented since the pilot stage of the GEF Programme in 2010. Derived from Supplemental Instruction, PASS provides a cost-effective platform for structured collaborative learning in a supportive and engaging environment. It consists of one-hour and weekly voluntary study sessions facilitated by PASS Leaders. These are students who previously exceled in the same course and have completed their accredited PASS Leader Training. Supported by the quantitative and qualitative data collected in our mixed methods study, this poster presentation provides an overview of how PASS works in the GEF Programme. It also describes how PASS can help students considerably in their comprehension of classic texts, and in the identification of the main ideas and the connections between them, as well as fostering their confidence in expressing themselves in the seminar discussions.

**26. Use of Micro-modules in a Pilot Development of the "MOIRE" Platform for GEFP (P26)**

*Dr. Ka Wai Kevin IP, Dr. Kam Moon PANG & Dr. Wing Hung WONG*

*Office of University General Education*

The "More In-depth Reading" (MOIRE) platform for the General Education Foundation Programme (GEFP) includes various interactive features, including micro-modules and online discussion questions. As a pilot project, two micro-modules have been developed, which are, respectively, based on Silent Spring written by Rachel Carson and Republic by Plato. The first micro-module introduces features of the nature of science, such as scientific credibility, highlighted in Silent Spring and relates them to the public's understanding of scientific truth. The second micro-module compares a democratic community with a meritocratic one in terms of the importance of values, truth, and public opinions when a public policy is implemented. We shall demonstrate how these micro-modules are used for working in a flipped-classroom mode so as to better equip students for the discussions held in student-centered seminars.



**27. UGFH1010 Beyond the Dialogue with Humanity (P27)**

*Dr. Kevin K. W. IP*

*Office of University General Education*

The In Dialogue with Humanity course (UGFH1000) invites students to read classics in the humanities before they take part in interactive tutorials to address several questions, such as “What constitutes a good life?” and “What makes a good society?” From past experience, students like to actively engage in these discussions but find it difficult to have an in-depth knowledge of the subject. In light of this, we have initiated the UGFH1010 Beyond the Dialogue with Humanity project* to provide addition information about the selected texts. This might include more in-depth background information, and/or the analysis of the text from another aspect. In addition to the regular UGFH1000 lectures, students can watch these mini-lectures outside the classroom and whenever they like, via the KEEP course online platform. They can also check their understanding with interactive online tests. At this stage, four modules have been completed: Symposium; The Bible; Qur’an and Social Contract. These will be available to the students in the coming term and we expect more modules to be produced in the future.

**28. Cognitive Exchange and Dissonance in a MOOC Forum (P28, T21)**

*Dr. Paula HODGSON[1], Betty HUI[1], Dr. Masato KAJIMOTO[2] & Xiangyu HOU3*

*[1]Centre for Learning Enhancement And Research, [2]Journalism and Media Studies Centre, The University of Hong Kong, [3]Technology-Enriched Learning Initiative, The University of Hong Kong*

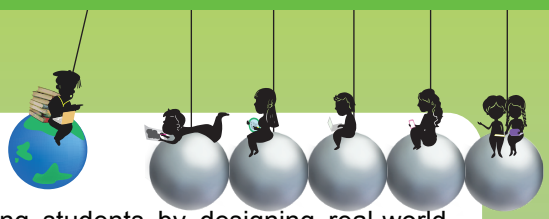
Learners develop cognitively by attending massive open online courses (MOOCs), facilitated by experienced professors from renowned universities or accredited agencies. Although they can go through structured materials independently in a MOOC, there are also many opportunities for international intellectual exchanges through forum discussions. This study explores a MOOC, ‘Making Sense of News’, following two successful rounds of its being offered. This course serves to teach participants how to examine the validity and reliability of sources of information in news reports and social communications. Students are required to complete a combination of writing tasks and quizzes during the five-week course, but discussion in the MOOC forum is voluntary. This forum provides a space for clarification of knowledge and exchanges of experience when international learners contribute around the clock. However, 52 percent of the 82 active learners from Hong Kong, with educational backgrounds ranging from junior secondary through to postgraduate, received certification for completing this MOOC. In this paper, forum postings by 24 of the Hong Kong learners in the MOOC are examined. With an average of 60 words per posting, the discussions included questions relating to course content, observations of news broadcast practices in Hong Kong and overseas, and opinions on personal practice. In addition, these discussions extended beyond content coverage and provided in-depth comments. In conclusion, educators in conventional teaching institutions may consider encouraging their own students to take MOOCs to enrich the conventional campus-based courses.

**29. Maximizing Student Engagement: Variations in Assessment Tasks (P29, T31)**

*Betty HUI, Dr. Paula HODGSON & Cindi TANG*

*Center for Learning Enhancement And Research*

Assessment tasks that facilitate student learning have been shown to align with the intended learning outcomes and build students’ professional capabilities and transferable skills. Traditional assessment tasks often allow students to demonstrate their individual capabilities, but it is much harder to differentiate between individuals in group tasks. Therefore, it is essential to pay attention to the learning culture and consider redesigning assessment activities in the curriculum to unleash student capabilities.



To prepare 21st-century graduates, educators should consider engaging students by designing real-world challenges and providing options for them to present both their progress and outcomes of their learning. In the SMART assessment project (assessment that enables learners to synthesize knowledge, produce measurable performance, work on authentic problems with real-world application and receive timely feedback), students from seven departments indicated their expectations, and the level of guidance they wanted from educators, as well as the preparations and strategies used when they were engaged in various types of assessment task. Having understood their learning patterns and their perceptions of assessment, they then adopted a mixture of approaches to prepare for achieving excellence in learning. This included adopting various technology tools, such as social networks, and various writing and publishing platforms.

This project serves to provide multiple opportunities for guiding educators' and learners' assessment experiences. Educators can then examine how individual and group assessment tasks might be redesigned to promote formal and informal peer-to-peer learning. They can also refine their role as educators with regards to guidance and support before, during and post submission.

### 30. Rapid Prototyping to Optimize Animated Cases for Effective Learning (P30)

*Dr. Paula HODGSON[1], Agnes FONG[2], Coco LAM[1], Irene LEUNG[1], Flora LEUNG[1]& Mavis CHAN[1]*

*[1]Centre for Learning Enhancement And Research, [2]Centre for eLearning Innovation and Technology*

Students may be exposed to video-based lectures in a flipped classroom. In class, however, they often revert to the traditional mode of learning, where they are required to examine cases in fields such as science, medicine, law, business and sociology. Paper-based cases are conveniently prepared by educators, but students might perceive them as being merely yet another reading assignment. Therefore, to create an alternative learning experience, educators can convert their texts into compelling interactive digital images, which may then allow learners to become more engaged and thus show heightened interest in their subject area. Although the majority of university educators are not digital experts, rapid prototyping using animation tools such as 'GoAnimate', 'PowToon' and 'VideoScribe' allow them to produce animated information packages based on the subject content, without requiring any graphic or artistic skills. In this poster, we present the process of building animated videos, from authentic story scripts to final output, based on a project conducted by support staff who are new to university teaching (http://www.cuhk.edu.hk/clear/nts). The information provided in the stories result from interviews conducted both with new teachers and experienced professors at the University. To help you create similar animated scenarios or authentic stories, the production team will share the principles they used and the lessons learned. In addition, educators might consider creating an alternative case study format, which will stimulate further in-depth discussion and investigation in the different subject areas.

### 31. Making Law Students Client Ready: Training Students Lawyering Skills in a Substantive Law Course (T23)

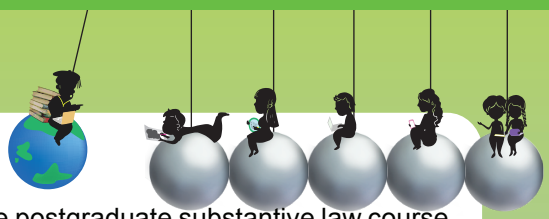
*Queenie LAI*

*Faculty of Law*

*'Law schools have a moral obligation to society – and, to an even greater degree, to their students –*

*to adequately prepare students to succeed as professionals.' Trujillo (2007)*

The traditional teaching method of legal education combines studying cases with Socratic questioning, i.e. teacher-directed learning through questioning. This form of instruction prepares our students for law examination, but does it make them client-ready? How can we design courses to adequately prepare our students to become client-oriented legal practitioners?



In this presentation, I will share active learning activities I developed for the postgraduate substantive law course Corporate Finance. Unlike typical law school business courses that relies on hypothetical case scenarios, students in the Corporate Finance course are involved in lawyer-client simulations based on authentic materials.

In the exercise, students role-play as lawyers and review authentic materials, such as business synopses and due diligence materials, to understand the client's business, strategy, industry and goals. In addition, they are also expected to issue-spot in complex fact patterns and discern what information is relevant. Finally, students work in teams to give client presentations, advise on a range of legal and commercial issues, and offer practical solutions that address clients' concerns. They are then given instantaneous feedback from their clients (role-played by teachers).

Law students can be trained in fundamental lawyering skills even in "substantive law" courses. Skills training need not be confined to "skill-based" professional legal education courses. Carefully designed student-centered learning activities ensure that our law graduates are:

- effective communicators and team players;
- able to gather and digest facts that are not neatly packaged;
- able to deal with legal problems of varying complexities, involving commercial issues beyond the law;

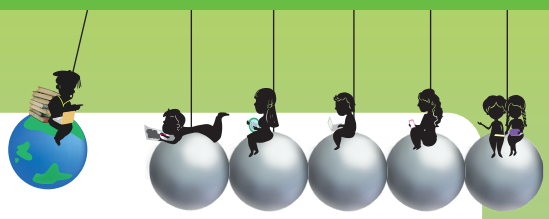
not just technically competent, but commercially aware, who can relate to clients and – above all – contextualize their advice.

### 32. Student Control of the Means of Knowledge Production (T28)

*Prof. Michael LOWER*

*Faculty of Law*

In the traditional teaching and learning environment, teachers act as transmitters or broadcasters of knowledge. The idea of the flipped classroom is that this transmission is captured in a podcast or video, freeing up class time for students to work on other more advanced tasks or problems. There are, no doubt, benefits associated with this model. Might it not be better still, however, if responsibility for the work of knowledge production were shifted to an even greater extent onto the shoulders of the students? Couldn't the students themselves be given responsibility for creating the podcasts or videos that provide their classmates access to the knowledge base required to work on problems? This might bring a number of benefits. For example, students might be more actively engaged with the subject. The materials would be created with a student's knowledge of the difficulties faced by someone new to the subject. Students might come to see themselves as active participants in the scholarly community. They might also learn new skills and create work that they can subsequently present to potential employers. Here, I describe one example where students were encouraged to be responsible for (and equipped with the resources required for) creating knowledge production materials.



### 33. On campus experience based learning platform (P31)

*Raymond LEUNG[1] & Dr. Jacqueline WONG[2]*

*[1]Office of Student Affairs, [2]Department of Decision Sciences and Managerial Economics*

1. Objectives: To build a close-ended, university-wide communicational system which provides students an on-campus experience-based learning platform.
2. It consists of two parts: Student Service and Staff Service
   a. Student Service – Training (video training + Lab), regular Workshop for selecting Business Application (e.g. Creative Cloud, Power BI, SharePoint…), and Job Matching,
   b. Staff Service– one stop shop -- recruitment platform for CUHK student only
3. Equips students with an expanded range of skills and a broaden mindset
4. Trainings are including but not limited to mentorship program, leadership development, internship and service program, aligning with the student development portfolio scheme.5. Complements students' career planning and development by catering for the needs of students of different academic backgrounds and career interests with experience-based learning
6. Set up a Central space for helping students to look for working opportunities for CUHK Internal units.
7. This platform can also serve to consolidate students experience so that their participation records can be linked to Student Portfolio System.
8. Target Users: Students (who is looking for on-campus Job opportunities); Teaching and Administrative Staffs, Academic Departments, Faculties, Colleges and University Units (who is looking for the potential co-worker)

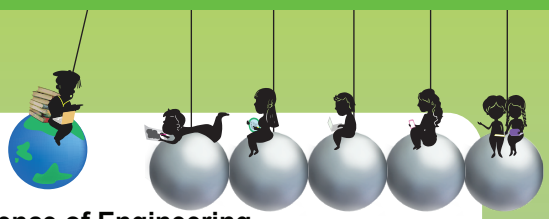
### 34. HTML Slides: An Alternative to Video Lectures (P32)

*Prof. Chung CHAN*

*Institute of Network Coding*

Video lectures are useful for eLearning and flipped classroom approaches, where students are asked to review new materials before class. However, video lectures can be expensive and time-consuming to produce, especially when the right equipment and skill-set are not readily available. Once a video is made, its content is hard to change or customize to specific needs. The video file size can be large, making it impractical to watch when the bandwidth, device storage or screen resolution is limited.

In this project, we aim to replace video lectures with HTML slides for the foundation course on Linear Algebra and Vector Calculus for Engineers. The slides can be recorded and played in a web browser, the audio is synthesized, and the slides are downloadable on the fly, with subtitles optionally displayed at the desired location. In addition, the content of the slides can be navigated and edited easily. The use of HTML also opens up many new possibilities because web services and interactive components can be readily included in the slides.



**35. Developing, Assessing and Providing Direct Evidence of Engineering Student Learning in Generic Skills (P33)**

*Prof. Rosanna Yuen-Yan CHAN[1], Dr. Cecilia Ka Yuk, CHAN[2], Carmen Ka Man LAU[3], Lillian, LUK[1] & Lavina, LUK[1]*

*[1]Department of Information Engineering, [2]Centre for the Enhancement of Teaching and Learning, The University of Hong Kong, [3]Centre for Learning Enhancement And Research*

There is a growing emphasis being placed on engineering graduates' generic skills – such as those for problem solving, communication, and teamwork – by international accreditation bodies (such as the Accreditation Board for Engineering and Technology, ABET), and employers, as well as by engineering teachers and students. The current project is a joint endeavour between The University of Hong Kong (project leader), The Chinese University of Hong Kong, The Hong Kong University of Science and Technology, Hong Kong Baptist University, City University of Hong Kong, and Hong Kong Polytechnic University. Our key project members come from engineering departments and/or centers for teaching and learning enhancement, such as the Department of Information Engineering, and the Centre for Learning Enhancement and Research (CLEAR) at CUHK. With the aim of developing systematic procedures to collect, analyze, reflect, and act upon evidence of engineering student learning in generic skills competency, the project embraces two main objectives: (1) To develop a framework for demonstrating evidence of generic skills learning; and (2) to build and strengthen a community of practice, for the dissemination of resources and generic skills. In this poster, we present the work-in-progress and report some of our initial results and findings of the on-going efforts undertaken at The CUHK. We also hope to engender further discussions about how to collect and evaluate evidence to enhance the quality of engineering student learning (for generic skills competency), and the establishment of a community of practice for fostering the development and assessment of engineering students' generic skills.

**36. Understanding Undergraduate Students' Intercultural Sensitivity and International Experiences (P34)**

*Dr. Sally Wai-Yan WAN, Yuen-Shan TSE, Ylena Yan WONG, Archie Chong-Kwai YEUNG,*

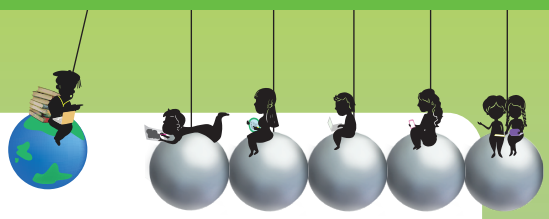
*Leo Lik-Chung WONG, Jacky Chun WONG, Kelvin Shing-Pan CHONG & Thomas Wing-Ki LEE*

*Department of Curriculum and Instruction*

Searching for a deeper understanding of the perceptions of university students about their international awareness and experiences might pave the way for fostering and promoting the development and process of internationalization in universities. So far, few empirical studies have been conducted to study the intercultural sensitivity of students about the world. Intercultural sensitivity is regarded as being 'a mindset that helps individuals distinguish how their counterparts differ in behaviour, perceptions, or feelings in the process of intercultural communication' (Chen & Starosta, 2000). The aim of this study is to explore undergraduate students' intercultural sensitivity and their perceptions of international experiences. Key research questions of the study include: (a) What are undergraduate students' levels of intercultural sensitivity; and (b) What are undergraduate students' perceptions of the needs and challenges of international experiences? Using a sequential mixed-method approach, a sample of 39 participants who were enrolled in an undergraduate elective course completed the Intercultural Communication Sensitivity (ICS) scale developed by Chen & Starosta (2000), and as a follow up, individual interviews were conducted with six of the students. The implications for developing the intercultural sensitivity of students' as well as their experiences in university education will be discussed.

Reference:

Chen, G. M., & Starosta, W. J. (2000). The development and validation of the intercultural sensitivity scale. Human Communication, 3, 1-15.



### 37. Developing the B.Ed. Student Teachers' Pedagogical Content Knowledge through Self-directed Learning Using Office 365 SharePoint (P35)

*Prof. Wilfred Wing-Fat LAU[1], Dr. Yip-Cheung CHAN[1]& Dr. Kwan-Wing MAK[2]*

*[1]Department of Curriculum and Instruction, [2]Department of Educational Administration and Policy*

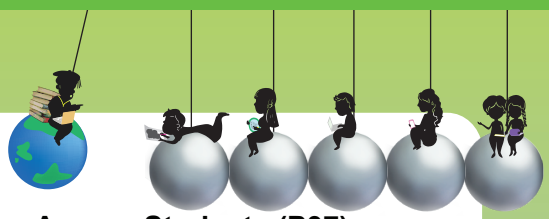
The objective of this project was to develop student teachers' pedagogical content knowledge (PCK) through self-directed learning (SDL) in an online learning environment. Self-reflection is essential for the professional development of pre-service teachers. Using Office 365 SharePoint, an online teaching e-portfolio platform was established to support B.Ed. (Math & Math Edu) and B.Ed. (Liberal Studies) students when they reflected on their own classroom teaching during the teaching practicum (TP). The platform consists of a number of different components, which support the students' interactions with the TP coordinator and their supervisors, as well as with their classmates. In particular, the peer review of teaching cases is a core component of the e-portfolio. Students are required to be video-taped in one of their own lessons during the TP, and the video and related teaching materials are then uploaded to the platform for peer review and discussion. The students also provided constructive comments and suggestions to facilitate self-reflection about their own teaching, and they developed a revised lesson plan and reflection report afterwards. When using this platform, student teachers reported positive feedback in the survey and their professional knowledge and classroom management skills were enhanced through the online interactions with their peers and teachers. In addition, online PCK development teaching case packages, subject-specific self-assessing lesson rubrics, and exemplary teaching cases were produced to aid current and future student teachers' SDL as well as improve the teaching and learning of other teacher education programmes.

### 38. Flipped Teaching for Application of ICT in Education (P36)

*Dr. To CHAN, Prof. Morris Siu Yung JONG & Prof. Bai BARRY*

*Department of Curriculum and Instruction*

Using a flipped classroom approach, six micro-modules have been designed and will be in use as part of the "Information Technology in Education" course run by the Faculty of Education. With a flipped classroom design, students gain prior exposure to the learning materials from a specific topic before they come to class. The pre-class learning materials include instructional videos, with online assessment to gauge the students' performance in the pre-class learning process. The online assessment results provide instant feedback to the lecturer, and this gives them a chance to adjust and fine-tune their teaching strategies to meet the students' learning needs and difficulties. The aims of this project are to support and promote the university eLearning strategy, and to practice this innovative pedagogical approach in tertiary education. It also sets an example for the student teachers (from the Faculty of Education) to implement the flipped classroom design in primary and secondary school settings. The topics covered in this project include: 1) ubiquitous learning; 2) teaching and learning with eTextbooks; 3) game-based learning; 4) digital storytelling; 5) concepts and practices of eLearning; and 6) design and use of WebQuest for teaching and learning. The courseware will be available on the CUHK Blackboard Learn system as well as being accessible via other eLearning platforms such as Schoology.



### 39. Misbehaving Students? Strategic Learning Behaviours Among Students (P37)

*Dr. Wai Yin NG, Cindi TANG, Flora LEUNG & Carmen LAU*

*Centre for Learning Enhancement And Research*

Are your students misbehaving? For a conscientious teacher, this can be a difficult issue to come to terms with and address. If your students are not coming to class, or not working hard, they may or may not be misbehaving, as it is their choice as to how they invest their time. When a student procrastinates, it may be due to his/her lack of discipline, or they might be a victim of another student's tilization. When free-riding happens in a group project, it might be due to an individual avoiding work, a dysfunctional group, or there may be unintended perverse incentives in the way the coursework is administered.

We have spent time to compile illustrative cases of strategic learning behaviours including free-riding in group work, trumping ("屈機") and self-plagiarism, all of which are obvious cases of misbehaving. We also paid attention to other instances widely studied in the psychology literature, such as procrastination, defensive pessimism, self-handicapping, disengagement and truancy. We hope to encourage open discussion and debate at the University in order to gain a better mutual understanding among students, teachers and administrators.

Two scenario packages, namely 小組工作之孰是孰非 ("Whodunnit in group work") and 屈機面面觀 ("Perspectives of Trumping"), were developed to achieve the goals above. Student involvement is a major feature of these packages. Based on real stories collected from student interviews and writings, we created the scenarios as a foundation for discussion. We also intentionally invited many students to participate in the production and critique groups. Each package has three forms, which are short video, media-enriched workshop, and conventional workshop. We hope that these packages can create platforms for lively discussions about strategic learning behaviours.

*This project is part of the 2012-2015 Triennium project on "Reinforcing the Importance of Academic Integrity and Ethics in Students through Blended Learning". This joint-university project is funded by Scheme C of the Focused Innovations Scheme for the approved project of UGC Teaching and Learning Related Initiatives (2012-2015 Triennium), and it is led by Hong Kong Baptist University. Hong Kong Polytechnic University and The Education University of Hong Kong are also our working partners.

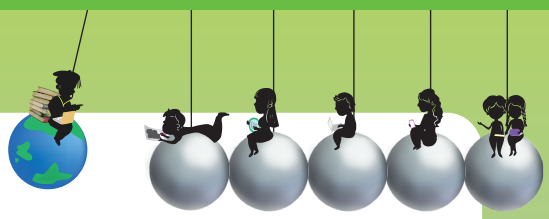
### 40. New Interactive Classrooms (P38)

*Prof. Paul LAM[1], Dr. Jacqueline WONG[2], Dr. To CHAN[3], Prof. Bo HUANG[4],*

*Aubrey CHAN[5] & Stephen LEUNG[6]*

*[1]Centre for Learning Enhancement And Research, [2]Department of Decision Sciences and Managerial Economics, [3]Department of Curriculum and Instruction, [4]Department of Geography and Resource Management, [5]Registration and Examinations Section and Audio Visual Services Unit, [6]Campus Development Office*

Two classrooms have recently been renovated by the Campus Development Office with input from the Working Group on Interactive Classrooms, which was set up under the AVSU Users Committee in December 2014, to promote interactive teaching and e-learning activities for the university. These two rooms are Room 303 in the Wu Ho Man Yuen Building (WMY303) and UG06 in the Sino Building (SBUG06), and their seating capacities are 64 and 72, respectively. Many aspects of these two classrooms, including the walls, floors, lighting, furniture, hardware and software, WIFI connection, have been tailor-made to facilitate group work, presentation and exchanges among students in groups. For example, big screens/monitors have been placed next to each of the discussion tables so that students can display their work from their digital devices through wired or wireless connections, so as to illustrate their ideas freely and collect feedbacks from their fellow students of the group. The Professor can also choose to broadcast any group presentation using the control panel so that all students in the class can give their feedback for others' presentation. It would be a good opportunity for us to share the new features of these two classrooms if you can come to our poster presentation to see photos and videos about



these new classrooms. Please start using these new classrooms in the coming academic term/year if your teaching also places emphasis on students' group work and presentation.

### 41. Gateway to a Makerspace – Initiating 3D Printing and Scanning Services in CUHK Library (P39)

*Ivan CHAN & Lily KO*

*The Chinese University of Hong Kong Library*

The new 3D Fabrication Service

As many departments and centres in the CUHK have started to use 3D printing in their research projects,1 this motivated us to establish a 3D printing and scanning service in the Library Learning Garden. Our mission for the Learning Garden, which has been open since 2012, and operates around the clock, is to be inspirational and creative. Thus, this area was considered to be the ideal location for starting a 3D printing service. Our strategy for having such a service in this location is to inspire the students to explore new interests in design. We also advocate peer-to-peer 3D printing support to engage students of all academic disciplines. Such a service, therefore, not only builds a creative ambience and culture for the students, but also encourages cross-discipline collaboration.

A Gateway to Makerspace

Makerspace is a fabrication space where various specialist manufacturing tools and equipment are made available for users to prepare prototypes. 3D fabrication is one of the key elements in the Makerspace infrastructure. With a sound foundation and our experience in 3D printing and scanning, the Library is moving forward to set up a Makerspace equipped both with fabrication equipment and a studio for video production. In the near future, the Library's Makerspace will become a welcoming space for students (either alone or in groups), who dare to think and create, and to bring their inventions into daily life.

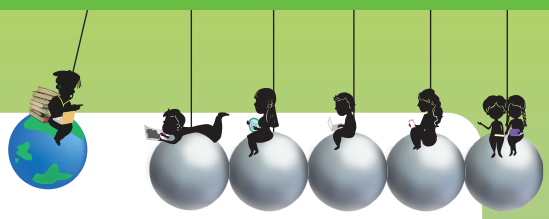
[1]CUHK and HKU Researchers Introduce 3D Printing Technology in Complex Cardiac Surgery Procedures (http://www.cpr.cuhk.edu.hk/en/press_detail.php?id=2269)

### 42. eLearning@CUHK (P40)

*Judy LO, Eva CHEUNG & Daisy CHEN*

*Information Technology Services Centre*

Are you interested in learning more about the services, systems and tools, and resources we provide (http://www.cuhk.edu.hk/eLearning)? If you are then come and visit us, and give us your opinions and ideas about how we can better support your teaching, as well as help to enhance the student learning experience with you.



### 43. Flipped Classroom: The New Learning Mode for CUHK Students (P41)

*Hiu Yee LEUNG, Ka Man NGAI, Pui Ying CHEN & Hung Yan CHAU*

*Undergraduate students of The Chinese University of Hong Kong*

In our presentation, we aim to introduce the Flipped Classroom as an alternative learning model for students of the CUHK.

The Flipped Classroom is a new learning model, which requires students to watch videos of lectures in their own time, before they attend the actual class sessions. Any difficulties they encounter from watching the videos can then be discussed in class. The class sessions are also dedicated to more in-depth discussions and interactive exercises, in order to engage a more intellectual exchange between the students and teachers.

Here, we will explain the flipped classroom approach, and provide examples and experimental models from our own experiences. We will include the data we collected and the analysis we conducted from the experimental flipped classes we ran with a group of CUHK students. We will also present the results of surveys distributed to all the CUHK students regarding their opinion about implementing flipped classrooms in the CUHK. Finally, we will assess the probability and predict the success rate of using this approach as an alternative teaching mode in the CUHK.

### 44. Rewards and Challenges of 'Flipped-teaching' in my Two-year Journey (T6)

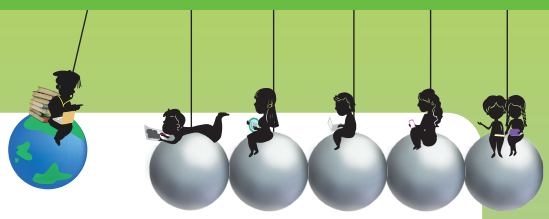
*Dr. Joyce Sio-Kun IUN*

*Department of Management*

Since January 2015, I have received two Micro-Module Courseware Development Grants at the CUHK to experiment with the concept of flipped-teaching. My first flipped-teaching project was designed for a fundamental management course. Nine modules of annotated PowerPoint slides were produced. Each module contains fundamental concepts to provide students with a basic understanding of the topic. Seven of the modules include videos. These videos are from various sources, e.g., TV documentaries; self-produced video cases supported by previous grants; and my video library. Students are expected to pre-study the materials before they attend the classes.

The first trial conducted with these flipped-teaching materials occurred between January and April 2015. The feedback provided by the student users in their Course Teaching Evaluation in December 2015 indicated that they had mixed views about the course. On average, the students liked the videos, and welcomed the flipped learning materials available on-line for pre-viewing and reviewing each module. However, they found that participating in multiple graded on-line assignments was time consuming. With their comments in mind, I subsequently modified the usage and assessment methods in my second trial, which started in September 2016. Students from Hong Kong and Mainland China are participating in this flipped-learning trial, and so far I have found that it seems to be appreciated more by the students from the Mainland.

Since January 2016, I have been working on my second flipped-teaching project, which is designed for an upper elective Management course. Hopefully, this ten-module self-learning kit aimed at enhancing the managerial skills, will be popular with the more senior students.



### 45. Using Micro-modules for Teaching Professional Ethics in Financial Reporting (P42)

*Yiu Wing Eric LEUNG*

*School of Accountancy*

Values, ethics and governance are considered to be essential skills in nearly every profession and accounting is not an exception. It is crucial to adopt a holistic approach to the ethical development of our students through the curriculum. When developing materials on ethics from an accounting perspective, four micro-modules in the form of whiteboard videos were produced with funds provided by the Courseware Development Grant Scheme (2015-16). These learning objects aim to let students understand: (i) Ethical principles and framework in the context of the Hong Kong environment; and (ii) what it means to think and act as a professional accountant when making decisions.

Delivering these ethical principles through micro-modules satisfies the diversity of learners and their range of learning needs. It also echoes the main eLearning theme of the University by transforming the learning environment to have an increasing level of involvement from the electronic world. These micro-modules are supplemented by in-class discussions of the latest news and of cases relating to financial reporting scandals. Included in each micro-module are concept-checks as formative assessment items. In addition, a case write-up, integrating financial reporting and ethical dilemmas faced by professional accountants, is used for assessment with the help of a set of rubrics. In this poster presentation, we will describe the objectives and processes of this project, and discuss the student feedback obtained, as well as provide examples of some of the practical difficulties encountered implementing the project.

### 46. Using Role Play in Teaching Service Marketing (P43)

*Dr. Cynthia Huiying HOU, Shannon Xiao YI & Kendra Hoi Yin TANG*

*School of Hotel and Tourism Management*

Role-play is an effective approach for enhancing active-listening skills and social problem-solving abilities. This poster describes the development of role-play scenarios, entitled “20-minute restaurant”, which are being used to teach service marketing. The role-play scenarios include three sessions, namely: “Menu Design”; “Restaurant Service Sequence Design”; and “Ensuring Excellent Service Quality”.

The “Menu Design” session helps students understand the responsibilities of service providers and to develop their service strategies. The students enrolled in this course are divided into four groups, and each group is required to design a one-page menu based on a particular type of cuisine, which is decided by drawing lots. The “Restaurant Service Sequence Design” session aims to enhance students’ observation and research skills. Again working in groups, two students are selected per group to act as restaurant staff while the remaining students act as customers. The “Ensuring Excellent Service Quality” role-play scenario was designed to evaluate the service providers’ work place skills. Four customer complaint scenarios have been prepared by the instructor and are assigned to the “customers” of each group. The performance of the “restaurant staff” is evaluated based on how they handle these customer complaints.

According to the student feedback, the role-play scenarios are a welcome and innovative way of teaching them the service delivery process. This is because the students can learn by exploring the knowledge before the relevant lecture, and can practice service provision by themselves. They therefore demonstrate a better understanding of the service delivery process and are able to benchmark the service quality among different service providers.

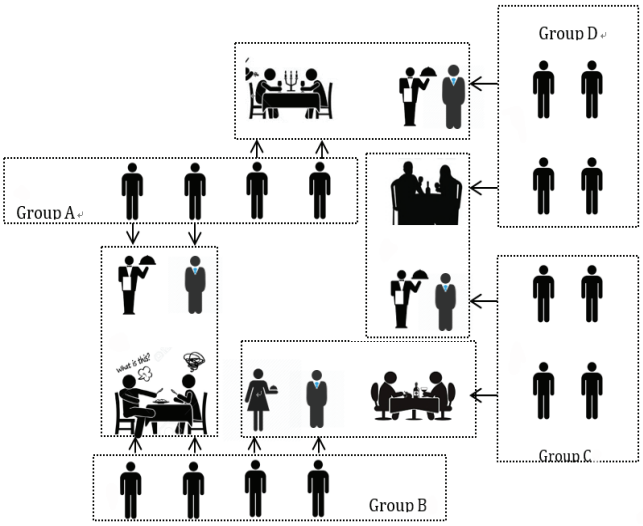


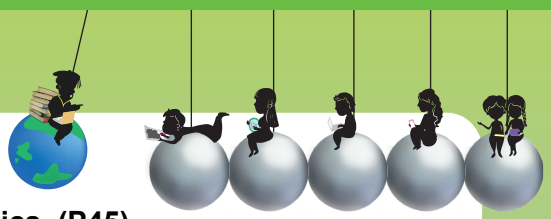

Figure 1. Service delivery arrangement

## 47. Digital Storytelling: Use Teacher- and Student-Created Animated Videos to Teach Organizational Behavior and Strategy Theories (P44)

*Dr. Jenny TIAN*

*School of Hotel & Tourism Management*

In this MMCDG-funded project, we aim to engage undergraduate students in learning business theories, and improve their abilities to solve real-world problems using a digital storytelling approach. An easy-to-use online animated video platform was chosen for the teacher and students to make and share short animated video clips. This video project was implemented in two courses; the Strategic Management (SM) course and Organizational Behavior (OB) course. In the SM course, students were given a video story about how a hotel planned and implemented strategic changes. Students were required to identify, analyze, and solve the problems that emerged during these changes, and demonstrate their solutions in both written reports and animated videos. In the OB course, students were expected to recount their own internship experiences in a video format, with a focus on relating their stories to motivation, leadership, teamwork and/or other fundamental OB theories. In both courses, the students were encouraged to “take a closer look” at the abstract concepts/theories as well as their own experiences, and see the connection between the “explained world” in textbooks and the “experienced world” in their lives. Storytelling and video making both serve as tools for encouraging student engagement, and improving their self-reflection abilities, as well as increasing their problem-solving skills and their sensitivity to ethical issues and multiple stakeholders’ needs in workplace. The feedback from students so far has been largely positive. In addition, the technical problems that arose and the issued that occurred regarding the diverse student skill sets and expectations can be addressed when similar projects are designed in the future.



## 48. Mobile App for learning basic statistics (P45)

*Dr. Fred KU*

*Department of Decision Sciences and Managerial Economics*

In this project, we are proposing to establish an online platform for learning basic statistical concepts as part of the Statistical Analysis for Business Decisions (DSME 2011) course. This is one of the foundation courses on the curriculum of many of the programs in the Business School. More than 500 Year 2 business students take the DSME 2011course each academic year. The mobile App that is being developed will contain teaching videos, which will introduce the basic concepts of statistics. There will also be online examples and exercises, video teaching cases and a discussion forum all focused around the statistics used in business.

This online platform will provide students with different backgrounds and capabilities to learn basic statistics at their own pace, and the online business case studies will give them the opportunity to apply the statistical concepts they learn to a real-life business problem. The discussion forum will create a peer-learning environment for the DSEM 2011 students. Data collected from the online platform will also facilitate teachers to better monitor each student's performance, and provide the necessary support if/when it is required.

For many of the advanced courses in the Business School (and in other faculties and colleges), students are required to carry out projects/ individual studies that involve data collection and statistical analysis from a population (e.g., consumers). The micro-modules on our mobile APP will be an ideal portal to the most relevant and useful resources for students in these courses.

## 49. Mobile App on Learning Monetary Policy (P46)

*Dr. David CHOW*

*Department of Decision Sciences and Managerial Economics*

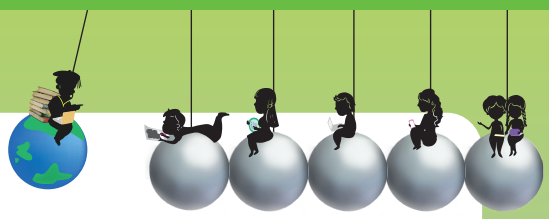
In this project, we aim to develop a mobile APP/ web-based platform for students to learn about monetary policy – an important topic in Macroeconomics – in a more practical way.

The major components of the mobile APP/ web-based platform will be:

1) An online game: After learning the theory of monetary policy and understanding the fundamentals of a central bank, students will be required to participate in the mobile APP/ web-based platform game on trading financial production, which will be directly linked to the market expectation on interest rate policy (e.g., the 30-Day Fed Funds futures prices for the interest rate policy by the Federal Reserve Bank in the US). How students perform in the game will be part of the assessment in the course.

2) Learning materials: Some learning materials, which may or may not be covered in class, will be posted on the APP. These materials are being designed: i) to cover the fundamentals, in order to support a flipped classroom approach; and ii) for the students to use as a reference for forecasting the monetary policy of the central banks.

3) News groups: The instructors and the teaching assistants will regularly post news from various sources (which are related to the monetary policy of the central bank), on the APP/ web-based platform. Given this, students should be able to keep track of the most up-to-date developments of the issues related to the monetary policy.



### 50. Delivering Lectures with Virtual Reality Technology (P47)

*Dr. Linda YUNG & Dr. Vinci CHOW*

*Department of Economics*

We utilize the latest technology to enhance video recordings of lectures. Specifically, we record videos with a 360-degree view of lectures and deliver them in formats that are compatible with virtual reality consumption.

Most of us are very familiar with videotaping lectures and sharing them online with students. However, the traditional way of videotaping lectures is quite inconvenient, especially as the cameras have a limited field-of-view, so they can only record a small part of the classroom at a time. In order to film the teacher, either someone has to man the camera, or the teacher has to stand still throughout the lecture. Both of these options have their limitations.

Recently, a new type of camera was introduced, which has a very wide field of view. For example, the Kodak SP360 camera we use can record a whole hemisphere, so it provides a 360-degree video of the classroom. Now a teacher can set up the camera and leave it alone while they teach, knowing that it will capture everything in the room. Similar cameras are made by Samsung, LG and Ricoh.

In addition to new cameras, online video platforms also have new features for delivering recordings with a 360-degree view. For example, both YouTube and Facebook now support 360-degree video. When paired with a virtual-reality headset, the video pans around as the viewer moves their head, and thus it provides an experience similar to actually sitting in the lecture.

In the past term, we have used this method to record a whole course, as well as several distinguished lectures. A big advantage of the latter is that many more people can now experience these events, when previously the numbers were limited by the number of seats at the venue.

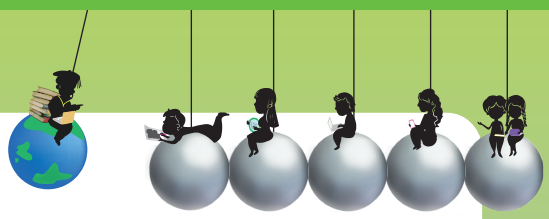
Sample: https://www.youtube.com/watch?v=7kXQ_TC-Yes

### 51. Establishment of New Paradigm with Feasible Models in Teaching and Learning Science for Problem Solving and Future Development (P48)**

*Prof. Wai Yin POON[1], Prof. Thomas Kwok Keung AU[2], Prof. Ming Chung CHU[3], Prof. Liwen JIANG[4], Dr. Kendrew Kin Wah MAK[5], Prof. Pang Chui SHAW[6] & Prof. Teng Fong WONG[7]*

*[1]Faculty of Science, [2]Department of Mathematics, [3]Department of Physics, [4]School of Life Sciences, [5]Department of Chemistry, [6]School of Life Sciences, [7]Earth System Science Programme*

The rapid development of technology has changed the way students acquire knowledge and information, and many teachers have started to explore various ways to use technology to enhance teaching and learning. This project secured the support of more than 35 teachers from a wide mix of science disciplines to work together to make good use of advanced technology to tackle difficulties encountered in science teaching. In particular, the project aims at finding ways to address the difficulty caused by the heterogeneous background of students in junior year science courses. The project is now in its third year of operation and project participants have developed a host of digital resources and have explored various models to make use of the digital resources. The project has now come to its final stage of self-evaluation and dissemination, and feedback from stakeholders is most welcome. As an early adopter of micro-modules and “flipped classrooms”, project participants believe that through sharing our ideas, promoting successful practices and collecting feedback from stakeholders, educators can work together to use technology in a more effective and efficient manner to enhance teaching and learning. This poster will provide an overall summary of the entire project. Moreover, a total of 6 posters representing the works of various science disciplines under this project will also be displayed in this Expo. The topic of these six posters are respectively “Preparation for Flipping a Statistics Classroom



in an Undergraduate Nursing Research Course", "Micro-modules for Learning in Fundamental Chemistry", "The Microscopic World of Bryophytes: A Mobile and Blended Learning Experience", "Blended Learning for Plant Biodiversity", "Developing Video Learning Modules for Cell & Developmental Biology" and "Virtual Labs on Frontiers in Biochemistry". From these six presentations, more details of the works accomplished by this project can be found.

**24 more teachers as Co-supervisors / Co-investigators.

## 52. Preparation for Flipping a Statistics Classroom in an Undergraduate Nursing Research Course (P49)

*Prof. Doris Y.P. LEUNG[1], Prof. Siu Hung CHEUNG[2] & Prof. Wai-Yin POON2,3*

*[1]The Nethersole School of Nursing, [2]Department of Statistics, 3Vice-President*

Challenges

Nursing Research is the only research course (of 45 hours in duration) in the Bachelor of Nursing degree program. It covers a wide range of topics from evidence-based practice to a basic knowledge of quantitative and qualitative research methods. Although the statistics part of the course emphasizes the utilization of statistical methods rather than investigating the details and proofs in any depth, it is still consistently difficult to cover the full complement of course materials, and most students who take the course are anxious about the statistics content. The adoption of a flipped statistics classroom in this course has been suggested to be a possible solution.

Aim

To describe the content and format of the video recordings being designed for the flipped statistics classroom

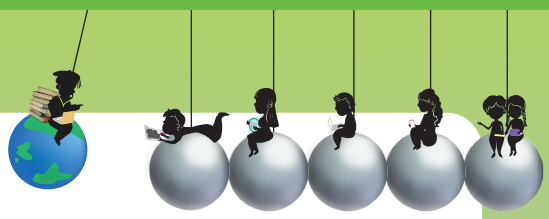
Materials

Six modules are currently under development, which emphasize the role of statistics in nursing research. These modules include: 1) the role of statistics in nursing research; 2) formulating research questions; 3) descriptive statistics; 4) treatment comparisons; 5) association analysis; and 6) advanced statistical analysis. To better engage the nursing students, we are using cartoons with two key nurse characters to illustrate the use of statistical methods in different clinical scenarios. The two characters have many interactions, which clearly illustrate their daily practice in the clinical setting. Each module will be of a short duration (i.e., ~ 10 minutes), and they will all be available in the KEEP platform. The modules will further be supplemented with online learning materials, and assessment to foster an in-depth understanding of the statistical concepts during the learning process.

Evaluation

Nursing students who enroll on the course will be invited to give feedback about the six modules via a series of focus-group interviews.

Acknowledgments: This work is supported by a project funded by the UGC Funding Scheme for Teaching and Learning Related Initiatives (2012-15 Triennium), and it is led by Prof WY Poon



### 53. Micro-modules for Learning Fundamental Chemistry Topics (P50)

*Dr. Kendrew Kin-Wah MAK & Dr. Yu-San CHEUNG*

*Department of Chemistry*

The implementation of the "3+3+4" academic structure is widening the science background knowledge of students when they start university. Such heterogeneity poses a problem for teaching chemistry and conducting laboratory sessions. To cope with the learning diversity of Chemistry students that we have encountered, micro-modules on various themes are being developed to facilitate the teaching and learning of fundamental chemistry topics at the junior undergraduate level.

In this project a critical mass of learning materials (i.e., micro-modules) are being prepared for students on three main themes:

1. Essential laboratory skills: Acquiring good laboratory skills is a fundamental part of learning chemistry. Thus, a comprehensive collection of video clips are being prepared to demonstrate the wide spectrum of general and advanced laboratory skills that are essential for chemistry undergraduate students to know.

2. Micro-modules on fundamental chemistry topics: To bridge the gap between secondary school and university curricula, a series of video-based micro-modules on fundamental chemistry topics; such as Bonding and structure, Chemical kinetics, and Equilibrium are being prepared as self-learning teaching aids. We hope that these will help students catch up with these fundamental topics, and act as useful resources to support the implementation of flipped classrooms in junior undergraduate courses.

3. Assessment items and recommended study guides: The videos and micro-modules are accompanied with collections of self-assessment items (e.g., MCQs) and study guides. These help the students with their self-learning, as well as with adopting the learning materials required for flipped classrooms.

### 54. Blended Learning for Plant Biodiversity (P51)

*Dr. Cheung-Ming CHOW*

*School of Life Sciences*

Traditionally, students in the Biology programme at the CUHK learn plant diversity by examining the morphological characteristics of specimens provided during the laboratory sessions. With the time constraints and limited number of specimens available, students often find it stressful to distinguish similar specimens and identify their macroscopic and microscopic features during the laboratory sessions and in examinations. To overcome such a learning hurdle, six online learning courseware were developed: Online Self-learning Systems; BioPhotoSharing@cuhk; BioMining; Interactive Virtual Plant Dissection Lab; Virtual Lab of Ferns: Fern Identification and Virtual Lab of Bryophytes: The Microscopic World of Bryophytes.

In this poster, we will demonstrate how these online learning resources can supplement in-class learning to encourage independent and collaborative knowledge acquisition, as well as provide a flexible virtual learning experience for those CUHK students who are studying BIOL3012 and BIOL3022 – Biodiversity Laboratory I and II.

### 55. The Microscopic World of Bryophytes: A Mobile And Blended Learning Experience (P52)

*Dr. Cheung-Ming CHOW & Tin-Hang WONG*

*School of Life Sciences*

The Microscopic World of Bryophytes is a virtual laboratory about non-vascular plants such as mosses, hornworts and liverworts. It is a mobile device-compatible, self-studying tool, which provides students with an in silico learning experience, which aids their study of living and preserved bryophyte specimens.

In this virtual laboratory, students learn about the macroscopic and microscopic characteristics of bryophytes by examining four specimens without living specimens or microscopes. In addition to the background information and image descriptions, the students are guided with simple interactive exercises such as adding labels and clicking on the checkbox. For microscopic images, students can select the suitable magnification according to the desirable level of investigation. Together with the multiple level menu, they can have full control of their learning progress. With this courseware, students can prepare for and subsequently revise the content of lab sessions with great flexibility.

### 56. Developing Video Learning Modules for Cell and Developmental Biology (P53)

*Prof. Liwen JIANG & Jenny Ching Man LAI*

*School of Life Sciences*

In this project, we are in the process of developing a series of online teaching videos to describe the basic knowledge as well as more in-depth information about cell and developmental biology. Undergraduate students collaborate with postgraduate students and postdoctoral fellows in the research laboratory to produce teaching videos showing various biological concepts and techniques, as well as more advanced research methods. Quizzes corresponding to each video are also being developed to test the students' understanding throughout the course. Students are expected to watch the videos and self-learn the content in their own time. This means that the valuable in-class time can be used for more in-depth interactive teaching and learning. In this project, multiple teaching videos have already been generated. These introduce a range of topics for the Cell and Developmental Biology course, including: Apoptosis; Mitochondria; Cell Theory; Stem Cells and Red Blood Cells.

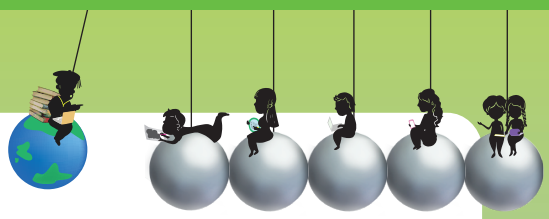
### 57. Development of a Virtual Laboratory to Teach Frontiers in Biochemistry (P54)

*Prof. P.C. SHAW, Prof. S.K. KONG, Queenie LAU & Kenneth LEUNG*

*School of Life Sciences*

To facilitate the teaching and learning of basic biochemistry, a module that provides virtual laboratory sessions is being developed. The virtual Laboratory will: (1) Provide a higher level of engagement for students in their studies; (2) provide students with a fast and flexible way to understand the principle of experiments; (3) enhance teaching efficiency by reducing the demand for laboratory facilities and experimental equipment; and (4) provide non-biochemistry major students with more opportunities to understand biochemistry.

The Virtual Laboratory can be categorized into four topics that are especially important for helping students to understand biochemistry. They are: Nucleic Acids, Proteins, Enzymes, and Genetics. Each topic includes animated games to illustrate important scientific events in history; this helps the students appreciate the human factor in the development of Biochemistry as a subject. There are also interactive animated questions to reinforce the students' understanding of the principles and mechanisms described in the Virtual Laboratory. Revision questions in MCQ format are also available for students to evaluate what they have learned.



So far, three Virtual Laboratory sessions have been developed. These are: (1) From Fermentation to Enzymes; (2) Protein Sequencing; and (3) DNA Sequencing.

A number of additional Virtual Laboratories are now being considered. Our plan is to launch the Virtual Laboratory module on our eLearning platform (http://www.bch.cuhk.edu.hk/learnbiochem/), and link it with the BCHE2000 Frontiers in Biochemistry course. We are now seeking questions and comments from relevant stakeholders such as the students, demonstrators, tutors and teachers.

### 58. "Weather in a Tank" Experiment to Demonstrate Atmospheric and Oceanic Fluid Phenomena (P56)

*Prof. Amos TAI , Prof. Francis Tam, Walter Wong*

*Earth System Science Programme*

As we are facing unprecedented climate change in the coming decades, enhancement and popularization of climate education are especially needed to help brace society for the imminent impacts. However, many students find it difficult to grasp the non-intuitive nature of rotating fluids, which is essential to understanding how weather systems and climate work. A traditional approach that uses only equations or computer simulations often obscure the abstract concepts behind. In this educational initiative, we developed the “Weather in a Tank” experimental setup for use in both our curriculum and public education, with an aim to bridge the gap between real-world weather phenomena and the theories and equations that describe them. It entails a rotating tank of water with a video camera in the frame of rotation, so that peculiar fluid phenomena in the rotating frame analogous to real-world atmospheric and oceanic phenomena can be simulated in visualized readily and interactively. It is hoped that this approach can elicit greater student and public interests in the quantitative study of weather and climate, and promote science education at large.

### 59. A Web-based Student Learning Outcomes Mapping Platform for Enhancement of Undergraduate Orthopaedic Training – the Final Portrait (P56)

*Dr. Tsz Ping LAM[1], Lee Ning WONG[1], Prof. Shekhar-madhukar KUMTA[1], Prof. Kevin Ki Wai HO[1], Dr. Bobby Kin Wah NG[2] & Prof. Jack Chun Yiu CHENG[1]*

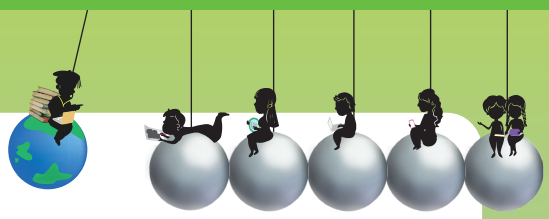
*[1]Department of Orthopaedics & Traumatology, [2]Department of Orthopaedics and Traumatology, Prince of Wales Hospital*

Introduction:

The Student Learning Outcomes (SLO) Mapping Platform (SMP) is a web-based platform, which was developed following the principles of outcomes-based education, and it was completed over a 6-year period. In this study, we conducted a multi-faceted evaluation of the SMP.

Materials and Methods:

This was a prospective cohort study, whereby both medical students and teachers were recruited for their evaluation of the SMP. To test if the platform can enhance student learning, the students’ academic performance was determined in the module-end examination and in the MBChB final examination over two consecutive years. Thus, one class made use of the SMP, whereas the other did not.



Results:

The results from the SLO feedback questionnaire indicated that the Learning Materials and Self-assessment Exercise, the Performance Analysis Report (PAR) and the Discussions were all satisfactory, ranging between 4.01 to 5.08 from the students, and between 4.50 to 5.25 from the teachers.

The module-end examination results for the 2009-2010 and 2010-2011 academic years showed improvements in the "Written Part (MCQ)", "OSCE on History Taking" and "Overall Average Marks" for the class using the SMP.

The results from the MBChB final examination using the same set of multiple choice questions for two consecutive years (i.e., 2013-2014 and 2014-2015), were evaluated to determine if the PAR had any impact on the students' academic performance. The results showed that students receiving the PAR performed better.

Discussion and Conclusions:

The SMP was well accepted by both the students and the teachers, and it was shown to have positive effects both for enhancing the students' academic performance, and for facilitating communication between the students and teachers. We suggest that the SMP can easily be disseminated to other programs.

Funding Source:

This study was funded by Teaching Development Grants for the 2009-2012 and 2012–2015 Triennia.

## 60. Navigating the Diverse Learning Curriculum of Intensive Care Medicine; the 1-500-5-1 strategy (P57)

*Dr. Enda O'CONNOR*

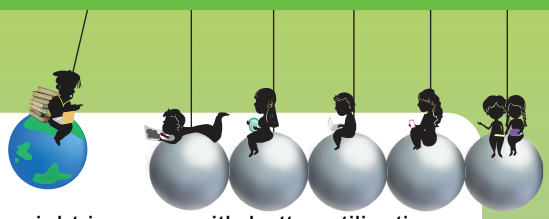
*Visiting Scholar, Department of Anaesthesia and Intensive Care*

The Intensive Care Unit (ICU), as a learning environment, has a multi-discipline patient case-mix, with specialties as diverse as neurosurgery and microbiology. We therefore designed a guided self-learning framework to help ICU medical trainees navigate this diversity of learning topics.

We used Adult Learning Theory and a blended learning strategy using a microbiology theme for this project. Seven (of 11) ICU trainees volunteered to: (a) self-select a clinical microbiology topic; (b)design an evidence-based (EB) question; (c) perform a literature search; and (d) post an answer to their question on a bespoke group chatroom (at www.elearnicu.com). Online discussions, moderated by an ICU consultant, helped learners to structure their questions, as well as to search and grade the literature, and provide useful learning resources. A novel "1-500-5-1" model (with 1 EB question, a maximum of 500 words, a maximum of 5 references, and 1 key article), was specified for submission, and an online survey was used for evaluation. All the participants completed both the summary and evaluation.

Participants reported improvements in both their knowledge and management of patients with infection. Incidental learning about literature searching and appraisal was reported and demonstrated, both of which are important skills that are transferable to other settings. A broad literature review was evident, with 85.7% (30/35) of the cited references drawn from non-ICU journals. Participants used instant messaging applications (such as WhatsApp® and mobile phone email) for all their online discussions. They cited the separate login, the absence of automatic message notifications, and non-mobile-friendly software, as reasons for non-compliance with the website chatroom.

In summary, the 1-500-5-1 tool appeared to help medical trainees broaden their learning while promoting incidental learning of critical literature analysis. The findings also contribute to current theories of adult



learning in the virtual environment. Compliance with eLearning activities might improve with better utilization of contemporary smartphone applications.

### 61. Applying Physiological Concepts to Real Sports: A Micro-module Package (P58)

*Dr. Isabel HWANG[1], Daniel C.W. LEE[2], Dr. Maria WAI[1], Alex YUNG[3], Yuri AU[3], Dr. Joyce LAM[1], Ray LEE[4], Daisy CHEN[4], Rachel Y.Y. LEUNG[5] & Dr. Yan JIN (corresponding author)[3]*

*[1]School of Biomedical Sciences, [2]Department of Sports Science and Physical Education, [3]Office of Medical Education, [4]Information Technology Services Centre, [5]Faculty of Medicine, [6]Education Resources, Office of Medical Education*

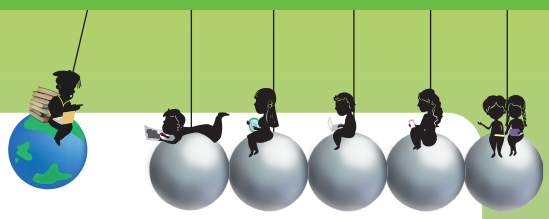
A micro-module package entitled 'Applying Physiological Concepts to Real Sports' that comprises nine animated, interactive and self-directed micro-modules was designed to help students explore how physiological knowledge can be applied to exercise and real sports. The micro-module package is intended for use as post-class e-learning material. Elite student athletes were recruited from different departments to demonstrate the major muscles used in the popular sports that form part of the physical education curriculum at the Chinese University of Hong Kong. Based on our preliminary study (data not shown) on the effectiveness of using micro-modules in a flipped classroom for year 1 students, each micro-module addresses just one key topic. The micro-module package offers high flexibility and sustainability to both student users and course teachers. The entire package can be used as a single teaching and learning website for different disciplines. Each of the individual micro-modules can also be used on its own to support other topic-related lectures, as an individual http weblink is provided. Self-checked exercises at the end of each micro-module test understanding and the ability to apply the physiological concepts and knowledge. We expect the micro-module package to deliver several potential learning benefits. All of the micro-modules produced can be used to facilitate blended learning and revision in an asynchronous manner, and serve as an adjunct tool to support in-class activities.

### 62. Articulation of Metabolic Pathways Using Articulate Storyline (P59)

*Dr. Rebecca Kit Ying LEE[1], Daisy CHEN[2] & Bernard Yat Nam NG[1]*

*[1]School of Biomedical Sciences, [2]Information Technology Services Centre*

Teaching biochemical pathways can be extremely challenging. Students always encounter difficulties in understanding abstract metabolic pathways as well as how different pathways are integrated. In this project, a student-helper will be invited to team up with one of the teachers. This will enable the teacher to have a better understanding of the difficulties that students might encounter in their studies, and it will allow them to design a learning tool that is most suitable for the students. The Metabolism Metro is a self-learning tool, which aims to stimulate the students' interest in exploring the human metabolic pathways. The major pathways will be presented in an easy-to-understand and interactive manner using animations, narrations, and videos. Key molecules involved in the pathways will be presented as "railway stations" and students can begin their journey by selecting different "railway lines" (metabolic pathways). This interactive self-learning tool will be packaged as a courseware using the Articulate Storyline eLearning authoring software.



### 63. Digital Microscopy for Teaching Human Histology to Preclinical Medical Students (P60)

*Dr. Joyce LAM[1], Dr. Sam POON[1]& Jackey WONG[2]*

*[1]School of Biomedical Sciences, [2]Faculty and Planning Office, Faculty of Medicine*

In this poster, we introduce the use of a virtual histology laboratory to teach cell and tissue structures to preclinical medical students in the Faculty of Medicine. Digital SlideBox is a user-friendly online platform, which allows glass slides to be scanned in a digitalized format and it mimics the function and operation of traditional light microscopes. This modern software has thus replaced the use of conventional light microscopy in our teaching.

For teachers, personalized annotations can be made when preparing their teaching material before the class, and this maximizes their teaching efficiency. Students can create their own annotations or add to the teachers' notes during or after class for their own revision purposes.

The Digital SlideBox online platform enables the teaching of large-size classes, and it both standardizes the course material taught and reduces lab costs with regards to preparing glass samples and maintaining microscopes. This software also facilitates students in their revision of class material anytime and anywhere.

### 64. uReply 2016 (P61)

*Prof. Paul LAM, Kevin WONG & Cherry TSOI*

*Centre for Learning Enhancement And Research*

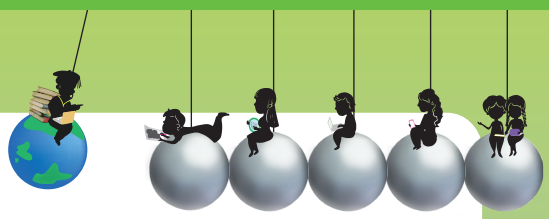
uReply is a home-grown and campus-wide tool for enhancing classroom interactions. We are pleased to report that so far this year, there has been quite extensive growth in terms of its usage and functionality. Indeed, uReply has reached a record of 1 million page-views since its launch in 2012. This means that over a 4-year period, roughly 1 million responses were collected through the system. At present, over 1000 of our teachers have requested user accounts, to use uReply, and there are 10,370 questions stored in the Question Bank. We have recently added some new functions to uReply. These include several new Activities, as well as a new component called 'Share' for exchanging and showcasing multimedia files in class. Please come to our booth for a demonstration.

### 65. uReply with Student Login in 2017 (P62)

*Prof. Paul LAM & Kevin WONG*

*Centre for Learning Enhancement And Research*

In February 2017, uReply will have a new running mode called the 'login' mode. As uReply is effectively linked up with the Central Authentication and Directory Service (CADS) of the University, teachers will soon be able to run uReply in two modes. Thus, in addition to the usual 'anonymous' mode in which student names and ID are not required, with the new 'login' mode, students must use their CWEM accounts in order to access the Q&A session. For sessions run in this 'login' mode, teachers will be able to monitor the learning advances of individual students more closely. Participation reports will be more meaningful too, as teachers will be able to easily track the attendance and level of participation of students in not just one but across multiple sessions (e.g., they can obtain a summary for all the sessions of one course). Even when the 'login' mode is in action, the 'anonymous' mode will continue to be an important component of uReply as its main strength is to encourage interactions in a stress-free atmosphere.



### 66. Migrating from Teaching Laboratory to Industry – A "Flipped Classroom" Approach (P63)

*Dr. George WONG*

*Department of Chemistry*

"Testing and Accreditation" stream has been introduced to the Chemistry curriculum to prepare students to work in the testing industry after graduation. Students have to work in a local testing laboratory for 320 hours as a graduation requirement. We have our first batch of students gaining experience in testing laboratories. In general, their feedback indicates that the instrumentation they learn to use at school does not align well with what is used in industry.

The reason for this is that some advanced instrumentation techniques are not covered in our current courses. Indeed, we do not have time in our curriculum to cover a number of the important concepts and techniques that would help students integrate quickly in the testing industry.

In this project, we aim to develop the learning materials required by Chemistry students in order to: a) Fill the gap between academia and industry; and b) Better equip the students with knowledge about the instrumentation commonly used in the testing industry, and in this way, increase their competitiveness in the job market.

### 67. Regularization of Fundamental Chemistry Knowledge through Online Interactive Video Micro-modules (T2)

*Prof. Steve TSE*

*Department of Chemistry*

The foundation chemistry courses play a crucial role in programmes run by the various Science Departments and also in that of the General Education Foundation. However, the development of these foundation courses met new challenges with the recent implementation of the 4-year curriculum and the Hong Kong Diploma of Secondary Education (HKDSE) framework. Due to the vast differences in secondary education that students receive, it is extremely complicated to construct foundation courses that effectively prepare them all for their subsequent classes whether in the Chemistry Department or in other Departments. To resolve this issue, the Department of Chemistry aims to incorporate eLearning materials, such as micro-modules and a flipped classroom strategy, into one of the foundation courses, (i.e., Principles of Modern Chemistry; CHEM 1070).

Videos from a comprehensive series of Chemistry lectures will be provided to the students online so that they can study the relevant materials at their own pace. To encourage utilization of these online resources, and assess the effectiveness of our various strategies when applied specifically to Chemistry courses, students will be tested on the eLearning materials. The knowledge learned from this project will facilitate the application of eLearning strategies to other courses in the Chemistry Department, and will provide invaluable information for courses organized by other Departments as well as other general educational activities in Hong Kong.

## 68. A Flipped Classroom of SAS Programming for Statistical Analysis in Public Health (P64)

*Prof. Ka Chun CHONG & Katherine Jia*

*The Jockey Club School of Public Health and Primary Care*

Given the paramount significance of data analysis in all evidence-based studies, empowering students with both the statistical theories and their applications is undoubtedly crucial. This therefore necessitates an interactive course where the back-and-forth understandings and practices of both conceptual frameworks and software applications are facilitated through easily accessible course material and statistical software.

Based on self-paced online videos and the widely-used Statistical Analysis System (SAS) software, which is freely available to every student, the Flipped Classroom of SAS Programming on Statistical Analysis in Public Health consists of seven micro-modules about statistical methodologies. The micro-module first describes the concepts, uses as well as the syntax of each statistical theory. This is followed by the respective programming demonstration as a practical application on the SAS software. The videos in each micro-module and the datasets used in the demonstrations have been made available on the flipped classroom's central webpage (http://micromodule16.comuf.com/Index.html).

Each online video is structured as follows: 1) statistical concepts are first introduced; 2) their applications in SAS are illustrated through presentation slides describing the methodological background; 3) practical programming demonstrations on the SAS software interface. The videos are sound-illustrated and recorded by screen-capturing software, after which color-coded annotations are added to explain the motivation, structure and syntax of each program statement. There are also data interpretations on the software for the clear delivery of SAS programming procedures and their statistical meanings. Once complete, the videos are uploaded to a micro-module webpage, which has specifically been set-up as a central hub with all seven micro-modules and their related material instantly available to the students.

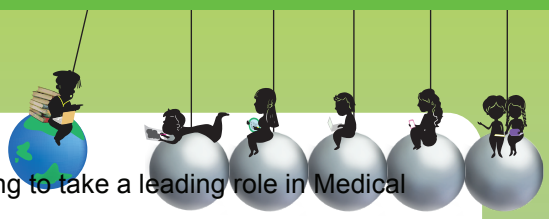
## 69. A New Concept for the Micro-modules in Medical Education: eLearning Clinical Skills (eC Skills) Channel (P65, T4)

*Dr. Florence TANG[1], Prof. David CHUNG[2], Prof. Simon NG[3], Prof. Tony MAK[3], Jenny FANG[2], Ray LEE[4] , Kristy FUNG[5] & Dr. Olivia NGAN[6]*

*[1]School of Biomedical Sciences, [2]Clinical Skill Learning Centre, [3]Division of Colorectal Surgery, [4]Information Technology Service Center, [5]Faculty of Medicine, [6]The Jockey Club School of Public Health and Primary Care*

The transition of pre-clinical to clinical education involves an evolving learning approach, from the repetitive memorization of facts to the application of comprehension learning. The eC Skills Channel in a novel teaching courseware, which aims to assist in the learning of clinical Anatomy as well as other clinical skills among medical students in the bridging course, which is part of the Faculty of Medicine curriculum. The courseware is composed of illustrations with explanations, animations, and videos, and it is compatible with all types of smartphone and tablet device. The courseware is available through Blackboard eLearn, and medical students are encouraged to be more effective learners by reinforcing the different concepts they learn at school while studying at home.

An anonymous, self-administrated survey was conducted to assess the attitudes of the courseware users towards the eC Skills Channel. Thirty students completed and returned the questionnaire, and the majority agreed that the new courseware helped them to see the material in a new way and reinforce what they learned



in the classroom. The development of the eC Skills Channel is promising to take a leading role in Medical Education by supporting the learning requirements of the students.

### 70. The Pilot Study on the e-Professional Study (ePS) in Teaching Anatomy and Physiology: Blended Learning Approach for the Health Professional Education in Faculty of Medicine (P66)

*Dr. Florence TANG[1], Prof. Aden Ka-yin CHAN[2], Prof. Wai Tat WONG[3], Taylor TANG[4], Daisy CHEN[4], Ray LEE[4] & Dr. Olivia NGAN[5]*

*[1]School of Biomedical Sciences, [2]Departmenrt of Anatomical & Cellular Pathology [3]Department of Anesthesia and Intensive Care, [4]Information Technology Service Center, [5]The Jockey Club School of Public Health and Primary Care*

Knowledge of Anatomy is fundamentally important in the Health Professional curriculum. To support Anatomy learning and teaching, a new courseware entitled ePS (electronic Professional Study), has been developed. In essence, ePS consists of three main components; narrative videos, clinical case studies, and quizzes, and it has two special features to make it more attractive to the students. These are: (1) A storyline, which is used to integrate the learning materials with virtual interactions under the theme of a future space city. This encourages the students to connect motion paths to the animations making the micro-modules come to life. (2) In the formative assessment, gamification design elements have been used to create a fun learning experience, which facilitates cognitive learning. The topic we selected to trial ePS with, was the cardiovascular system, as this is one of most commonly-diagnosed system disorders.

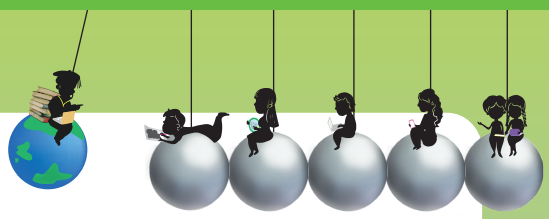
ePS was successfully launched in Blackboard Learn, where access is available to students from the Biomedical Engineering, Chinese Medicine, Medical and Pharmacy curricula. To find out the students' opinion about the courseware, we collected feedback via e-submission. The respondents agreed that the gamification approach adopted by ePS was an interesting way to study the cardiovascular system, and it helped reinforce the knowledge gained. This study shows that the gamification design elements included in ePS can easily be applied in Anatomy as well as other science-related learning and teaching in the Faculty of Medicine.

### 71. Use of Micro-module to Enhance Student's Learning Experience of Remote Sensing (P67)

*Dr. Frankie WONG*

*Department of Geography and Resource Management*

Remote sensing is a process by which data are collected and recorded usually in the form of images, either by satellite or by plane. These images are then further processed, analyzed and applied to various aspects of geography. As it is based on the principles of physics, remote sensing is regarded as a being a science subject within the field of geography. In order to help students who have a limited science background to understand the basic principles of energy interaction, four micro-modules were developed (with support from a Micro-Module Courseware Development Grant), to facilitate their learning of remote sensing. The four modules include: (i) A general introduction about the process of remote sensing; (ii) electromagnetic radiation; (iii) the interaction of energy with the atmosphere; and (iv) the interaction of energy at various features of the earth. These are all fundamental topics that are relevant to remote sensing. The designed modules provide animated and interactive learning materials supplemented with narration. Visual elements, including animated graphs, figures and video extracts, are used to enhance the learning experience of students. In addition, lots of real-life examples are incorporated to arouse the interest of students. In each module, students are required to review the material



carefully. In addition, for some of the content, students must explore the concept or materials through some interactive activities. The duration of all the modules is approximately 75 minutes, and at the end of each module, there is a short quiz to test the students' understanding of the materials. In the 2016-17 fall semester, the completed modules were sent to students studying remote sensing courses as supplementary self-learning materials. These courses comprised one major course, one general education course and one taught master's course. Altogether, around 100 students have experienced the modules so far. After they completed them all, the students were requested to complete a simple questionnaire, which was designed to find out about their learning experiences and their satisfaction about the micro-modules. The feedback received will be used to enhance the current set of micro-modules and they will also provide valuable information with regards to the development of future micro-modules.

### 72. Digitizing Cultural Studies Pedagogies (P68)

*Prof. Katrien JACOBS*

*Department of Cultural and Religious Studies*

I have a Micro-Module Courseware Development Grant to produce micro-modules and integrate methods of eLearning into a core course for the BA Programme in Cultural Studies, CURE 1009 - Research Methods in Cultural Studies. This pilot project was launched in the Fall 2016, and our aim is for the knowledge gained (when developing the micro-modules for this CURE 1009), to be useful for developing other eLearning courses in the Department of Cultural and Religious Studies.

The course website can be accessed here: http://www.cure1009.com

We have also produced a 3-minute video to document the eLearning process:

https://www.youtube.com/watch?v=d3cZgD6tBYA&feature=youtu.be

The Research Methods in Cultural Studies course provides an introduction to the field of Cultural Studies and its varied research methods and practices. The course focuses specifically on ethnography as this is an informed way for researchers to engage with cultural groups and subcultures such as ethnic minorities and people of different sexual orientations. In the Fall 2016 term, we expanded the scope of the course to integrate online communication and audio-visual documentation within a flipped classroom environment. Students are encouraged to engage in web-based learning while applying ethnographic research methods, and to share

their ideas as well as both textual and audio-visual assignments on a web-based platform. The production of micro-modules addresses a need to professionalize this aspect of the course in line with the general mission of the university to technologize the learning experience.

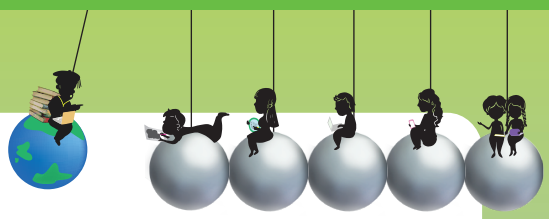
### 73. Flipped classroom – Can it help to equip social work students with practical skills? (P69)

*Prof. Ching-man LAM, Dr. Grace Suk-man LEUNG, Dr. Ching-wen CHANG,*

*Cecilia Man-sze CHEUNG & Dr. Rhea Rui YUAN*

*Department of Social Work*

Learning interviewing and relationship building skills is an integral part of social work training. Traditionally, lecture and in-class role-play practices are common means for disseminating these skills and knowledge



to students. With support from a CUHK Micro-Module Courseware Development Grant, an eLearning component was developed based on the flipped classroom approach, to help equip students with the knowledge and skills for client engagement and problem exploration.

The flipped classroom approach engages students in active learning, and ensures that they do the preparation necessary for a productive class time. The design for this flipped classroom includes mini video lectures for concept explanation, online pre-video questions (MCQs), skills demonstration and post-video questions. This flipped classroom approach shifts the pedagogy from a teacher-centered to a learner-centered mode, enables students to gain knowledge with reflection outside the classroom, and facilitates students to learn according to their own pace and style.

Feedback on the flipped classroom learning approach has recently been collected from the social work students. A comparison of the pre- and post-MCQ scores indicates that there was an improvement in their knowledge. In addition, about 75% of students were satisfied with this new learning strategy, and 73.8% indicated that the videos contributed to their learning. In our presentation, we will share our experiences in using a flipped classroom in social work teaching as well as the evaluation results obtained so far.

### 74. Undergraduate Research in Music Education: Music Pedagogy at CUHK (P70)

*Dr. Brian C. THOMPSON*

*Department of Music*

This poster illustrates in words and images the implementation of capstone courses in Music Pedagogy (MUSC4513 and MUSC4523). In 2015-2016, the first cohort of students in the four-year programme graduated from CUHK's BA programme in Music. This milestone came some six years after the Department of Music began planning changes to its undergraduate curriculum. Ultimately, students had four choices of capstone projects: composition, pedagogy, performance, and senior thesis (research papers in music history, theory, or ethnomusicology). Just over a third of the students opted for the pedagogy project, and completed projects on such wide-ranging topics as teaching the French horn to young children to the use of smart telephone apps in the study of aural skills. In this poster, we aim to: 1) Explain the rationale for the Pedagogy option within the CUHK's BA programme in Music; and 2) Describe and illustrate the projects that students completed in the spring of 2016.

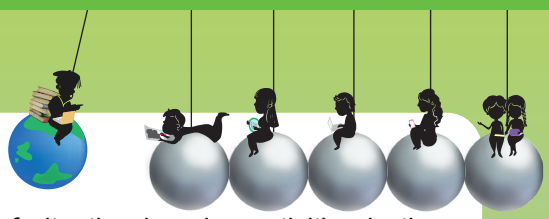
### 75. Nurturing Academic Literacy Through a Journal Publishing Assignment (P71)

*Prof. Helena FRANCKE*

*School of Journalism and Communication*

Academic literacy is often portrayed in terms of students' writing and relates to issues concerning genre knowledge (Russell et al., 2009). However, academic literacy can also include an understanding of the social organization, power relations, and technology associated with how knowledge is produced and disseminated in various academic genres and disciplines (see Andersen, 2006; Lea & Street, 2006). Academic literacy is important not only for higher education but also for many professionals who produce, mediate or use these genres, such as researchers, librarians, teachers, journalists, and publishers.

This contribution describes a postgraduate level course designed to aid students master the cultural tools (Wertsch, 1998; Säljö, 2005) of scholarly publishing by focusing on the social organization of publishing, on the technology used, and on writing in a social science journal article genre. The work methods were informed by a



sociocultural approach to learning, which emphasizes the importance of situating learning activities in the practices in which what is learnt will be used (e.g. Lave & Wenger, 1991).

The students were given the task of setting up a scholarly (student) journal and to write and peer review articles for publication in the journal. The contribution considers some of the challenges met in the course, such as getting the students to align the constraints of the assignment with the real-life simulation of a scholarly journal. Furthermore, some of the benefits of the course are discussed, for instance the possibility of designing education that students perceive as being academic and at the same time relevant to professional fields.

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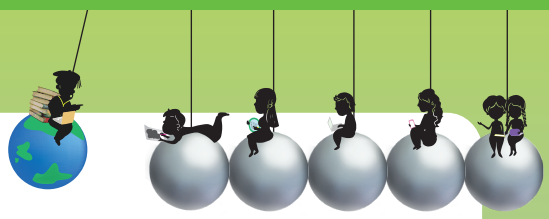
## 76. Micro Modules and Intercultural Mentoring Online: Enriching International Educational Experience (P72)

*Prof. Jane JACKSON*

*Department of English*

With the assistance of ELITE and an eLearning grant, a series of micro-modules has been developed to support intercultural communication and engagement abroad. This fully online, credit-bearing general education course aims to deepen the language and intercultural learning of semester- and year-long international exchange students when they are in the host country. Each week, the course participants view the micro-modules on Blackboard and digest the related readings and YouTube links. In full-class forum discussions, small fieldwork groups, and via a reflective essay, the participants then share their international experience and their evolving understanding of intercultural concepts and issues. Throughout the semester, guided critical reflection prompts the participants to consider the impact of their intercultural attitudes and actions on their relations with people who have a different linguistic/cultural background to them. They are also encouraged to make connections to the intercultural concepts and theories that were explained in the micro-modules and assigned readings. The poster provides an overview of the course, including the aims; activities; approaches to learning and teaching; micro-module content; modes of assessment; and the grading scheme. It also reviews the midterm findings for the 2016-17 course, and describes the key learning outcomes, the student perceptions of the micro-modules and their intercultural mentoring. The lessons learned are summarized along with implications for future plans for this online course.



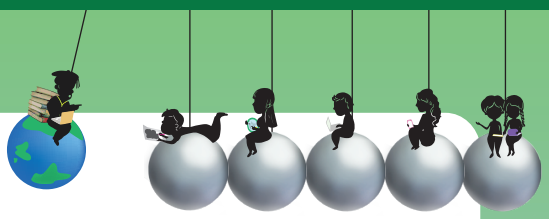
### 77. Concept-based Instruction on English Modality (T12)

*Prof. Helen ZHAO & Lexi Li*

*Department of English*

Compared to the traditional view of pedagogical grammar, a cognitive linguistics (CL) approach offers second language learners a more accurate, systematic, and complete perspective for understanding the complex semantics of some highly polysemous structures such as English modals (Tyler, 2012). This approach is in line with the principles of concept-based instruction (CBI) (Lantolf, 2010; Negueruela & Lantolf, 2006). The present study aimed to investigate whether CL, combined with the CBI paradigm, helped to promote the acquisition of English modals. We focused on four modal verbs: must, should, may, and will. Thirty-two intermediate Chinese EFL (English as a foreign language) learners were randomly assigned to an experimental or a control group. The experimental group received an intensive four-day CBI training program, modeled on Negueruela (2003), and the CL materials drew primarily on Tyler et al.'s (2011) analysis of the root and epistemic senses of modals. Meanwhile, the control group received 'rule-of-thumb' instruction. We administered a pretest, an immediate posttest, and a delayed posttest (3 weeks later), each of which included a sentence-level cloze test and a written verbalization test. The cloze test was analyzed for accuracy of performance and self-confidence rating. The verbalization data were coded for three dimensions (generality, abstractness, and systematicity) of conceptualization (Negueruela, 2003). In the cloze test, we observed significant accuracy and confidence improvements in the experimental group but not in the control group for the posttest and the delayed posttest. In addition, the verbalization test revealed significantly enhanced conceptual knowledge of the four modals in the CL group.

Papers



## Flipping Second Language Classrooms with Audio-visual Materials: Design, Production and Evaluation of Developing Audio-visual Materials for Cantonese Second Language Learners.

*Chi Leung CHAN, Kwun Hung CHANG, Ka Yee SHUM*

*Yale-China Chinese Language Centre*

In view of the multicultural background, and the varied learning style and pace of students, the need to have well-structured flipped classroom materials is a necessity in the 21st century. In second language teaching, audio-visual input is known to support various oral aspects (Hardison 2004, 2009, 2016; JunHong Zhao et al., 2013). Here, we will introduce the design, production, as well as evaluate the use of audio-visual materials developed for Cantonese second language learners.

**Design:**

The audio-visual materials designed for Cantonese learners are included in three modules. These are Oral Accuracy, Oral Fluency, and Grammar Points/Vocabulary Practice. In the Oral Accuracy module, a teacher demonstrates the correct shape of the mouth when speaking, and the pitch is shown in the form of voice graphs embedded in the online platform. In the Oral Fluency module, there is a consecutive series of timed questions asked by the teacher with given pictures, videos or context. The Grammar Points/Vocabulary Practice module serves to enhance the student's knowledge and provides drilling through mini-lectures or annotated PowerPoint slides.

**Production:**

We will introduce the procedures we use for preparing the materials as well as the production of the audio-visual materials. We will discuss activities such as script writing and video production.

**Evaluation:**

Initial evaluation results show that Oral Fluency module gave greater support to students with higher proficiency and motivation. Further evaluation on other modules would need to be carried out further.

### 1. Introduction:

There is great demand of learning Cantonese as a second language. There are usually 3 to 4 parallel sessions for CLCC1113, CLCC1123 and around 15 sessions for CLCC1703 every year in Fall term. To serve a large audience such as international undergraduate students, exchange students and mainland students, the need to have well-structured flipped classroom materials is compelling. Several common reasons of teaching in flipped style are: First, flipped materials free up more time for meaningful interaction in class. In second language classrooms, some basic grammar can be taught before class time. Some simple drillings can also be done in order to smoothen the group activities such as role-play, information-gap, and discussion in class. Second, students may use the learning materials that suit their needs most. In second language classrooms, some students may have difficulties in different areas. Some may find the rounded vowel difficult to pronounce, while some may find it difficult to distinguish the two Cantonese rising tones or level tones. Students may spend more time on the areas they need most. This paper is going to introduce the design, production, implementation as well as the evaluation of developing audio-visual materials for Cantonese second language learners as flipped classroom materials.

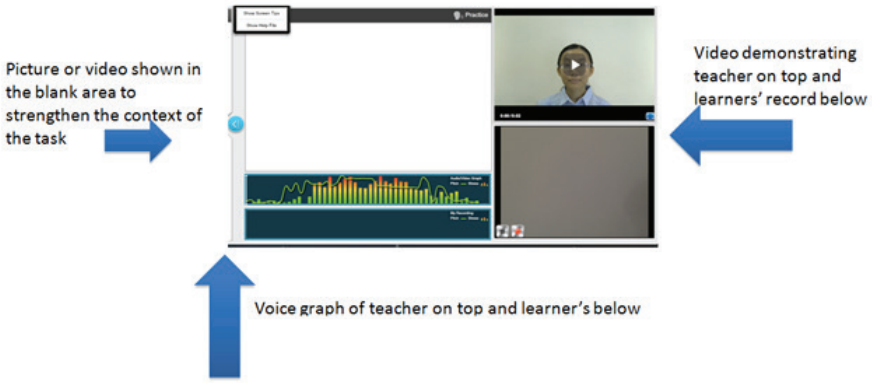
### 2. Design:

*2.1 Accuracy module:*

Learners can benefit from the following features in the accuracy module. First, they can listen to the pronunciation and watch teacher's video at the same time. Teacher-demonstration through media presents a standard model for student's input. Second, they can compare their voice graph with the teacher's voice graph on the screen. Especially in the context of learning Cantonese as a second language, pronouncing with the right tones is very important at the beginning stage. Computer-mediated feedback provides an extra input for learners to reflect

upon their grasp of the tones. Third, learners can record and upload as many times as they want in order to achieve the model pronunciation. One of the challenges in face-to-face language teaching with a group of students is that teacher can only give a limited time for an individual student. With computer-mediated training, students can

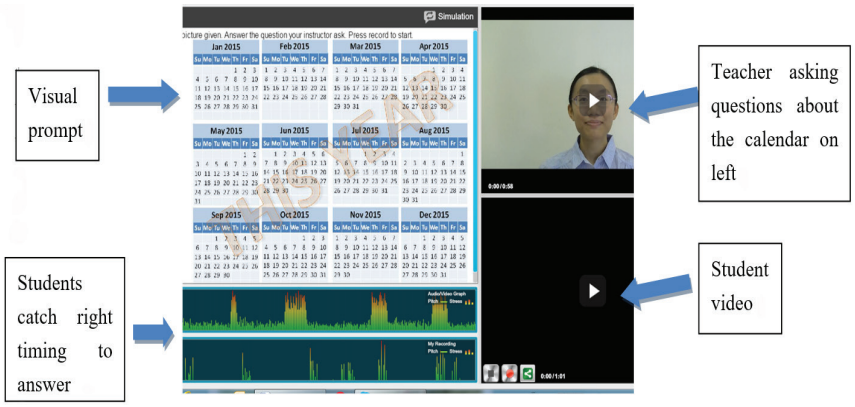
spend time on the areas that suit them most. The picture below explains how the computer-mediated interface works:




*2.2 Fluency module:*

Targeting to equip learners with better fluency in conversation, this module presents students with a picture and consecutive questions called simulation exercise. This is a somewhat quasi authentic task because our students are actually looking at the face of teacher in front of the computer monitor and simulating a real conversation with the person on the screen. The task allows multiple attempts even after the lab sessions, students may still try with their own laptops, pads or mobile phone.

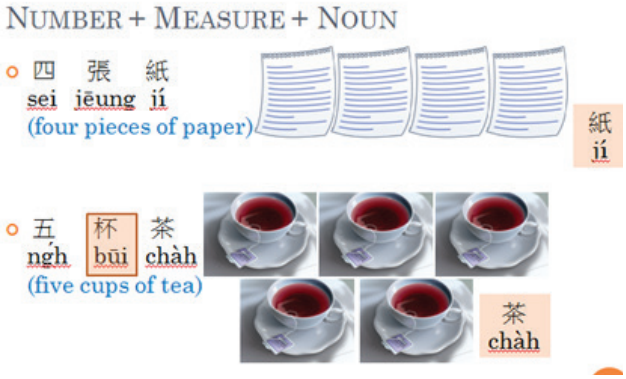
The pre-recorded teacher video will ask several questions based on the picture given. Students have to respond within the given time interval. The picture below illustrates how the simulation exercise is carried out.




Based on the picture, the first question that teacher asks in Cantonese is, "What year is this year, two zero one and..?" There are around 7 to 8 seconds for the learners to answer this question. With time given, they need to comprehend the input, look at the visual prompt and give an appropriate response. After that, the teacher asks the second question, "What about last year?" then another 7 to 8 seconds are given to answer the question. There are altogether 5 questions before the whole task is completed. After answering all the questions, students' responses would then be saved. Same as the accuracy module, the student can upload as many times as possible and the most updated file will overwrite the previous one. This module aims at training student's fluency in the sense of equipping students with higher awareness with of their own speech in conversation, especially fluency. In classroom teaching or oral proficiency interview test, disfluency in conversation may arise from pronunciation self-repair, vocabulary self-repair, unnatural pause, frequent request of clarification, etc. The evaluation section will present initial results showing how this module may help students learn.

*2.3 Grammar points/Vocabulary module:*

In this module, students would be provided with annotated powerpoint slides either explaining how the sentence structure of Cantonese works or some repetitive drills. The following picture is an excerpt in the video showing the Cantonese sentence structure 'Number+Measure word+Noun':




Each video lasts around 3-10 minutes. Students are to watch the videos before class. Similar to other flipped videos, the rationale is that students may listen to it according to their own learning pace. Apart from videos, we also have preparation assignments are on-line exercises that have already been posted on the course Blackboard, the LMS that is currently available to our students. The next stage is post-video quiz. Post-video quizzes will be conducted in class in order to assess their preparation before coming to the class. We aim at having more time for interactive activities in class if the videos and on-line exercises are provided.

**3. Production:**

*3.1 Design the outline of the audio-visual materials*

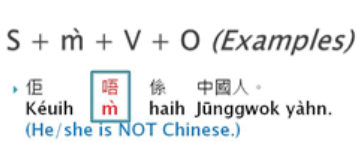
The first step of creating audio-visual materials for Cantonese second language learners is to design the outline.

For example, in grammar points/voc module, we may need to think about how to illustrate each grammar point. Usually, it is composed of three parts: (a) Simple Explanation of Grammar Points, (b) Illustration of Examples, and (c) Learners' Practice.

*3.2 Prepare the PowerPoint slides*

For each grammar point, we prepare a number of examples for illustration in an organized manner. For the first few lessons, we highlight the words one by one in each slide, as shown in the following:


Slide 1: The first word "Kéuih" is highlighted.

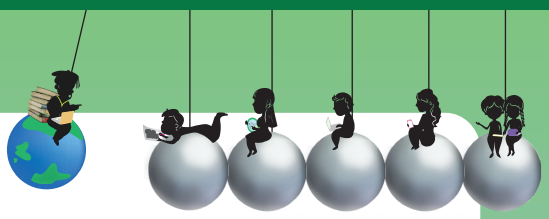



Slide 2: The second word "m̀" is highlighted.


Slide 3: The third word "haih" is highlighted.


Slide 4: The last word "Jūnggwok yàhn" is highlighted.

In such ways, the learners will find it easier to follow when they listen to each example sentence.



*3.3 Write the voice-over scripts for the slides*

In the scripts, we write down what we say in the teaching video word by word. We also write down how many seconds the pauses take between each instruction, each sentence and each question. In such ways, the presenters know what they need to say, when and how long they need to pause during video-shooting. We put all the scripts in a word file, and we send the word file of scripts together with the PowerPoint slides to ELITE@ CLEAR production crew one to two days before video-shooting.

*3.4 Use of copyrighted images*

The use of visual aids is very common when preparing the PowerPoint slides for illustrating grammar points and designing learners' practice. In order to avoid copyright infringement, we make use of only free copyrighted images in our PowerPoint slides. The websites which provide such images are listed as follows:

- http://allthefreestock.com/
- https://pixabay.com/
- https://openclipart.org/

*3.5 Video-shooting in Chroma-key Studio*

After finishing the PowerPoint slides and scripts, we move on to the procedure of video-shooting. We do the video-shooting in Chroma-key Studio, in which there is a Chroma-key background, an HD camcorder, lighting control, and a teleprompter. Firstly, the production crew sets up the camcorder, lighting and the teleprompter in the studio. They adjust the font size of scripts and also playback speed of scripts in the teleprompter, so that the presenters find it easier to follow when reading out the scripts during video-shooting. Then, the presenters stand in the middle of the chroma-key background and say what the teleprompter displays, while the production crew takes charge of controlling the camcorder, playing the teleprompter and clicking the PowerPoint slides. After finishing the video-shooting, we watch the playback of the video together and check whether anything has to be amended and whether video-shooting needs to be done again. Both mp4 and mp3 files were saved for post-editing.

**4. Evaluation**

As an initial evaluation, we focused on evaluating one module (fluency) first. We decided to employ a qualitative inquiry (observation) to answer questions concerning the learning process. We observed four lab sessions of two parallel CLCC1123 classes in fall term of 2016-17. Each lab session is attended by around 20 students. The sessions lasted around 30 minutes each. The observers are the authors (except Shum) of this paper.

Observation focus is set for the observers beforehand as follows:

i. Do students respond timely in simulation exercise?

ii. What do students do if they cannot respond timely?

iii. How many times do students try before uploading the final video?

iv. What are the changes in students' production when doing the simulation in different trials?

v. What are student's questions or comments when doing simulation exercises?

vi. Are there any other relevant findings?

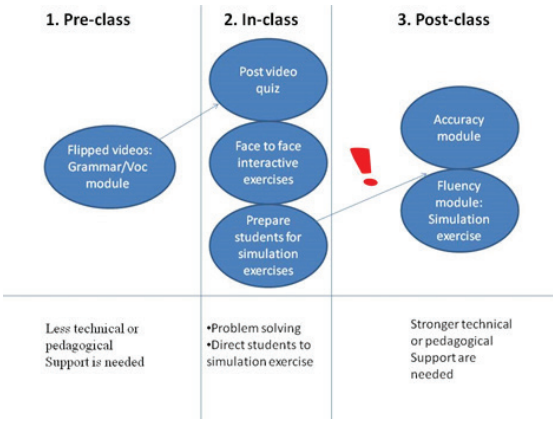
Finding and implication is summarized below:

*4.1 Finding:*

One of the students showed obvious improvement in the second trial compared to first trial when doing the simulation exercises. For example, in the first trial, when the student was asked 'What time is it', the student gave a grammatically incorrect time expression. When asked 'What are they doing', the student responded '而家 學校'('now' 'at' 'school'), which was incomplete or not to the point of the question. When asked 'How many months are there in one year', the student said十二個月', which is a correct but incomplete sentence. When asked 'How many classes do they attend in a day', the student replied '四個堂', which is grammatically incorrect by inserting the unnecessary measure word for this noun. Although the responses of the first trial were not satisfactory, in the second trial the student improved quite a lot in different aspects. When asked 'What time is it', the student improved by giving a grammatically correct response. When asked 'What are they doing', the student responded '而家 學校讀書'('now' 'at' 'school' 'study' = Now studying in the school), which was complete and to the point of the question now. When asked 'How many months are there in one year', the student gave more details by saying '一年有十二個月' ('one year' 'has' 'twelve' 'months' = There are twelve months in one year) . Unfortunately when asked 'How many classes do they attend in a day', the student still replied '四個堂'. To sum, the simulation exercise provided students with chances to give better output. Nevertheless, the simulation exercises were quite challenging for some students with lower proficiency. If students were not able to respond timely for the first question, they remained silent for the rest of the questions, either because they were not able to comprehend the input, or not able to respond timely. Students who seem to have higher motivation may benefit because it is observed that only one student did pause the teacher video when he did not catch the question timely. During the pause, the student planned for a better answer and started the simulation exercise again. The student even stayed 45 minutes in the lab session to try the simulation exercise. Another weakness of simulation exercise seems to be the lack of feedback. If students were not aware of their own mistakes, they were not able to correct in further trials to come such as the unnecessary measure word example above.

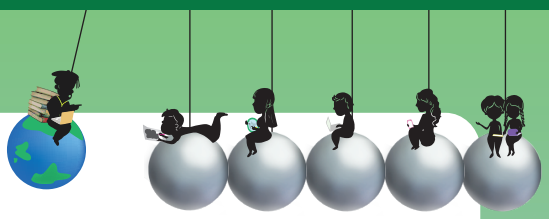
*4.2 Implication:*

It is observed that students asked technical questions while navigating the simulation exercises. Besides, students with weaker oral proficiency failed to practise in the fluency module. These cases implied some preparations need to be done during In-class time.




Important link between In-class training and post-class training shown with exclamation mark

In order to enhance the learning in post-class simulation exercise, first, teachers should equip students with technical competence to navigate or control the interface. Technical breakdowns due to unfamiliarity of the exercise interface may discourage the students from using the media to have further practice at home. Second, teachers may project the slides used in the simulation exercises and ask students the questions by themselves. In this way, students may be more prepared for the questions to come and problems can be solved immediately. Since class time is limited for the teacher to practise the questions with every student, there would be a more natural transition that students should keep trying after class with computer-mediated media.



*5.Summary*

This paper introduced the design, production and evaluation of developing audio-visual materials for Cantonese second language learners as flipped classroom materials, where teaching is flipped to pre-class video and oral training is extended to post-class exercises. We started off by discussing the rationale behind the design, followed by showcasing the production process for teachers who may want to produce similar materials as a reference, ended with initial evaluation results showing that students with higher oral proficiency may benefit more from the simulation exercise, whereas students with lower oral proficiency need to be given more guidance and support during in-class session, either technically or pedagogically in order to have a better post-class e-learning experience.

Several technical issues need to be solved such as picture clarity, unbalanced time interval during the simulation exercise, navigation, etc. Besides, further evaluation needs to be carried out. First, the observation in lab session can be triangulated with interviews, questionnaires, etc. Second, in-class observation can be conducted to see if the interaction between student and teacher is enhanced with flipped video. Third, quantitative inquiry may also seem desirable to identify predictors of high achievements from learning analytics such as time spent in various modules, demographics such as language background, gender, etc. With the materials created and experiences gained so far, it is believed the development and evaluation can go further so as to enhance teaching and learning effectiveness.

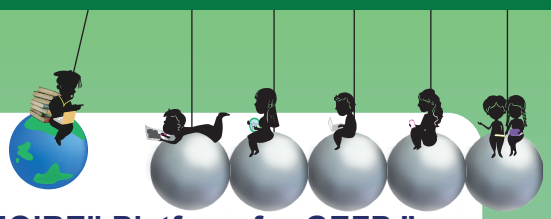
**Reference:**

Hardison, M.D (2004) Generalization of computer-assisted prosody training: Quantitative and qualitative findings. *Language Learning & Technology, 8,* 34-52

Hardison (2009) Acquisition of L2 Japanese geminates: Training with waveform displays. With M. Motohashi Saigo. *Language Learning & Technology, 13*, 29-47

Hardison, T. Okuno (2016) Perception-production link in L2 Japanese vowel duration: Training with technology. *Language Learning & Technology, 20,* 61-80.

J.H. Zhao, H. Yuan, W.K. Leung, H. Meng, J. Liu and S.H. Xia (2013) "Audiovisual synthesis of exaggerated speech for corrective feedback in computer-assisted pronunciation training", *Proc. ICASSP,* pp.8218 -8222



## "Use of Micro-modules in a Pilot Development of the "MOIRE" Platform for GEFP "

*IP Ka Wai Kevin, PANG Kam Moon, WONG Wing Hung*

*Office of University General Education, The Chinese University of Hong Kong*

The "More In-depth Reading" (MOIRE) platform for the General Education Foundation Programme (GEFP) includes various interactive features, including micro-modules and online discussion questions. As a pilot project, two micro-modules have been developed, which are, respectively, based on Silent Spring written by Rachel Carson and Republic by Plato. The first micro-module introduces features of the nature of science, such as scientific credibility, highlighted in Silent Spring and relates them to the public's understanding of scientific truth. The second micro-module compares a democratic community with a meritocratic one in terms of the importance of values, truth, and public opinions when a public policy is implemented. We shall demonstrate how these micro-modules are used for working in a flipped-classroom mode so as to better equip students for the discussions held in student-centered seminars.

The common core programme, General Education Foundation Programme (GEFP), comprises of two seminar-based, core-text courses, namely "In Dialogue with Nature" (UGFN1000) and "In Dialogue with Humanity" (UGFH1000), which are designed to invite students to explore the world of science and knowledge and, in addition, reflect on ideal society and good life. In each course, students are required to read over 10 sets of excerpts from classic texts such as the Bible and Newton's Principia, to discuss and to reflect on timeless human concerns and timely controversial issues.

Upon reflection on our teaching experience in the past 4 years after the full launch of GEFP in 2012, we can identify three needs with increasing urgency from three parties:

(a) Students find some excerpts or other parts of the texts or intricate relationship among certain excerpts which are worthy of a deeper and broader discussion over; on the other hand, students might find difficulty to get deeper insight into a discussion if they are not given any guidance.

(b) Teachers manage to go deeper into an excerpt (e.g., from the Principia) related to their expertise (e.g., physics) and are ready to contribute to the design and implementation of relevant teaching materials, which teachers with other expertise could also benefit from.

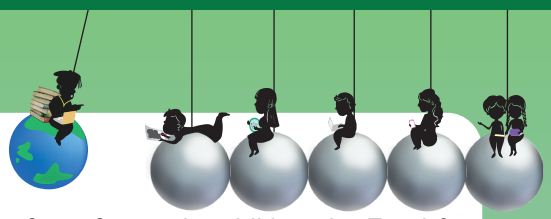
(c) GEFP has been seeking for ways to help students make connections between the two foundation courses, aiming at, but not limited to, developing students' ability to see a problem in both scientific and humanistic perspectives.

All the needs converge to the same conclusion that extension should be made to a few excerpts. That emerges an idea that identifying compulsory "core" excerpts and developing optional "extension" to the excerpts could add to the teacher's flexibility and give them full play to discussions in tutorials regardless of individual teacher's expertise.

The "More In-depth Reading" (MOIRE) platform is therefore developed for the GEFP which includes the intellectual content of extensions, serving as teaching and learning materials for various interactive features, such as short video clips and online study and discussion questions. One application of features is to work in the flipped-class mode to get students better prepared for in depth discussion and reflection on the issues concerned and plus for writing essay-type assignments. In addition, the topics of the interactive features might be across various themes in both GEFP courses; hence MOIRE inspires connections between the 2 foundation courses and encourages teachers to develop other features of a similar kind.

In this pilot project, two texts have been chosen, namely Rachel Carson's Silent Spring and Plato's Republic.

Carson advocated in Silent Spring limitations on the uses of synthetic pesticides, because the pesticides can cause damage to natural environment and are, in addition, hazardous to pests, as well as humans. Sarcastically, some contemporary scholars reckoned that Carson's arguments and evidences were refutable, for example, it was pointed out in Chemical Week that even though potential dangers of misusing chemical pesticides might be a real threat, the Agriculture Department of the United States had regulated pesticides through introducing



an effective labeling system, requiring that labels gave accurate information for safe use; in addition, the Food & Drug Administration of the United States inspected interstate shipments of food to see that residues of pesticides did not exceed specified tolerance.[1] Thus, this episode not only touches upon several features of the nature of science such as scientific credibility, science and values, but is also related to the public's understanding of scientific truth and its role in public policy. On the other hand, Republic refers to the superiority of philosophers whose supremacy of reason and knowledge deserves an absolute authority to claim what ought to be done. The commonality of the two excerpts is found in the idea of democracy and meritocracy as revealed in social policies, and it engages students in comparing the views of the two political ideas on the establishment and implementation of a policy, in which painstaking science is involved. Thus, the discussions cultivate sort of dialogues between science and humanity. One point to add is that although Republic is a core text in UGFN1000, UGFH1000 colleagues will discuss it from a humanistic point of view.

Two micro-modules have been developed and are based on Rachel Carson's Silent Spring and Plato's Republic. The first micro-module introduces features of nature of science highlighted in Silent Spring and how the public's understanding of scientific truth is established, and the second one compares a democratic community with a meritocratic one in terms of the importance of values, truth, and public opinions when a public policy is implemented. The micro-modules to be constructed will be accessible on desktop computers and on mobile devices as well.

Two teaching weeks (from Friday to the Thursday after the next) are allocated as shown in the following teaching schedule:

| | |
|---|---|
| *Week A:* | *A 1-hour lecture (Friday) on the "core" excerpt is followed by A 2-hour tutorial (weekday) on the excerpt.* |
| *In-between week:* | *Study the micro-module material about the extension.* |
| *Week B:* | *A 1-hour lecture (Friday) is for clarification of the content of the micro-module and preliminary discussion, and then a 2-hour tutorial (weekday) discussion on the extension is held.* |

For UGFN1000 classes:

*Week A:*

The lecture first presents the historical background of Rachel Carson and Silent Spring, aiming not to provide an exhaustive analytical history or biography, but to present information that an ordinary citizen might know and perceive about Carson and synthetic pesticides in 1962. Then, the lecture outlines the selected excerpt, Chapter 6 Earth's Green Mantle[2], from Silent Spring, including the web of life, toxicity and carcinogenicity of 2,4-Dichlorophenoxyacetic acid (2,4-D) and related compounds, and the success of biological control.

Students are required to read the selected excerpt before attending student-centered seminar. The discussion topics in the seminar include, but not limited to, Carson's attitude towards the control of nature, commentary on the effects of herbicides on non-target species.

*In-between week:*

Students are required to study the micro-module, "Manifestation of scientific truth, values, and public opinions in Carson's Silent Spring" and finish study questions.[3] Features of the nature of science are highlighted such as scientific credibility. For instance, Dichlorodiphenyltrichloroethane (DDT) was discovered as an insecticide by the Swiss chemist Paul Hermann Müller in 1939 and used in the World War II to control malaria and typhus. This great success awarded Müller the Nobel Prize in Physiology or Medicine "for his discovery of the high efficiency of

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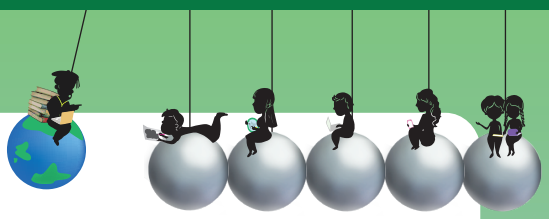
[1] "Bracing for Broadside" in Chemical Week (October 6, 1962), p.23; Website: http://shipseducation.net/pesticides/library/CW10-6-62.pdf (Retrieved November 14, 2016).

[2] Rachel Carson, Silent Spring (New York: Mariner Books, 2002), pp.63-83.

[3] Youtube, "Manifestation of scientific truth, values, and public opinions in Carson's Silent Spring"; Website: https://www.youtube.com/watch?v=KM5fYLEL4jc (Retrieved November 14, 2016).



DDT as a contact poison against several arthropods" in 1948.[4] Besides, new fertilizers and pesticides were widely available in 1950s and allowed better crop yields. It is not difficult to imagine that the public was optimistic about the uses of synthetic chemicals. On the other hand, opposite views about the uses were presented by some official organizations, Food and Drug Administration reported in 1950 “extremely likely the potential hazard of DDT has been underestimated.”[5] Scientific credibility emerges here: Students might ponder on how the public comes to have scientific knowledge and how to distinguish scientific truth and inauthentic science.

*Week B:*

This lecture is to clarify the micro-module materials and answer student questions on the material and to allow students to discuss their personal responses to the core text, i.e., Chapter 6 Earth’s Green Mantle, such as whether Carson’s presentation is balanced and complete and whether Carson’s emotive rhetoric and style affects public’s interpretation of her claims. The second part of the lecture is to introduce some reading materials which were written in 1950s to 1960s. The authors of the reading materials range from ecologists and economic entomologists to representatives of the chemical pesticide industry and the U.S. Secretary of Agriculture and thus reflect the spectrum of stakeholder perspectives in 1963. The tutorial that follows is an open-ended discussion for exploring the nature of science by posing reflective questions to students regarding, for examples, the distinction between causation and correlation, the cultural and economic contexts of science. Another, a more engaging option is to guide students through a role-play simulation. The scenario is based on US President Kennedy’s Science Advisory Committee in 1963. Students situate themselves as committee members and review and recommend any appropriate policy. This role-play simulation and the evaluation will be presented elsewhere. The design of the simulation prototype was done by Allchin.[6]

<u>For UGFH1000 classes:</u>

*Week A:*

Students are required to read an excerpt from Waiting for the Dawn (《明夷待訪錄》). In this text, Confucian author, Huang Zongxi proposes a meritocratic form of government in which the ruling elites vow to serve the interests of the common people.[7] The fundamental principle defended by Huang is that the sole end of legitimate exercise of political power is the promotion of common good (gongli). However, what counts as the common good, and what is the most effective way of promoting the common good should be decided by a small number of governing elites.

*In-between weeks:*

Students are required to study the micro-module, “Plato’s Analogy of the Cave: Values, Truth, and Public Opinions” which presents an interpretation of the Allegory of the Cave in Plato’s Republic.[8] The micro-module highlights the competing claims to authority held by the philosopher (and anyone possessing true knowledge) and the democratic republic. For Plato, philosopher has a claim to political authority in virtue of his/her knowledge about what ought to be done and how the state should exercise its powers. However, the majority of people also have a claim to political authority in virtue of their being subjects of the law. There is an apparent conflict between these two kinds of claim to political authority. Students are encouraged to evaluate the respective case for both sides.

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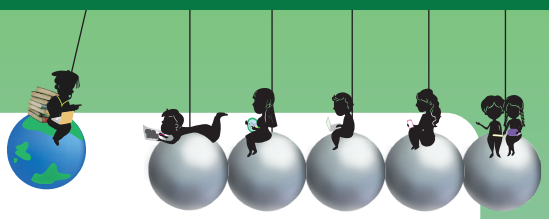
[4] Wikipedia, “DDT”; Website: https://en.wikipedia.org/wiki/DDT (Retrieved 20 October 2016, at 15:39).

[5] Joel B. Hagen, Douglas Allchin, Fred Singer, Doing Biology (Benjamin Cummings, 1997), pp.185-195.

[6] Douglas Allchin, Teaching the Nature of Science: Perspectives and Resources (Minneapolis: SHiPS Education Press, 2013), pp.225-240.

[7] Huang Zongxi（黃宗羲，1610 - 1695）, Chinese political theorist during the latter part of the Ming dynasty into the early part the Qing. Huang finished writing Waiting for the Dawn in 1662.

[8] Youtube, “Plato’s Analogy of the Cave: Values, Truth, and Public Opinions”; Website: https://www.youtube.com/watch?v=CuUVu1oOyuQ (Retrieved November 14, 2016).



*Week B:*

Students are to discuss Donald Trump's stance on climate change. Sources close to the campaign said that Trump had selected one of the best-known climate skeptics, Myron Ebell,[9] to lead the United States Environmental Protection Agency transition team.[10] However, there is almost unanimous consensus among the scientific community that climate change is a serious threat to humanity. Although Trump was elected through the democratic process, does he thereby have the authority to appoint someone like Ebell? Furthermore, relevant topics of discussion are revealed in the previous micro-module. Silent Spring has aroused public awareness of the indiscriminate use of synthetic pesticide in 1960s, leading to a large public outcry, plus exerting pressure on the U.S. government to direct his Science Advisory Committee to investigate the claims and make recommendations. It results in a ban on DDT's agricultural use in 1972 and limitations on the use of some synthetic chemicals in the States. On the other hand, if Carson were in a meritocratic community such as the one which Huang Zongxi proposed, what strategy should Carson adopt so as to achieve her very ultimate purpose?

Two micro-modules have been developed in the MOIRE platform for the GEFP and are based on Rachel Carson's Silent Spring and Plato's Republic in which, respectively, features of nature of science in Silent Spring were highlighted and a comparison between a democratic community and a meritocratic one in terms of the importance of values, truth, and public opinions were made. In this short paper, we demonstrated how to use the micro-modules for the flipped-class mode to get students better prepared for discussion in student-centered seminars, as well as essay-type assignments. This pilot project also encourages students to make connections between the two foundation courses, aiming at developing students' ability to see a problem in both scientific and humanistic perspectives. In addition, it has been found that university students commonly fail to identify stronger or weaker responses to an open-ended problem, and they always have a tendency to argue that the reading with which they agree is the one having stronger support.[11] As a part of this exercise, students are required to read some readings which take different positions and to identify which reading provides stronger support. Thus, this exercise can help students learn to acknowledge the stronger argument no matter whether its position the students would agree. Surveys and focus-group studies to evaluate the effectiveness of this pilot project will be conducted after 2016-17 Term 1 and be reported elsewhere.

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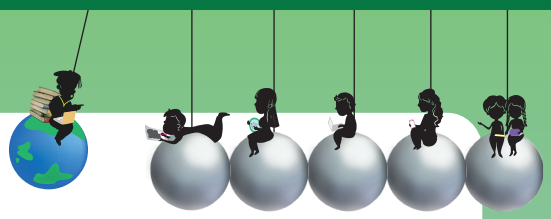
[9] Myron Ebell, a central role in promoting climate change denial. See also Wikipedia, "Myron Ebell"; Webste: https://en.wikipedia.org/wiki/Myron_Ebell (Retrieved November 13, 2016).

[10] "Trump Picks Top Climate Skeptic to Lead EPA Transition: Choosing Myron Ebell means Trump plans to drastically reshape climate policies" Scientific American (September 26, 2016); Website: https://www.scientificamerican.com/article/trump-picks-top-climate-skeptic-to-lead-epa-transition/?WT.mc_id=SA_FB_ENGYSUS_OSNP (Retrieved November 11, 2016).

[11] Susan K. Wolcott, College Faculty Handbook:Steps for Better Thinking (Washington: WolcottLynch Associates Bellevue, 2006) ); Website: http://www.utc.edu/think-achieve/pdfs/wolcotthandbook.pdf (Retrieve November 14, 2016).



## Use of a Collaborative Approach to Improve Teaching And Learning Yielding Sustainable and Translational Outcomes (CATALYST)

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**Background:**

Currently, collaborative teaching is usually limited to teamwork within the same discipline. The CATALYST project is designed to develop an inter-professional translational e-learning platform in health sciences education.

**Methodology:**

CATALYST consists of an online electronic learning platform and a series of practical outreach sessions organized by CU CHAMPION. Learning materials about geriatric care and medication safety were prepared by teachers from six departments, namely: Medicine, Pharmacy; Nursing, Chinese Medicine; Social Work; and Biomedical Sciences. The community outreach service program provides an opportunity for participants to improve their understanding of geriatric care and their skills at communicating with elderly people. Participants were invited to conduct a self-evaluation survey both before their enrolment to the platform and at the end of the outreach program.

**Results:**

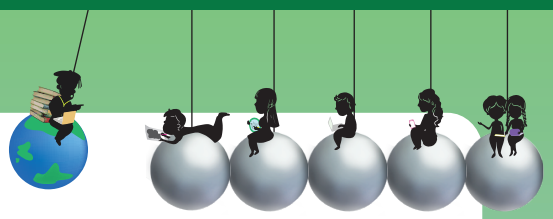
Of the 210 students who enrolled in the CATALYST project: 71 (33.8%) of them obtained platinum medal certificates; 60 (28.6%) obtained gold medal certificates; 24 (11.4%) received silver medal certificates; 42 (20%) were awarded bronze medal certificates; and remaining 13 (6.2%) completed without medal certificates. The pre- and post-CATALYST evaluation surveys were completed by 109 and 108 students, respectively. A comparison of the two surveys showed that there was a 17% increase in the knowledge of students regarding medication safety, a 4% increase in their medication safety awareness, a 27% increase in their knowledge about atrial fibrillation, a 9% increase in their understanding of elders' needs; and an 11% increase in their communication skills with the elderly. More than 90% of the students agreed that both the outreach program and CATALYST met their expectations.

**Conclusion:**

By promoting inter-professional collaborations, the CATALYST project had facilitated cohesive teaching and learning, with an ultimate goal of enhancing community healthcare.

**Keywords:**

CU CATALYST; e-learning; CU CHAMPION; geriatric care; inter-professional education



**Introduction**

Aging is unavoidable for everyone. The rapidly aging population demands a system that promotes better health-care by decreasing morbidity and mortality in our community. It is our responsibility to train our students who will involve in care for the elders. Our students will impact of the care of old people in our community through various disciplines. Medical and life sciences involve the understanding of basic science, social sciences and clinical knowledge application. All components are equally important. However, students still have difficulty in understanding the application of knowledge to address the needs of the public. Although most of the healthcare professional schools use integrated teaching curriculum and problem-based/case-based learning, students from different disciplines (Medicine, Pharmacy, Nursing, Chinese Medicine, Bio-medical Science, and Social work,) are taught in separate curriculum and teaching environments. They rarely have an opportunity to study together with other students who can be their future team members. Nevertheless, this is exactly what happening in the medical faculty. Future doctors, nurses, pharmacists, and Chinese Medicine practitioners are being taught separately. In addition, students from other faculties (including social sciences) may have classes addressing certain medical-related issues and topics such as psychological counseling to chronic patients.

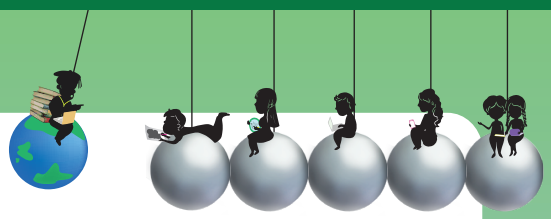
Currently, collaborative teaching is usually limited to collaborations within the same discipline and rarely involve multiple disciplines. The CATALYST project is designed to develop the inter-professional translational e-learning platform in health sciences education. This platform will utilize micro modules, flipped classroom and teaching videos to simulate the pre-selected clinical scenarios. The current project is applicable in training future medical professionals and social workers. In addition, flipped classroom teaching and community outreach are vital in the CATALYST project. Students participants will have the opportunity to work with students of other disciplines in the community outreach programs with the same objective to improve the geriatric care in Hong Kong.

In addition, this project aimed to enhance teachers' interest in collaborative teaching in health sciences education; enable teachers to use electronic platforms for collaborative teaching; promote the use of flipped classroom; promote inter-professional learning; and enhance translational teaching.

**Methodology**

CATALYST consisted of an online electronic learning platform and a practical outreach sessions organised by CU CHAMPION. The platform was developed in March 2016, and launched on Blackboard (an online learning system in CUHK) in June 2016. The 8 weeks community outreach service program was held in July and August 2016. The service aimed at raising awareness of dementia, nutrition and dietary balance, medication safety, and atrial fibrillation among elderly population in Hong Kong.

A series of learning materials about geriatric care and medication safety were prepared by teachers from six departments, namely: Medicine, Pharmacy; Nursing, Chinese Medicine; Biomedical Sciences; and Social Work. The topics covered are summarised in Table 1. In addition to the informative resources, core lecture elements were shared on the platform by using micro modules and flipped classroom. Video case scenarios were also provided to facilitate the delivery of lecture materials. Students were instructed to complete the learning materials and quizzes on the platform to prepare for the community outreach service.



| Disciplines | Micro Module Topics |
|---|---|
| Medical Sciences | Common chronic illness in elderly and mental health of elderly |
| Pharmacy | Drug-related problems and medication safety in elderly<br><br>Pharmacological changes in elderly |
| Nursing | Nutritional issues, home safety, wound care of elderly |
| Chinese Medicine | Common Traditional Chinese Medicines (TCM) used in elderly<br><br>TCM to be avoided in elderly |
| Biomedical Sciences | Pathophysiological differences in elderly |
| Social Work | Psychological and human behavioral issues in elderly<br><br>Things to consider for elderly community out-reach |
| Table 1. Topics covered by different disciplines | |

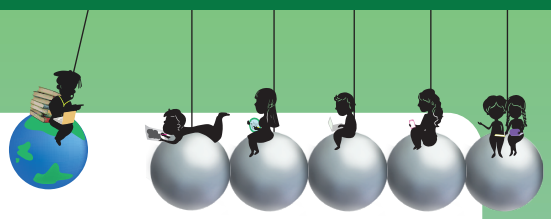
In short, CU CHAMPION carried out 32 outreach sessions in July and August, 2016, and reached out to 2001 elderly subjects. The community outreach service program provided an opportunity for participants to improve their understandings in geriatric care and communication skills with elderly people. In addition, participants would be able to conduct different types of health check duties relevant to their future professions. The duties included conducting a survey with elderly participants, which covered topics such as demographic, health background, dementia screening, and dietary hobbits. Other duties included: drug profile acquisition; glucose monitoring; blood pressure monitoring; electrocardiograph monitoring; body mass index (BMI) measurement and, service summary and health education by CUHK students. Registered pharmacists would provide drug consultation to elderly participants who had medication concerns and enquiries.

In order to encourage and motivate students to participate, four types of Certificate of Appreciation were designed for students who achieved certain level of participation on both e-learning platform and outreach programmes, namely Platinum (completed 90% or above); Gold (70% - 89%); Silver (50% - 69%) and Bronze (30% - 49%). Participants were invited to conduct a self evaluation survey before their enrolment on the platform and by the end of the outreach programme. The survey is summarised in Appendix 1.

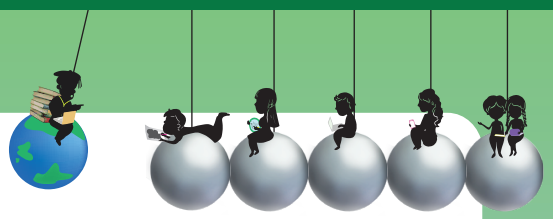
All continuous data were described by mean ± standard deviation while discrete data were reported in frequency and percentage.

**Results**

210 students were enrolled in the project, in which 71 (33.3%) of them obtained Platinum Certificate, 60 (28.6%) for Gold, 24 (11.4%) for Silver and 42 (20%) for Bronze, and 13 (6.2%) students completed without medal certificate. 109 students participated in the pre-CATALYST evaluation survey and 108 joined the post-CATALYST evaluation survey. The results are summarized in Table 2.

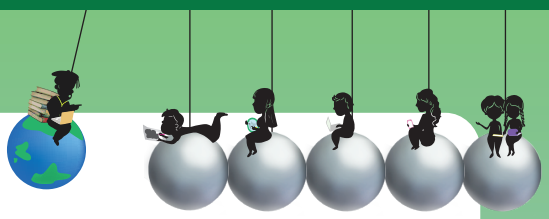


| | Pre-CATALYST | Post-CATALYST | Changes |
|---|---|---|---|
| Understanding of Medication Safety<br><br>1 (lowest) – 5 (highest) | 3.47 ± 0.68 | 4.05 ± 0.54 | +0.58 (+17%) |
| Attitude and awareness toward Medication Safety<br><br>1 (lowest) – 5 (highest) | 3.96 ± 0.68 | 4.12 ± 0.54 | +0.16 (+4%) |
| Understanding of Atrial Fibrillation<br><br>1 (lowest) – 5 (highest) | 3.00 ± 1.05 | 3.80 ± 0.66 | +0.80 (+27%) |
| Attitude and awareness toward Atrial Fibrillation<br><br>1 (lowest) – 5 (highest) | 3.32 ± 0.98 | 3.92 ± 0.73 | +0.60 (+18%) |
| Attitude towards multidisciplinary teamwork<br><br>1 (lowest) – 5 (highest) | 4.23 ± 0.62 | 4.17 ± 0.72 | -0.06 (-1%) |
| Communication Skill with elderly<br><br>1 (lowest) – 5 (highest) | 3.65 ± 0.69 | 4.05 ± 0.60 | +0.40 (+11%) |
| Communication Skill in general<br><br>1 (lowest) – 5 (highest)<br><br>3.78 ± 0.63 | | 4.02 ± 0.53 | +0.24 (+6%) |
| The objectives of outreach<br><br>1 (Strongly disagree) – 5 (Strongly agree) | were clearly stated:<br><br>4.05 ± 0.48 | were fulfilled:<br><br>4.10 ± 0.53 | +0.05 (+1%) |
| Improvement in geriatric care | 4.04 ± 0.60<br><br>(Expectation)<br><br>1 (lowest) – 5 (highest) | 4.09 ± 0.54<br><br>(Achieved)<br><br>1 (Strongly disagree) – 5 (Strongly agree) | +0.05 (+1%) |
| Understanding of elderly needs<br><br>1 (lowest) – 5 (highest) | 3.78 ± 0.70 | 4.13 ± 0.58 | +0.35 (+9%) |
| I am proud to be a CU CHAMPION member.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | 4.06 ± 0.63 | 4.20 ± 0.56 | +0.14 (+3%) |



| | | | |
|---|---|---|---|
| The objectives of the e-learning platform were clearly stated.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | 3.69 ± 0.73 | 4.05 ± 0.50 | +0.36 (+10%) |
| The e-learning platform is useful for understanding geriatric care in other perspectives.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | 3.63 ± 0.68 | 4.05 ± 0.60 | +0.42 (+12%) |
| The provided materials are very useful.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | 3.64 ± 0.66 | 4.04 ± 0.61 | +0.40 (+11%) |
| Hours Spent on e-learning platform:<br><br>Less than 1 hour<br><br>1 – 2 hours<br><br>2 – 5 hours<br><br>More than 5 hours | <br><br>45 (44%)<br><br>48 (47%)<br><br>8 (8%)<br><br>1 (1%) | <br><br>69 (64%)<br><br>35 (32%)<br><br>4 (4%)<br><br>0 (0%) | <br><br>+20%<br><br>-15%<br><br>-4%<br><br>-1% |
| Valuable to my future practice<br><br>1 (Strongly disagree) – 5 (Strongly agree) | N/A | 4.27 ± 0.56 | N/A |
| Roles and responsibilities within the team were well defined in outreach sessions.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | N/A | 4.11 ± 0.57 | N/A |
| Did the Outreach meet your expectation? | N/A | Yes: 100 (93%) | N/A |
| Did CU CATALYST 2016 meet your expectation? | N/A | Yes: 103 (96%) | N/A |
| Table 2. Results of pre- and post-CATALYST evaluation | | | |

By comparing the pre- and post- project evaluation survey, there is a 17% increase in understanding medication safety, 4% increase medication safety awareness, 27% increase in atrial fibrillation knowledge, 9% increase in understanding elders' needs and 11% increase in communication skills with elderly. More than 90% of students agree that both outreach and CATALYST met their expectation.



**Discussion**

The evaluation result proved that CATALYST could strengthen students' knowledge in a wide variety. Geriatric care was the first focus because of the aging population in Hong Kong. Many elderly patients have multiple chronic diseases, drug-related and nutritional problems, home-alone with multiple psychosocial problems that require our attention. Given the complexity of the problems encountered in elderly, it is believed that the model of CATALYST could be applied to different aspects as well.

CATALYST was the first inter-professional curriculum for translational teaching and learning in medical, and social sciences across UGC-funded institutions. It created a good learning experience to improve students' understanding of geriatric care in different perspectives. This new teaching platform incorporated both basic and fundamental knowledge subjects in medical sciences, social sciences and clinical therapeutic courses in medicine, nursing, pharmacy, and social sciences curriculum. It focused on how these subjects translate into clinical application and professional training.

The outreach service program also played an important role to make this project successful. Student volunteers had to access the learning materials on the platform to prepare for the outreach service. They would need to study topics such as communication skills and the background of specific disease (atrial fibrillation, dementia, and diabetes) in order to provide health education to the service participants. In short, student applied the knowledge they learned from the platform during the outreach service.

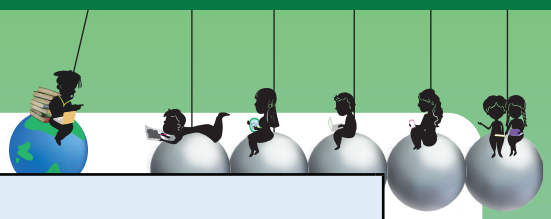
In addition to the university students, we also applied this project experience on another new pilot program called Comprehensive Health Advocacy Mentorship Program (CHAMP), which aims at addressing the healthcare issues of elderly people in our society, and stimulate adolescents' interest in pursuing education, and career in medicine and allied health.

**Conclusion**

The CATALYST project promoted inter-professional collaborations to enhance efficient and cost-effective teaching and learning platforms to improve cohesive teaching and learning outcomes addressing the needs of the public. The CATALYST project strived to impact on the quality and delivery of teaching and aims to improve professional education in tertiary education institutions.

**Appendix 1**

| Question | Pre-CATALYST | Post-CATALYST |
|---|---|---|
| 1 | Your understanding of Medication Safety.<br><br>1 (lowest) – 5 (highest) | |
| 2 | Your attitude and awareness toward Medication Safety.<br><br>1 (lowest) – 5 (highest) | |
| 3 | Your understanding of Atrial Fibrillation.<br><br>1 (lowest) – 5 (highest) | |



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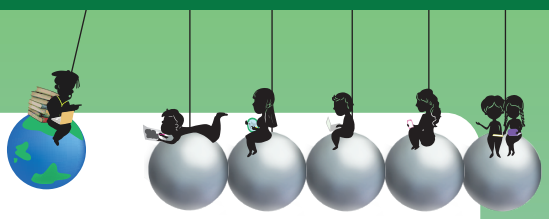
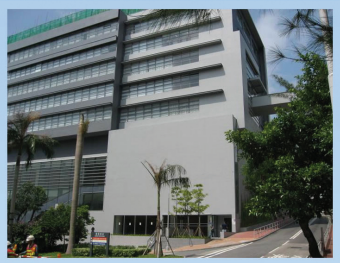
|---|---|---|
| 4 | Your attitude and awareness toward Atrial Fibrillation.<br><br>1 (lowest) – 5 (highest) | |
| 5 | Your attitude towards multidisciplinary teamwork.<br><br>1 (lowest) – 5 (highest) | |
| 6 | How would you rate your communication skill with elderly people?<br><br>1 (lowest) – 5 (highest) | |
| 7 | How would you rate your communication skill in general?<br><br>1 (lowest) – 5 (highest) | |
| 8 | The objectives of the Outreach were clearly stated.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | The objectives of the Outreach were fulfilled.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 9 | What attract you in joining this program? (Multiple selection)<br><br>1. The objectives.<br>2. I enjoy working in a multidisciplinary environment.<br>3. I enjoy participating in volunteer activities<br>4. The locations<br>5. Others | What attracted you most in the Outreach? (Multiple selection)<br><br>1. The objectives.<br>2. I enjoy working in a multidisciplinary environment.<br>3. I enjoy participating in volunteer activities<br>4. The locations<br>5. Others |
| 10 | Your expectation on improving your understanding in geriatric care through participating in this outreach program.<br><br>1 (lowest) – 5 (highest) | The Outreach help improved your understanding in geriatric care.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 11 | Your understanding of elderly patients' needs in the community.<br><br>1 (lowest) – 5 (highest) | The Outreach help improved your understanding of elderly patients' needs.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 12 | I am proud to be a CU CHAMPION member.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | |
| 13 | The objectives of the e-learning platform were clearly stated.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | The objectives of CU CATALYST 2016 were clearly stated.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |

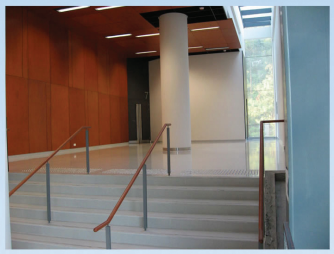


| | | |
|---|---|---|
| 14 | The e-learning platform is useful for understanding geriatric care in other perspectives.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | CU CATALYST 2016 is useful for understanding geriatric care in other perspectives.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 15 | The provided materials are very useful.<br><br>1 (Strongly disagree) – 5 (Strongly agree) | |
| 16 | How many hours do you usually spend on using e-learning platform blackboard?<br><br>1. Less than an hour.<br>2. 1 – 2 hours.<br>3. 2 – 5 hours.<br>4. More than 5 hours. | How many hours did you usually spend on using CU CATALYST 2016 on blackboard per week?<br><br>1. Less than an hour.<br>2. 1 – 2 hours.<br>3. 2 – 5 hours.<br>4. More than 5 hours. |
| 17 | Other expectation | N/A |
| 18 | N/A | The Outreach is valuable to my future practice as a medical staff / social worker.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 19 | N/A | Roles and responsibilities within the team were well defined in outreach sessions.<br><br>1 (Strongly disagree) – 5 (Strongly agree) |
| 20<br><br>N/A<br><br>Did the Outreach meet your expectation? | | |
| 21 | N/A | Suggestions for future CU CHAMPION outreach events. |
| 22 | N/A | Did CU CATALYST 2016 meet your expectation? |
| 23 | N/A | Suggestions for CU CATALYST. |

## Conference Venue

**(Lee Shau Kee Building, CUHK)**





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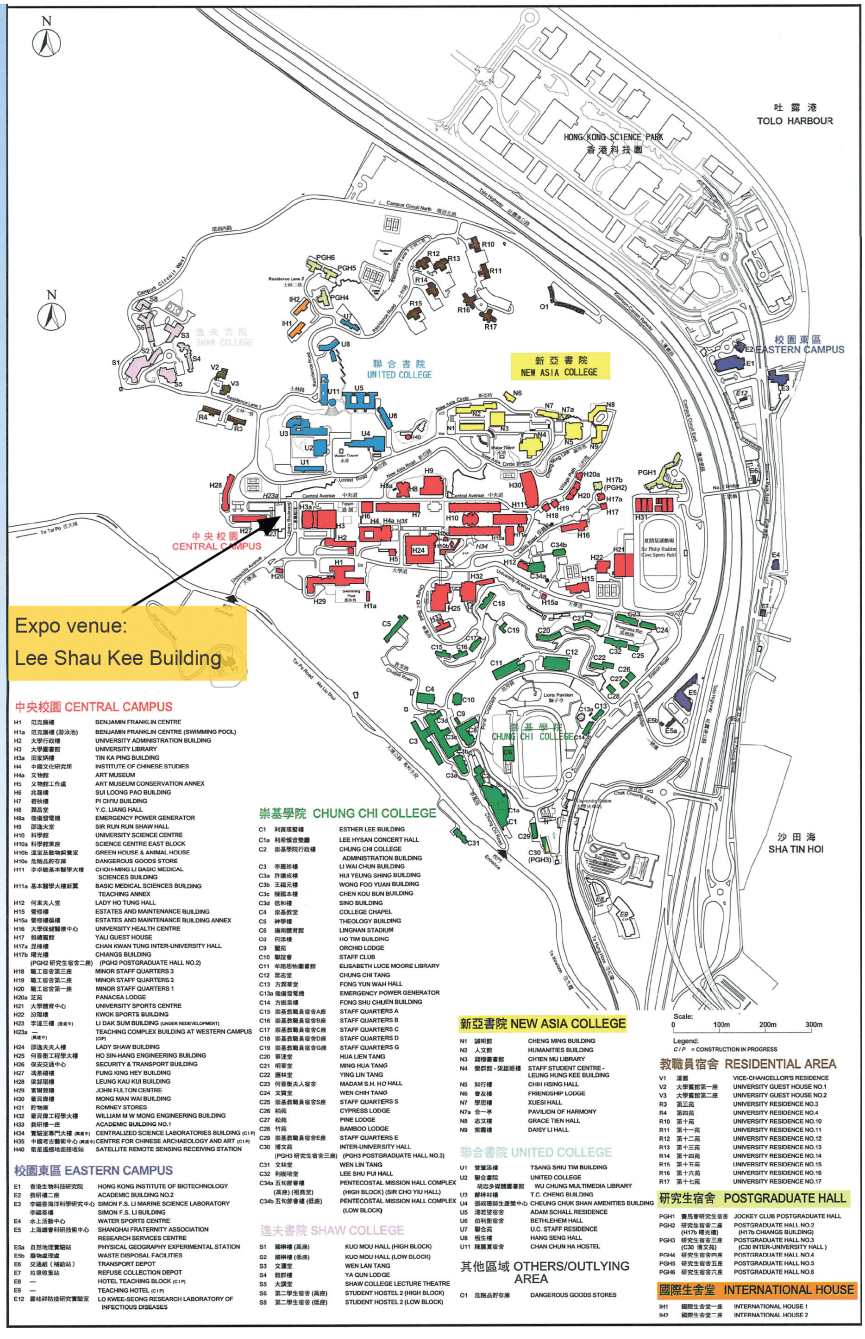
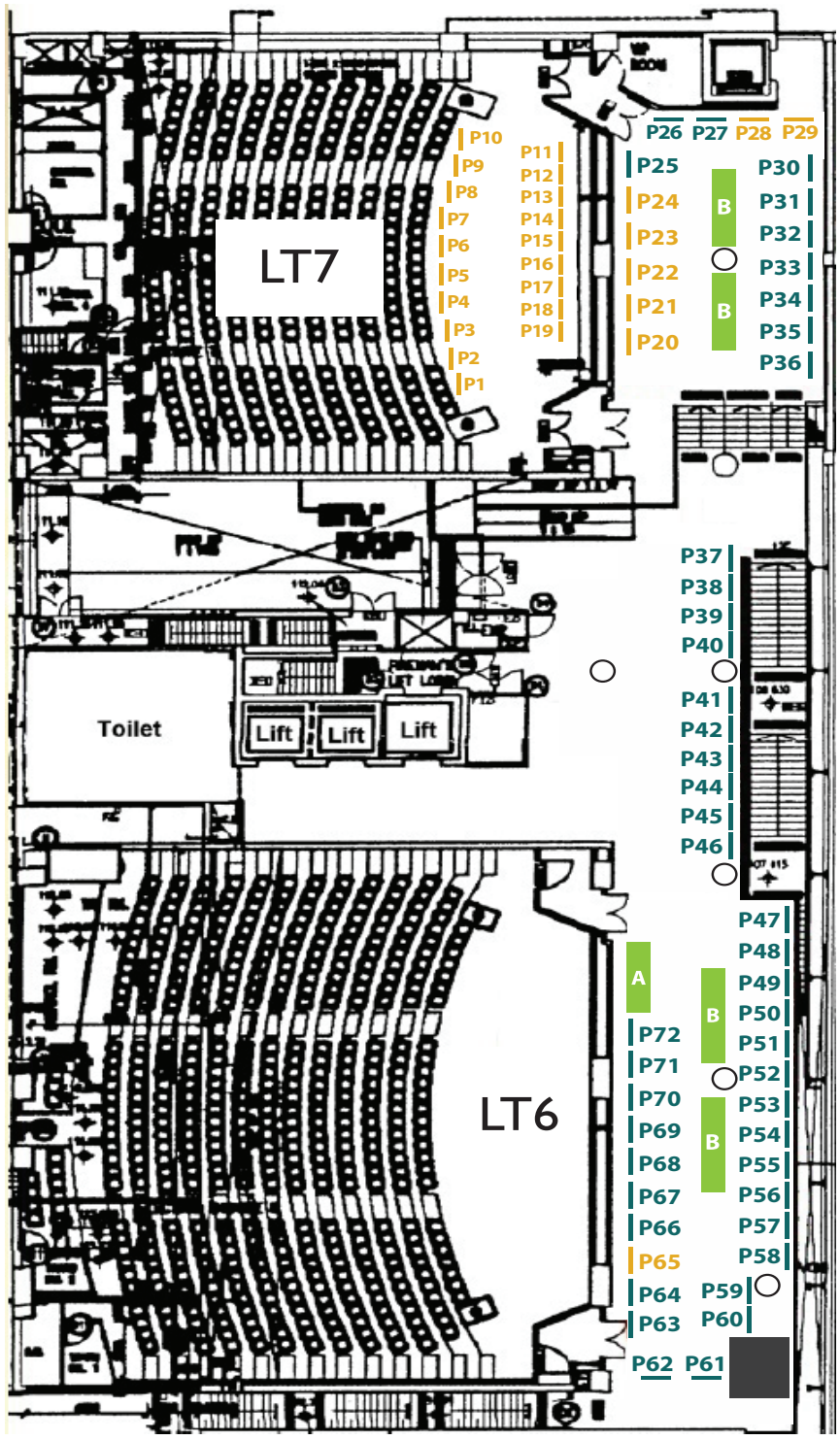


## Floor Plans of Conference Venue



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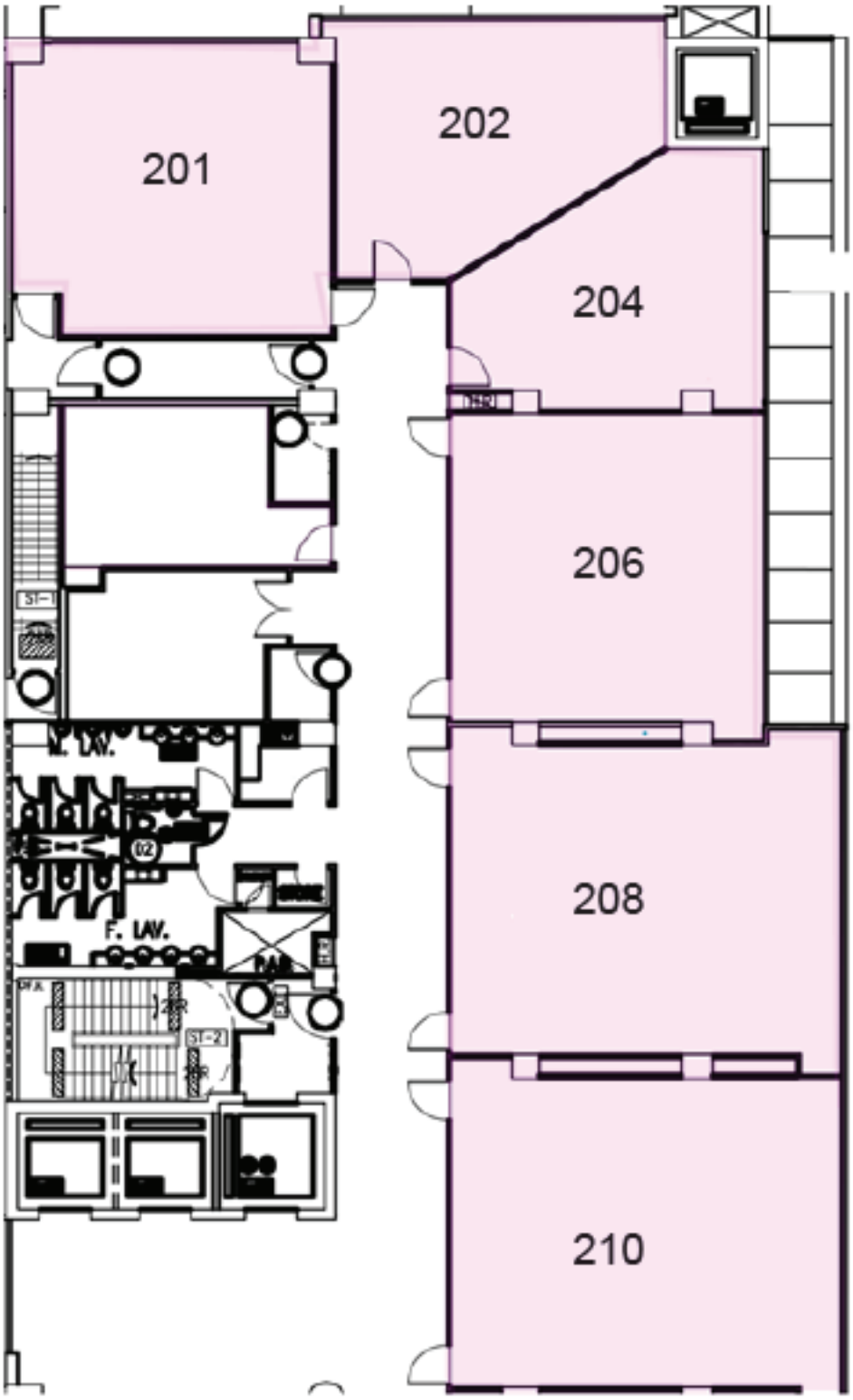

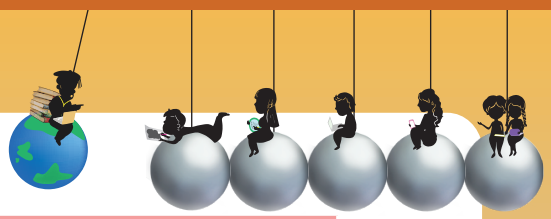

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