2012 International Conference on ICT in Teaching and Learning

資 訊 及 通 訊 科 技 教 學 應 用 國 際 會 議 2012

Engaging learners through emerging technologies

以新科技讓學生投入學習

THE OPEN UNIVERSITY OF HONG KONG

政府創辦・財政獨立 Government established・Financially independent

WEB CONSORTIUM HONG KONG

香港萬維網聯會

PROGRAMME & ABSTRACTS OF PAPERS

會 議 手 冊 及 論 文 摘 要

4 & 6 July 2012 • The Open University of Hong Kong
5 July 2012   • St Paul's Convent School

2012年7月4日及6日 • 香 港 公 開 大 學
2012年7月5日   • 聖 保 祿 學 校

Organizers 主辦機構：

THE OPEN UNIVERSITY OF HONG KONG

The Hong Kong Web Symposium Consortium
香港萬維網聯會

Hosted by 舉辦地點：

The Open University of Hong Kong
香港公開大學

St Paul's Convent School
聖保祿學校

Contents

The organizers reserve the right to amend the programme as and when necessary.

Message from the President, The Open University of Hong Kong

Prof. John C Y Leong

President
The Open University of Hong Kong

The Open University of Hong Kong (OUHK) has been a co-host and co-organizer of the Conference on ICT in Teaching and Learning many times over the years. Our commitment to the event and our view of its importance is based on our firm belief that technology can indeed help us to enhance the learning experience for our students.

This year's theme — 'Engaging Learners through Emerging Technologies' — gets right to the point. We are surrounded by people fully engaged with, even engrossed in, their mobile devices while out and about: reading books or viewing videos, having discussions with friends, or photographing and commenting on restaurant dishes while sitting in the restaurant. It may be unfair to compare these leisure activities with more serious learning, but we all believe that education can be made even more engaging than it is now by adopting the technologies that surround us.

The key task is to involve students in the learning process, so that they are more active and less passive; more engaged in collaboration and less isolated; and more aware that what they are learning is directly related to the world around them.

This task is obviously challenging. This is why it is a great pleasure to welcome all the educationalists, researchers and policymakers coming to this Conference. The most efficient and effective way to improve our practice — in this case, to truly engage learners through technology — is to collaborate, share ideas, and benefit from one another's research and concrete experience.

At the OUHK we have always tried to make full use of advances and breakthroughs in the field of education, like those shared at this event. We recently completed our large Centre for Innovation project, which aims to develop a next-generation, student-centred, intelligent, Web-based learning environment that integrates all the OUHK's information and service systems, and allows the University to offer an array of programmes electronically. We are also currently undertaking our second major campus expansion project, which will include Active Learning Classrooms and Learning Commons to foster guided self-learning and active learning among students.

We are excited about the insights that this year's Conference will inevitably yield, and look forward to the even more engaging learning experiences that this will lead to for our students.

Message from the Chair, Conference Organizing Committee

Dr K S Yuen

Chair
Conference Organizing Committee

In order to fully enable learners to reach their potential, the learning experience has to be optimized at all levels, from primary school right up to tertiary education and beyond. This Conference has always focussed on ICT in teaching and learning with a view to benefitting learners at all levels, and we strive to assemble teachers and researchers from the widest range of backgrounds.

This is evident in the diversity of the members of the Organizing Committee with whom I have had the pleasure of working this year, and the fact that the Conference will be hosted on different days at St Paul's Convent School and at the Open University of Hong Kong. This year the Conference continues its tradition of including a competition for schools and tertiary institutions to showcase innovative technologies or applications of research in teaching and learning — our eInnovation in Education Awards will be presented to the best school project and the best tertiary project. We have done our best to design the Conference to ensure that teachers and learners at all levels reap benefits.

In order to help us make the greatest advances towards student engagement, this year's Conference theme, we have invited a large number of big names in the field to share with us their insights. There will be six keynote sessions addressing our main theme from different angles such as mobile learning, social media, Web 2.0, and pedagogical design.

In addition, the Conference will cover open educational resources, including open textbooks. This is a hot topic that has been gaining attention worldwide. OERs have the potential to lessen the cost in the development of study materials while opening up possibilities for more collaborative content creation. One of the two pre-Conference workshops this year also concerns open textbook development, with a second one addressing the design of an inquiry-based approach to blended learning.

We are thrilled that this event has once again attracted participants from around the world and from the region, and that there are many different formats for sharing ideas, including keynotes, paper presentations, workshops, sharing sessions, discussion forums, and Apple Talks.

We hope participants will take full advantage of the opportunities to interact and communicate, and that those coming from overseas will enjoy their time in our city.

Message from the Chair, Programme Committee

Dr K C Li

Chair
Programme Committee

President
The Hong Kong Web
Symposium Consortium

Acting Director
Centre for Research in
Distance and Adult Learning
The Open University of Hong Kong

Welcome to this exciting programme for the 2012 International Conference on ICT in Teaching and Learning. The programme includes six keynote speeches from internationally renowned experts offering various perspectives on the Conference theme — 'Engaging Learners through Emerging Technologies.' There are discussion forums on the hot topic of the textbook problem confronting Hong Kong as well as many other parts of the world, and the possibility of open textbooks as a solution. In addition to two pre-Conference workshops, there are two Conference workshops, with special sessions on electronic book authoring systems and the use of tablet computers in teaching and learning. Over 40 papers will be presented in four parallel paper sessions. All of these papers satisfied our peer-reviewers during our selection process. To facilitate the sharing of best practices among delegates from schools as well as those from the tertiary sector, we have arranged sharing sessions and eInnovation awards.

The Conference theme — student engagement — highlights in a broad sense the major reason why we study how technologies should be employed in teaching and learning. To achieve any success in educational delivery or knowledge acquisition, the learner must be engaged. ICT applications are meant to get learners physically involved in useful learning activities, and to inspire them to be psychologically positive about the processes they are involved in and/ or to be intellectually productive. How to get students engaged behaviourally, emotionally and cognitively has emerged as a key research area. A proper understanding of student engagement levels and how they are related to the learner or curricular delivery will assist professors, teachers and instructional designers to engage students in effective learning. After so many years of development, the educational applications of ICT are maturing in various ways and there are great expectations for their effectiveness. Student engagement offers a useful focus for evaluating effectiveness, as well as the conceptual and practical dimensions for gauging the usefulness of an application.

Together with our Vice Chair, Dr Philips Wang, I am privileged to express my gratitude to our speakers, workshop facilitators, session chairs and paper presenters for their contributions to the success of this Conference. I am very much obliged to our Programme Committee members for their dedicated and expert input into the design of the programme and the abstract/paper review process. I am particularly grateful to Dr Eva Tsang and Ms Linda Chow of the Educational Technology and Publishing Unit, OUHK, for their professional contributions in ensuring the quality of our proceedings and this programme book. I would specially like to thank Ms Helen Lam of the Centre for Research in Distance and Adult Learning, OUHK, for her many months of very helpful administrative support for this Conference.

Theme of the Conference — Engaging Learners through Emerging Technologies

The Conference on ICT in Teaching and Learning 2012 will focus on the main theme 'Engaging Learners through Emerging Technologies'.

The Conference theme draws our attention to the most important work of the educator: how to engage students in learning. Learners who find the learning experience 'engaging' are naturally more likely to actively 'engage' in learning in a proactive way, and possibly even take part in shaping the learning experience.

The 'emerging technologies' referred to in the second part of the Conference title are tools that can be used to enable this active engagement in learning. These technologies can dramatically increase and enhance the ways students interact with learning materials, collaborate with each other and interact with teachers. Technologies can also give students in class access to the world beyond, and to make structured learning experiences accessible to students when they are outside the classroom.

Technologies come and go. The focus of this Conference is naturally on those emerging technologies that seem to hold the greatest promise for educational applications. However, any technology, even some technologies have been around for some time, can be effectively employed in teaching and learning; and conversely, a new technology that is poorly used might obstruct rather than facilitate learning. The Conference theme, then, reminds us of the inspired balancing act that is needed in order to apply technology in a way that engages students and allows them to engage in learning.

The Conference will also address other hot topics, like open education resources and blending learning. OERs and blending learning give teachers the ability to flexibly adapt resources and adopt different modes of learning to engage their students most effectively.

Based on the Conference theme, the parallel paper presentations are divided into the following sub-themes:

- Technology
- Online learning
- Student engagement
- Teaching experience
- Web 2.0
- Open education resources (OER).

# The Open University of Hong Kong (OUHK) 香港公開大學校園地圖

Serena Yang Lecture Theatre 楊雪姬演講廳

- Registration 辦理登記 (G/F Foyer)
- Opening Ceremony 開幕典禮
- Keynote Sessions 主題演講
- Award Presentation 頒獎典禮
- Closing Ceremony 閉幕典禮

Fat Kwong Street 佛光街

Block C   Blocks A and B

Serena Yang Lecture Theatre

Serena Yang Lecture Theatre G/F Foyer

Block C G/F

Good Shepherd Street 牧愛街
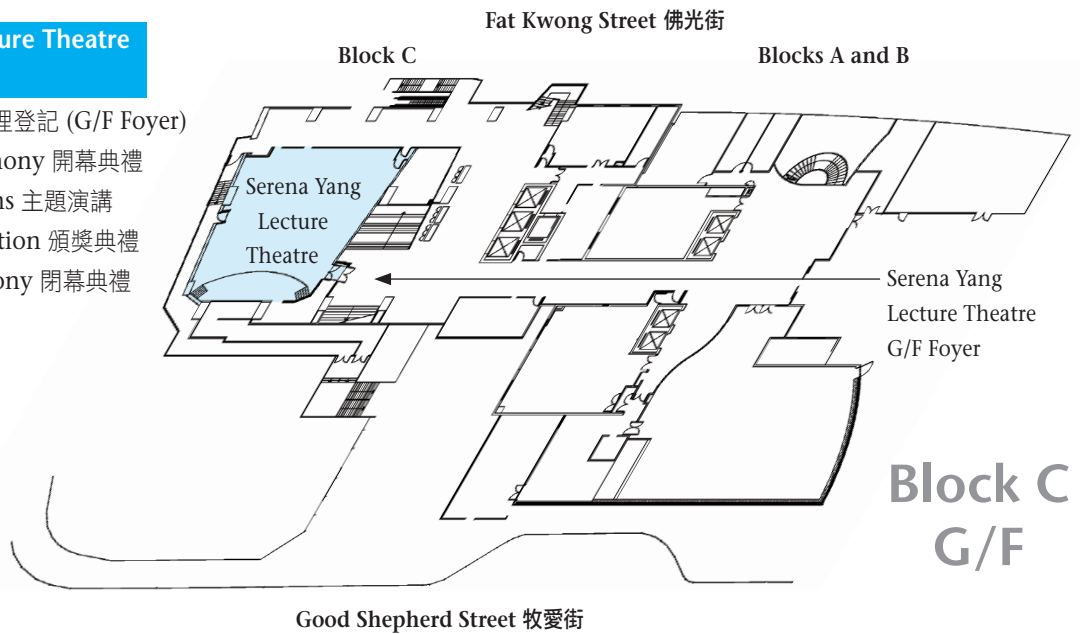
Serena Yang Lecture Theatre 1/F Foyer 楊雪姬演講廳一樓大堂

- Coffee Break 茶點招待

Serena Yang Lecture Theatre

Serena Yang Lecture Theatre 1/F Foyer
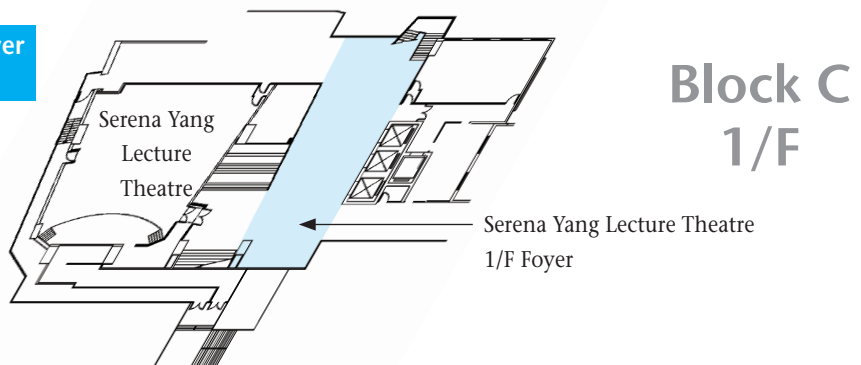
Block C 1/F

Tai Ning Hall 泰寧軒

- Pre-Conference Workshops
  會議舉辦前的工作坊

Tai Ning Hall
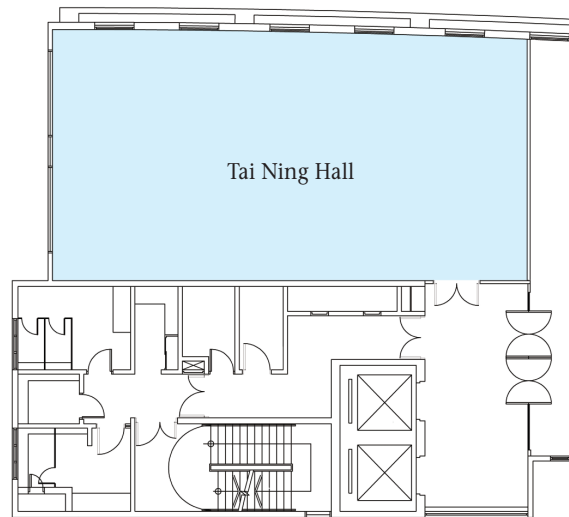
**Block A
12/F**

Classrooms 課室 C0611, C0612 and C0619

- Parallel Paper Presentations 分組專題討論會
- Workshops 工作坊
- Discussion Forum 研討會
- Apple Talk
  蘋果平板電腦工作坊

C0619

C0612 C0611
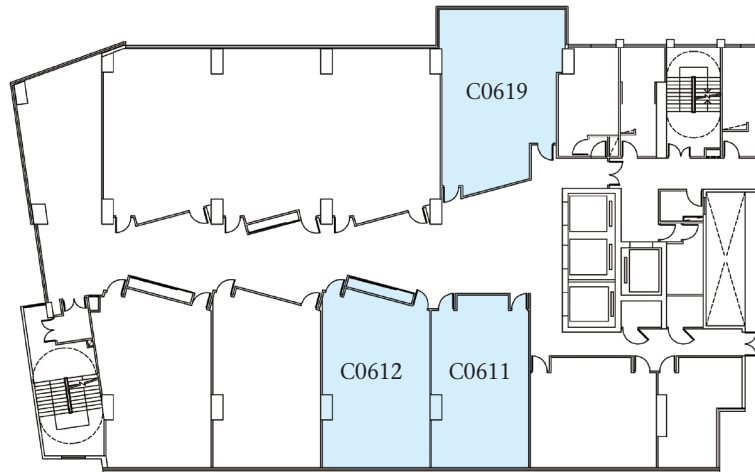
**Block C
6/F**

Multi-Purpose Hall 多用途禮堂

- Lunch 午膳
- Exhibition 展覽

**Book and IT
Exhibition**
Day 1 and Day 3
Multi-Purpose Hall

Multi-Purpose Hall
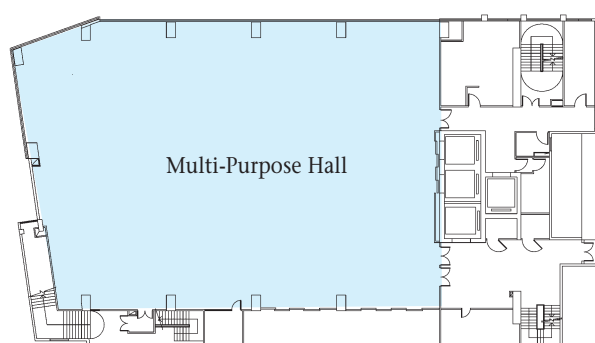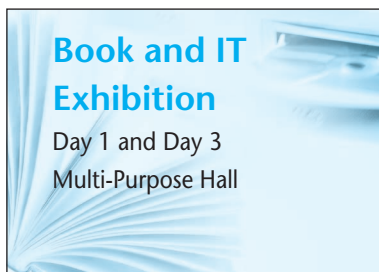
**Block C
10/F**

WiFi Wi-Fi Internet access is available throughout the OUHK campus.
Wi-Fi Username: ict2012   Password: ict2012
校舍內多個地點均提供Wi-Fi上網設施。

St Paul's Convent School 聖保祿學校地圖

7/F	Classroom of the Future	
6/F		
5/F		
4/F		
3/F		
2/F	Student Activity Centre	

SIP New Wing

Workshop 工作坊/
Sharing Sessions 分享研討會

Staircase No. 4

Sharing Sessions 分享研討會/
***e*Innovation Project Presentations**
參賽作品簡介會

Linking Bridge

Staircase No. 2

Coffee Break 茶點招待 (Covered Playground)

Garden

Staircase No. 1

6/F	
5/F	
4/F	
3/F	
2/F	
1/F	
G/F	

6/F	
5/F	
4/F	Rm 411
3/F	
2/F	
1/F	
G/F	G7 Theatre

Keynote Sessions
主題演講
(Hall)

Apple Talk
蘋果平板電腦工作坊

Staircase No. 3

Discussion Forum 研討會

Registration Desk
登記處

Pool

Main Entrance

Leighton Road

Wi-Fi Internet access is available.

Committees

Organizing Committee

Chair:	Dr K S Yuen	The Open University of Hong Kong
Vice-chair:	Sr Margaret Wong	St Paul's Convent School
Members:	Dr K S Cheung	The Open University of Hong Kong
	Dr K C Li	The Open University of Hong Kong
	Dr Eva Tsang	The Open University of Hong Kong
	Dr Philips Wang	Caritas Institute of Higher Education
	Prof. Reggie Kwan	Caritas Institute of Higher Education
	Prof. Philip Tsang	Hong Kong Web Symposium Consortium
	Dr F T Chan	The University of Hong Kong
	Dr Bob Fox	The University of Hong Kong
	Mr Andrew Lai	St Paul's Convent School
	Mr Titus Lo	Caritas Institute of Higher Education
	Mr S H Tong	Hong Kong Baptist University

Programme Committee

Chair:	Dr K C Li	The Open University of Hong Kong
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Members:	Dr K S Yuen	The Open University of Hong Kong
	Dr K S Cheung	The Open University of Hong Kong
	Prof. Reggie Kwan	Caritas Institute of Higher Education
	Prof. Philip Tsang	Caritas Institute of Higher Education
	Dr F T Chan	HKU School of Professional and Continuing Education
	Dr Bob Fox	The University of Hong Kong
	Prof. Bebo White	Stanford University
	Prof. Li Chen	Beijing Normal University
	Mr Geoff Fellows	Charles Sturt University
	Mr Kin Chew Lim	SIM University, Singapore.
	Dr Andrew Lui	The Open University of Hong Kong
	Dr Vanessa Sin Chun Ng	The Open University of Hong Kong
	Dr Alfred Tan	Hong Kong Baptist University
	Ms Yee Man Madeleine Tsoi	Caritas Bianchi College of Careers
	Dr Szeto Chi Man Raymond	HKU School of Professional and Continuing Education
	Dr Vincent Tam	The University of Hong Kong
	Dr Giuliana Dettori	The Istituto per le Tecnologie Didattiche, Italy
	Prof. Wolfgang Halang	FernUniversität in Hagen, Germany
	Prof. Stefan Trausan-Matu	Politehnica University of Bucharest, Romania
	Dr Yuhuna Wang	Mount Royal University, Canada
	Mr Tong Siu Hung	Hong Kong Baptist University

Pre-Conference **3 JULY 2012** **TUESDAY**	9:00–12:30	Pre-Conference Workshop I 會議舉辦前的工作坊 I **Designing an inquiry-based approach to blended learning** **Dr Norm Vaughan** Mount Royal University, Canada *Please refer to p.22 for details.*	12/F Tai Ning Hall 12樓泰寧軒
	2:00–5:30	Pre-Conference Workshop II 會議舉辦前的工作坊 II **Introduction to open peer collaboration models for open textbook development** **Dr Wayne Mackintosh** The Open Education Resource (OER) Foundation *Please refer to p.22 for details.*	C0411 Computer Room C0411 電腦室
DAY 1 **4 JULY 2012** **WEDNESDAY**	8:15–9:10	Registration 辦理登記	Serena Yang Lecture Theatre G/F Foyer 楊雪姬演講廳地下大堂
	9:10–9:30	Opening Ceremony 開幕典禮	Serena Yang Lecture Theatre 楊雪姬演講廳
	9:30–10:30	Keynote Session I 主題演講 I **Student engagement and Web 2.0:** **What's the connection?** **Dr Norm Vaughan** Mount Royal University, Canada *Please refer to p.16 for details.*	Serena Yang Lecture Theatre 楊雪姬演講廳
	10:30–10:50	Coffee Break 茶點招待	1/F Foyer
	10:50–12:30	Parallel Paper Presentations 分組專題討論會 *Please refer to p.11 for details.*	C0611, C0612, C0619
	12:30–2:00	Lunch 午膳	10/F Multi-Purpose Hall 10樓多用途禮堂
	2:00–2:30	OER Opening Session OER 研討會序幕 **The OER phenomenon: from connectivity to next-generation learning** **Prof. Leung Chun Ming** The Open University of Hong Kong	Serena Yang Lecture Theatre 楊雪姬演講廳
	2:30–3:30	Keynote Session II 主題演講 II **The OER university: Global innovation for sustainable education futures** **Dr Wayne Mackintosh** The Open Education Resource (OER) Foundation *Please refer to p.17 for details.*	Serena Yang Lecture Theatre 楊雪姬演講廳
	3:30–3:50	Coffee Break 茶點招待	1/F Foyer
	3:50–5:50	Parallel Paper Presentations 分組專題討論會 *Please refer to p.11 for details.*	C0611, C0619
		Discussion Forum 研討會 **Use of e-resources for effective learning:** **Open textbooks as a solution to Hong Kong's textbook problem** *Please refer to p.11 for details.*	C0612
	7:00–8:30	Conference Dinner 晚膳	Star of Canton Restaurant, TST 利寶閣

Parallel Paper Presentations   10:50–12:30

Technology C0619	Online Learning C0611	Student Engagement C0612
Tree-based comparison for plagiarism detection and automatic marking of programming assignments **Sin-chun Ng, Andrew Kwok-fai Lui and Lai-shan Wong** The Open University of Hong Kong p.26	**Using asynchronous online discussion in blended learning environments: supporting three different student learning outcomes** **Khe Foon Hew and Wing Sum Cheung** National Institute of Education p.33	**Student engagement: meanings, approaches and ideas for educators interested in ICT** **K C Li** The Open University of Hong Kong **Fu Lee Wang** Caritas Institute of Higher Education p.36
e-Assessment: a case of student-centred learning **Madeleine Tsoi and Reggie Kwan** Caritas Institute of Higher Education p.26	**A report on the online learning experience of students in accounting course** **J Lam, R Chan, and K Yan** HKU School of Professional and Continuing Education p.33	**Engaging students through the use of ICT: the causal mechanisms involved** **Kevin W K Chu** The Open University of Hong Kong p.36
Emerging technologies in an RFID library for e-learning **Fan Yang** Chengdu Community University **Fengli Zhang and Jiahao Wang** University of Electronic Science and Technology of China p.27	**An effective tool to support teaching and learning of modular programming** **Fu Lee Wang, Reggie Kwan and Kenneth Wong** Caritas Institute of Higher Education p.34	**Creating engaging experiences through a blended media innovation** **Mun Fie Tsoi** Marshall Cavendish International Singapore Pte Ltd p.37
The role of IT in enhancing the quality of student support services in open education **Hui Cai** Shenzhen Radio and TV University **Yan Wang** Shenzhen Radio and TV University and Kingdee International Software Group Co. Ltd. p.27	**An e-learning system for piano instruction** **Ruiheng Sun, Ningsheng Ma, Yuening Zhang, Qing Luo and Hui Ye** Tongji University p.34	**Diversity in student engagement: how students behave, feel and learn in a distance course** **K C Li and Helen H K Lam** The Open University of Hong Kong p.37
Developing the information model of e-textbooks **Wei Fu,Gui-chao Qi and Xiao-qing Gu** East China Normal University p.28	**The design and development of a digital intelligent teaching platform based on physical principles** **Qing Luo, Hui Ye, Ruiheng Sun and Zuyuan Wang** Tongji University p.35	**A virtual experiment and metacognition: an online experiment on measuring acceleration** **Yu Lu and Ningsheng Ma** Tongji University p.38

Parallel Paper Presentations   3:50–5:10

Technology C0619	Teaching Experience C0611
A pilot study on using public cloud to support server-side practical classes **Andrew K Lui, Kelvin K W Lee, Steven S O Choy, Kwun-tat Chan and Ka-chun Chan** The Open University of Hong Kong p.28	**Student teachers' perception of the VBL system to enhance technology integration competencies** **Ya-fung Chang, Yi-chin Chen and Chia-ling Hsu** Tamkang University p.39
The measurement of learning conceptions in web-searching **Jui Feng** Fo Guang University **Meilun Shih** National Taiwan University **Chia-pin Kao** Southern Taiwan University p.29	**An intercultural teaching experience — the DAAD-supported summer school in China** **Li Zhang** University of Posts and Telecommunications **Ralf Schellhase** University of Applied Sciences **Birgit Franken** Baden-Wuerttemberg Cooperative State University p.39
Citizenship education via an online peer discussion blended learning approach: lessons learned **Khe Foon Hew and Wing Sum Cheung** National Institute of Education p.29	**The design and implementation of a PPT template based on an SMS modem to make peer instruction easy and popular** **Ning Xie, Ping Wu, Xiao Zhang, Yu He, Yong Zeng and Xiumei Li** Southwest Jiaotong University p.40
The future classroom — a multi-display learning space P **Weidong Chen** Suzhou University of Science and Technology **Jing Gao** Suzhou Arts High School p.30	**Building a multi-factor decision-making making system to stimulate teachers' internal motivation** P **Chen Chang-cheng** **Nanzhuang Sanzhong, Chancheng District** **Jian Zhao-lin and Wong Mei-yi** Jiaoyu Ju, Chancheng District p.40

Discussion Forum   3:50–5:50

C0612

Use of e-resources for effective learning: Open textbooks as a solution to Hong Kong's textbook problem

(The discussion will be conducted in English.)

Panel Chair: Dr K S Yuen

The Panel Chair, in conjunction with a team of panel members who have been involved in the design of an open textbook platform for Hong Kong, will lead a discussion on the use of e-resources, particularly open textbooks, for effective learning in Hong Kong classrooms. The panel will explore how open textbooks can at the same time tackle the problem of high textbook prices in Hong Kong.

Note: For abstracts of the papers, please refer to the respective page numbers shown.

P The paper presentation will be conducted in Putonghua.

DAY 2 **5 JULY** **2012** **THURSDAY**			
	8:15–9:00	Registration 辦理登記	Main Entrance
		Light Breakfast 早點招待	Hall Balcony
	9:00–10:15	Keynote Session III 主題演講 III **Engaging students with mobile learning** **Prof. Mohamed Ally** Athabasca University, Canada *Please refer to p.18 for details.*	Hall
	10:15–10:30	Coffee Break 茶點招待	Covered playground
	10:30–12:30	Sharing Sessions 分享研討會 **Primary and secondary school teachers** *Please refer to p.13 for details.*	2/F Student Activity Centre
		Apple Talk I 蘋果平板電腦工作坊 I **Reshaping content and engaging students: transforming school-based content with iLife and iBooks Author** *Please refer to p.13 for details.*	Room 411
		Conference Workshop I 會議工作坊 I **Designing for 21st-century literacies to engage students** **Prof. John Hedberg** Macquarie University, Australia *Please refer to p.23 for details.*	Classroom of the Future
	12:30–2:00	Lunch 午膳	Regal Hong Kong Hotel
	2:30–3:40	Discussion Forum 研討會 **Use of e-resources for effective learning:** **Open textbooks as a solution to Hong Kong's textbook problem** *(Discussion conducted in Cantonese)* *Please refer to p.13 for details.*	G7 Theatre
		Sharing Session (*Video Conferencing*) 分享研討會 **Global learning for life** *Please refer to p.13 for details.*	Classroom of the Future
		Apple Talk II 蘋果平板電腦工作坊 II **Let's make learning visible: iPad in the student-centric classroom** *Please refer to p.13 for details.*	Room 411
		*e*Innovation in Education 參賽作品簡介會 **Project presentations** *Please refer to p.13 for details.*	2/F Student Activity Centre
	3:40–4:00	Coffee Break 茶點招待	
	4:00–5:15	Keynote Session IV 主題演講 IV **Open and informal: Learning from social media** **Prof. Josie Taylor** The Open University, UK *Please refer to p.19 for details.*	Hall

10:30–12:30

Sharing Sessions		Apple Talk I	Conference Workshop I
Student Activity Centre		**Room 411**	**Classroom of the Future**
Primary schools	*Secondary schools*	Reshaping content and engaging students: transforming school-based content with iLife and iBooks Author	Designing for 21st-century literacies to engage students
A school-based e-textbook and e-learning platform for Key Stage 1 (P1–P3) students: a pilot project	Collaborative learning platform for Liberal Studies		Prof. John G Hedberg
HHCKLA Buddhist Wong Cho Sum School	Christian Alliance S W Chan Memorial College	Gilbert Ho and Cecilia Tsang	Macquarie University
		Apple Education Team	
A school network for enhancing student information literacy across the curriculum	From do you think to what do you think: using interactive technology to facilitate collaborative knowledge construction	This will be a fully hands-on workshop, with a maximum of 30 participants. Please reserve a place at the Registration Desk.	Workshop participants will learn about the new skill set required in using technologies to see, construct and explore. Specific examples will enable them assess what elements make up engaging design.
PLK Chee Jing Yin Primary School	United Christian College, Kowloon East	*Please refer to p.24 for details.*	
A mutual active learning system for students with dyslexia, and new e-learning facilities	*See p.50 for details.*		
Sam Shui Natives Association Lau Pun Cheung School			
Learning with a tablet PC			
CCC Heep Woh Primary School, Cheung Sha Wan			
Using ICT in conducting programmes for gifted learners			
CCC Kei Wa Primary School, Kowloon Tong			
See pp. 47–49 for details.			

2:30–3:40

Discussion Forum	Sharing Session	Apple Talk II	*e*Innovation in Education
G7 Theatre	**Classroom of the Future**	**Room 411**	**Student Activity Centre**
Use of e-resources for effective learning: Open textbooks as a solution to Hong Kong's textbook problem	Global learning for life — multi-city, real-time distance learning with Chongqing, Foshan, Taipei and Hong Kong	Let's make learning visible: iPad in the student-centric classroom	Project presentations
(The discussion will be conducted in Cantonese.)	Wai-choi Lam	Gilbert Ho and Cecilia Tsang	Each presenter will be given ten minutes to make a presentation of their project work. An award presentation ceremony will be held in Day 3.
	St Bonaventure Catholic Primary School	Apple Education Team	
Panel Chair: Dr K S Yuen	Pak-shing Au	This will be a fully hands-on workshop, with a maximum of 30 participants. Please reserve a place at the Registration Desk.	
The Panel Chair, in conjunction with a team of panel members who have been involved in the design of an open textbook platform for Hong Kong, will lead a discussion on the use of e-resources, particularly open textbooks, for effective learning in Hong Kong classrooms. The panel will explore how open textbooks can at the same time tackle the problem of high textbook prices in Hong Kong.	St Bonaventure College and High School	*Please refer to p.24 for details.*	
	In this session, the speakers will share their real-time distance learning experience of their project. They will explain the set up of the distance classroom, discuss the management of distance class and teaching, and demonstrate how the real-time 'distance class' with four cities works.		
	Please refer to p.51 for details.		

DAY 3 **6 JULY 2012** **FRIDAY**	8:15–9:00	Registration 辦理登記	Serena Yang Lecture Theatre G/F Foyer 楊雪姬演講廳地下大堂
		Light Breakfast 早點招待	1/F Foyer
	9:00–10:30	Keynote Session V (*Video Conferencing*) 主題演講 V **Social media and student engagement** **Prof. Rey Junco** Lock Haven University, USA *Please refer to p.20 for details.*	Serena Yang Lecture Theatre 楊雪姬演講廳
		Apple Talk I 蘋果平板電腦工作坊 I **Reshaping content and engaging students: transforming school-based content with iLife and iBooks Author** *Please see p.15.*	C0612
	10:30–10:50	Coffee Break 茶點招待	1/F Foyer
	10:50–12:30	Parallel Paper Presentations 分組專題討論會 *Please refer to p.15 for details.*	C0611, C0619
		Apple Talk II 蘋果平板電腦工作坊 II **Let's make learning visible: iPad in the student-centric classroom** *Please see p.15.*	C0612
	12:30–2:00	Lunch 午膳	10/F Multi-Purpose Hall 10樓多用途禮堂
	2:00–3:30	Parallel Paper Presentations 分組專題討論會 *Please refer to p.15 for details.*	C0611
		Conference Workshop II 會議工作坊 II **Strategies and challenges for integrating mobile learning in higher education** **Prof. Mohamed Ally** Athabasca University, Canada *Please refer to p.23 for details.*	C0612
	3:30–3:50	Coffee Break 茶點招待	1/F Foyer
	3:50–5:10	Keynote Session VI 主題演講 VI **Digital technology and designing for a pedagogy of student engagement** **Prof. John Hedberg** Macquarie University, Australia *Please refer to p.21 for details.*	Serena Yang Lecture Theatre 楊雪姬演講廳
	5:10–5:30	Closing Ceremony with Award Presentations and Introduction to ICT 2013 閉幕典禮、頒獎儀式及 ICT2013 會議介紹	Serena Yang Lecture Theatre 楊雪姬演講廳

Parallel Paper Presentations · 10:50–12:30

Web 2.0 C0619	OER C0611	Apple Talk C0612
Using a Facebook closed-group as part of an online course **Daniyar Sapargaliyev** Eurasian National University p.41	**Open access textbooks: opportunities and challenges** **Simon K S Cheung, K S Yuen, K C Li, Eva Y M Tsang and Alex Wong** The Open University of Hong Kong p.44	9:00–10:30 **Apple Talk I** **Reshaping content and engaging students: transforming school-based content with iLife and iBooks Author** 10:50–12:30 **Apple Talk II** **Let's make learning visible: iPad in the student-centric classroom** **Gilbert Ho and Cecilia Tsang** Apple Education Team This will be a fully hands-on workshop, with a maximum of 30 participants. Please reserve a place at the Registration Desk. *Please refer to p.24 for details.*
A group blog for ESL teaching in a Hong Kong post-secondary institution: features analysis and comparison **Sin Ying Sharon Wong and Sze Ming Kat Leung** Caritas Institute of Higher Education p.41	***e*Volution from conventional textbooks to open textbooks: a way out for Hong Kong** **K C Li, K S Yuen, Simon K S Cheung and Eva Y M Tsang** The Open University of Hong Kong p.44	
Social network sites and e-learning adoption **Ramón Rufín Moreno** Universidad Nacional de Educación a Distancia **Cayetano Medina Molina** Centro Andaluz de Estudios Empresariales Avda Leonardo da Vinci Ed. CEADE p.42	**Overcoming copyright hurdles in the development of learning materials in the digital era** **K S Yuen, Linda Chow, Simon K S Cheung, K C Li and Eva Y M Tsang** The Open University of Hong Kong p.45	
Learning management system: Japanese student perceptions and expectations **Yoko Hirata and Yoshihiro Hirata** Hokkai-Gakuen University p.42	**Pedagogical and technological considerations in the design and development of open e-textbooks** **Eva Y M Tsang, K S Yuen, K C Li and Simon K S Cheung** The Open University of Hong Kong p.45	
An enhanced e-assessment system for the acquisition of Putonghua **Carole Chen, Kenneth Wong, Kat Leung and Reggie Kwan** Caritas Bianchi College of Careers p.43	**A study on the effectiveness of open educational resources: the logistics management specialism at Shenzhen RTVU** P **Shengqiang Su** Shenzhen Radio and TV University p.46	

Parallel Paper Presentations 2:00–3:40 · Conference Workshop II 2:00–3:30

Technology C0611	C0612
A mobile application to enhance teaching and learning in classroom environment **Sin-chun Ng, Andrew Kwok-fai Lui and Dennis Siu-fung Tsui** The Open University of Hong Kong p.30	**Strategies and challenges for integrating mobile learning in higher education** **Prof. Mohamed Ally** Athabasca University This workshop will enable participants to identify strategies that their educational institutions can use to integrate mobile learning into educational delivery for greater flexibility, and identify related challenges to be overcome. p.23
Design and development of multi-subject item bank in an m-learning system **Hui Ye, Zuyuan Wang, Qing Luo and Yuanyuan Hu** Tongji University p.31	
Designing a preliminary e-textbook **Zhe Xu, Hai-bo Li and Xiao-qing Gu** East China Normal University p.31	
Research on the learner guide mechanism in the virtual experiment platform of physics based on the theory of user-centered design **Yuanyuan Hu, Zuyuan Wang, Yu Lu and Ruiheng Sun** Tongji University p.32	
Analysis of experts' and novices' thinking process in program debugging P **Ching-zon Yen** National Taipei University of Education **Ping-huang Wu** Tungnan University **Ching-fang Lin** De Lin Institute of Technology p.32	

Note: For abstracts of the papers, please refer to the respective page numbers shown.

P The paper presentation will be conducted in Putonghua.

Dr Norm Vaughan

Mount Royal University
Canada

An educator and researcher with interests in blended learning, faculty development and K–12 schooling, Dr Norm Vaughan is an Associate Professor in the Department of Education, Faculty of Teaching and Learning at Mount Royal University in Calgary, Alberta. He co-authored the book *Blended Learning in Higher Education* (Jossey-Bass, 2008) and has published a series of articles on blended learning and faculty development. Norm is the co-founder of the Blended Online Design Network (BOLD), a member of the Community of Inquiry Research Group, the Associate Editor of the *International Journal of Mobile and Blended Learning* and he is on the Editorial Boards of the *International Journal of Excellence in e-Learning*, *Canadian Journal of Learning and Technology*, the *Journal of Distance Education*, the *Journal on Centres for Teaching and Learning*, the *Learning Communities Journal* and the *Journal of Information Fluency*. Further information about Norm can be found on his personal website.

Keynote address

Student engagement and Web 2.0: What's the connection?

Over the past decade, there has been an increased focus on the topic of student engagement in light of rising tuition costs and concerns about student success and retention rates. During this time there has also been an increased student use of Web 2.0 technologies such as social networking sites, blogs, wikis and virtual worlds but there has been a lack of corresponding research about how these tools are impacting their learning and engagement. This keynote session will explore the relationship between student engagement, inquiry-based learning and Web 2.0 tools.

In North America, the National Survey of Student Engagement (NSSE) has demonstrated that engagement, persistence, grades and student satisfaction go hand in hand. This framework consists of the following five benchmarks:

1. active and collaborative learning
2. student interactions with faculty members
3. level of academic challenge
4. enriching educational experiences
5. supportive campus environment.

Can Web 2.0 tools be used to design learning activities that foster student engagement and success through an inquiry-based approach to learning? This session will attempt to answer this question by presenting a series of case studies that will help you identify strategies and tools that are appropriate for engaging students in your own teaching and learning context.

Keynote Session II

Dr Wayne Mackintosh

The Open Education Resource (OER) Foundation

Dr Wayne Mackintosh is the founding director of the OER Foundation. He is coordinating the establishment of the OER university, an international innovation partnership which aims to provide free learning opportunities for all students worldwide with pathways for OER learners to achieve credible credentials. He is also director of the International Centre for Open Education at Otago Polytechnic in New Zealand and serves as a member of the Board of Directors of the OER Foundation. Dr Mackintosh is an elected member and inaugural Chair of the WikiEducator Community Council.

Wayne has extensive international experience in educational technology, learning design and the theory and practice of open and distance learning (ODL). Previously, he was Education Specialist, eLearning and ICT policy at the Commonwealth of Learning (COL), an intergovernmental organization based in Vancouver, Canada. Wayne has participated in a range of international consultancies and projects including work for COL, the International Monetary Fund, UNESCO and the World Bank. He also serves as a member of the Editorial Board of Open Learning and publishes regularly in the field of flexible and distance learning. Wayne is a member of the Advisory Board of the Wikimedia Foundation, Creative Commons New Zealand and the Monterey Institute for Technology and Education. Wayne's formal biography can be found at http://wikieducator.org/User:Mackiwg/Biography.

Keynote address

The OER university: Global innovation for sustainable education futures

An open and digital Internet provides unprecedented opportunities for universities to provide more affordable access to post-secondary education for all students worldwide.

The OER university (OERu) is an international innovation partnership between accredited educational institutions which will provide free learning opportunities to all learners worldwide with pathways to gain academic credit from formal education institutions.

The OERu network is based on the community service and outreach missions of tertiary education providers to develop a parallel learning universe. The founding anchor partners from four continents are nurturing the development of a sustainable OER ecosystem which aims to serve both formal and informal learners by creating more flexible and affordable pathways to meet diverse student needs.

Wayne Mackintosh, one of the thought leaders collaborating on the design and implementation of the OERu, will share the history, current developments and future plans of this innovative international collaboration. The OERu provides an exemplar for low risk, low cost but high impact strategy innovation for the mainstream adoption of open education approaches in higher education.

OER is the means by which education at all levels can be more accessible, more affordable and more efficient. Working together we can return to the core values of the academy, namely to share knowledge freely.

Prof. Mohamed Ally
Athabasca University
Canada

Prof. Ally is Professor in Distance Education and Chair of the Centre for Distance Education at Athabasca University, Canada. He is also a Researcher in the Technology Enhanced Knowledge Research Institute at Athabasca University. He obtained his PhD from the University of Alberta, Canada. His current areas of research include mobile learning, e-learning, distance education, and the use of information and communication technology in training and education. Prof. Ally is Past-President of the International Federation of Training and Development Organizations (IFTDO) and is one of the Founding Directors of the International Association of Mobile Learning (IamLearn). He was also on the board of the Canadian Society for Training and Development. Prof. Ally chaired the Fifth World Conference on Mobile Learning and co-chaired the First International Conference on Mobile Libraries. He recently edited four books on the use of mobile technology in education, training and libraries. His book *Mobile Learning: Transforming the Delivery of Education and Training* won the prestigious Charles A Wedemeyer Award for significant contribution to distance education. Two of his research papers won the best research paper award at national and international conferences. Prof. Ally has published articles in peer-reviewed journals, chapters in books and encyclopedias, and served on many journal boards and conference committees. He has presented keynote speeches, workshops, papers and seminars in many countries.

Keynote address

Engaging students with mobile learning

The current and upcoming generations of learners are comfortable using mobile technology, and the technology is becoming second nature and an extension of these learners. Learners are using mobile technology to socialize, to access information, to complete financial transactions, to shop, for entertainment, etc. The question educators have to ask is 'How can education be changed to integrate mobile technology so that students can be engaged and learn from anywhere and at anytime?' Learning materials must be designed properly to engage students using mobile technology. Teachers must take advantage of the capabilities of mobile technology to build interactivity into learning to achieve high-level learning outcomes. Students should be encouraged to use their existing expertise in social media to build learning communities where they can learn from each other and share information. Students have mobile technology in their hands and pockets, so they should be empowered to use the technology. The use of mobile learning in education will reach out to students to meet their needs, which could result in lower dropout rates and the achievement of high-level learning outcomes. As we move into the 21st century the technology will become ubiquitous, with students learning from anywhere and at anytime. Education institutions must prepare for ubiquitous learning to deliver education to upcoming generations. With proper planning and change-management strategies, the transition to mobile learning and ubiquitous learning will be successful. However, there must be a sense of urgency to make this transition before we lose the motivation of students.

Keynote Session IV

Prof. Josie Taylor, Director of the Institute of Educational Technology of The Open University, UK has a track record of more than 20 years' experience in research, development and evaluation of interactive media and innovative pedagogies. She has a Bachelor's Degree in Dance, Drama and Psychology (University College, Worcester) and a DPhil in Cognitive Sciences (University of Sussex). Her research focuses on understanding the ways in which people learn from complex media (traditional and digital) and how best to design those media to support learning. This spans system design, interface design, interaction design, user requirements, and evaluation, and entails understanding user psychology, the nature of learning and the contexts of learning.

Prof. Josie Taylor
The Open University
UK

Keynote address

Open and informal: Learning from social media

The Open University has been developing various open channels and Web 2.0 social networking applications which allow us to provide learning opportunities not only for our students, but for anyone, anywhere. What do people learn from these channels? In this presentation I will talk generally about the OU's approach to open educational resources, and will analyse in more detail a specific social networking application entitled iSpot (http://www.ispot.org.uk/), which is part of our Biodiversity Observatory project.

Keynote Session V

Prof. Rey Junco
Lock Haven University
USA

Rey Junco is a social media scholar who investigates the impact of social technologies on college students. Rey's primary research interest is using quantitative methods to analyse the effects of social media on student psychosocial development, engagement and learning. His research has also focused on informing best practices in using social technologies to enhance learning outcomes. For instance, Rey's research has shown that technology, specifically social media like Facebook and Twitter, can be used in ways that improve engagement and academic performance. Rey has recently published papers on: the relationship between Facebook use, student engagement and learning; the academic effects of multitasking; the digital divide in cell phone ownership and use; using social media to promote civil discourse on college campuses; and how Twitter can be used for academic purposes in order to increase student engagement and improve grades. Rey is currently a Professor in the Department of Academic Development and Counseling and the Director of Disability Services at Lock Haven University where he teaches first-year seminar courses for undergraduates and graduate courses on social media in higher education. He is also a Lab Mentor at the Harvard Berkman Center's Youth and Media Lab. Further information about Rey can be found on his personal website.

Keynote address
Social media and student engagement

The construct of student engagement is empirically linked to the desired outcomes of a college education. As such, educators are interested in how they can increase student engagement in both academic and co-curricular activities. While student engagement has been studied for over three decades, only recently have researchers started to connect online behaviours with engagement in the real world. The most recent research has focused on how social media like Facebook and Twitter can impact student engagement and how these tools can be integrated in order to improve student outcomes. For instance, Junco found that when students use Facebook in natural ways, they will use it in ways that are both positively and negatively related to their engagement (2012a) as well as their grades (2012b); however, if social media are integrated into courses and students are encouraged to use them in educationally relevant ways, then engagement and learning are improved (Junco et al. 2011). This talk will focus on these issues and will present the latest research on how social media are related to student engagement.

Prof. John G Hedberg

Macquarie University
Australia

Prof. John Hedberg holds the Millennium Innovations Chair of ICT and Education in the School of Education at Macquarie University, Australia. He has taught postgraduate courses on cognitive strategies, interface design for learning, and implementation and evaluation of technology-based learning. He has also taught strategic planning for technology implementation in schools and has written on policy aspects of new technologies in education. He has been keynote speaker at numerous conferences on educational technologies in Canada, the United States, Singapore, Malaysia, China, Europe, and many states in Australia.

Prof. Hedberg recently completed several research projects about the use of ICTs in learning. These have included: the use of mobile phones as social software tools in orienteering tasks in biology and geography, using cognitive tools to develop mathematics problem solving repertoire; Internet literacy, and the production of multi-modal artefacts in history and science. With the Macquarie ICT Innovations Centre and his graduate students he is exploring digital representation and early mathematics learning with robots; in particular he is interested in 2D and 3D representations and how younger learners generate mental models of the differences between these.

Prof. Hedberg currently serves on the Editorial Advisory Boards of the journals *Research in Learning Technologies* (formerly *ALT-J*), *Distance Education* and *Educational Media International*. He served as the President of the International Council for Educational Media, a UNESCO affiliate, between 2006 and 2008 and continues to serve on the Executive of the Council.

Keynote address

Digital technology and designing for a pedagogy of student engagement

Educators from all levels of the educational enterprise — early childhood to higher education — are faced with some interesting challenges when choosing technologies and learning activities that generate an active engagement of learners in their learning. Modern digital technologies support many cherished educational goals. With Web 2.0, we have tools that encourage collaboration and participation in creating an artefact, and increasingly we have the tools to produce a digital video sequence that explains a procedure or presents a perspective on a real-world problem. Modern tools enable the student to change the form of representation, but unless the learning task chosen by the teacher results in a learning activity that engages the learner, then meaningful learning is not likely to occur. Often digital technologies are inherently engaging but if the challenge in achieving an outcome is not desired, supported by prior learning or careful scaffolding, then the result will be limited if achieved at all. This presentation will explore some tools and learning challenges that have been designed in collaboration with learners demonstrating their ideas about a learning task challenge. These digital tools include: virtual worlds, mobile learning contexts that include real world challenges and data collection, augmented reality that overlays real-world issues with data from online databases, and changing the learning strategies to be fun and challenging in designing game-based learning.

Pre-Conference Workshop I

Designing an inquiry-based approach to blended learning

Dr Norm Vaughan
Mount Royal University
Canada

According to a survey conducted a few years ago, over 80% of higher education institutions in the United States offer courses in a blended format (Arabasz, Boggs & Baker, 2003) and the projection is that in the near future over 80% of *all* courses in higher education will be blended. In the words of Gladwell (2000), we have gone over the 'tipping point'; blended learning has become an educational epidemic. The three societal forces that have converged (the perfect wave) to drive this epidemic are technology, financial constraints and quality concerns. The blended approaches to learning that have arisen to address these forces have led to three major non-contradictory affordances — effectiveness, efficiency and convenience. The result is an era of engagement and sustainable communities of inquiry. Blended learning has become the dominant paradigm in 21st-century higher education. In a recent edition of the *Journal of Asynchronous Learning Networks* dedicated to blended learning, Laumakis, Graham & Dziuban (2009) state 'the impact of blended learning is potentially monumental — permanently changing how students interact with higher education' (p. 86).

An inquiry-based approach to learning is based on John Dewey's (1933) philosophy that education begins with the curiosity of the learner. This workshop will provide participants with a 'hands-on' opportunity to design inquiry-based learning activities that engage students and align with the learning outcomes for a blended course or programme.

Pre-Conference Workshop II

Introduction to open peer collaboration models for open textbook development

Dr Wayne Mackintosh
The Open Education Resource (OER)
Foundation

Wayne Mackintosh, Director of the OER Foundation, founder of WikiEducator and member of the international Advisory Board of the Wikimedia Foundation which oversees the popular Wikipedia website, will lead a hands-on practical workshop on open peer collaboration models for the design and development of open textbooks.

The workshop will commence with a critical reflection on the concept of open educational resources with particular reference to the practical implications for collaborative and open textbook development. Participants will consider the challenges and complexities of copyright and alternatives for open licensing to address these issues.

The workshop will use a wiki authoring model as an example to highlight important considerations which open textbook developers need to consider. This hands-on approach will enable participants to interrogate red herrings, myths and the limitations of transparent and open peer collaboration approaches for the development of teaching resources. The workshop will also illustrate the potential of automated recongfiguration of OER for alternative delivery platforms and how institutions can save cost and time in the development of reusable learning resources.

The workshop will be suitable for beginner, intermediate and advanced wiki users.

Conference Workshop I

Designing for 21st-century literacies to engage students

Prof. John G Hedberg
Macquarie University
Australia

We will discuss the new skill set required by effective 21st-century citizens in using technologies to see, construct and explore, namely:

1. play — the capacity to experiment with one's surroundings as a form of problem-solving
2. performance — the ability to adopt alternative identities for the purpose of improvisation and discovery
3. simulation — the ability to interpret and construct dynamic models of real-world processes
4. appropriation — the ability to meaningfully sample and remix media content
5. rapid task shifting — the ability to scan one's environment and shift focus as needed to salient details
6. distributed cognition — the ability to interact meaningfully with tools that expand mental capacities
7. collective intelligence — the ability to pool knowledge and compare notes to achieve a common goal
8. judgment — the ability to evaluate the reliability and credibility of different information sources
9. transmedia navigation — the ability to follow the flow of stories and information across multiple modalities
10. networking — the ability to search for, synthesize and disseminate information
11. negotiation — the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms
12. location awareness — the ability to use the new digital awareness of current and required positions.

Examples will be given on designing serious games, constructing virtual worlds and learning. This will enable participants to attempt their own interpretation of what elements make up engaging design.

Conference Workshop II

Strategies and challenges for integrating mobile learning in higher education

Prof. Mohamed Ally
Athabasca University
Canada

Because of the increasing use of mobile technology by students, educational institutions must integrate mobile technology into the learning process. This will provide flexibility for students to learn and will allow educators to use the capabilities of mobile technology to enhance the teaching process. Since students are mobile, they can use mobile technology to learn from anywhere and at anytime. This workshop will discuss strategies that educational institutions can use to integrate mobile learning into educational delivery, identify challenges educators have to overcome to successfully integrate mobile learning, and allow participants to identify how mobile learning can be integrated into their institutions for flexible delivery.

Outcomes

- Describe the benefits of integrating mobile learning.
- Describe change theory for innovation and how people respond to change.
- Identify strategies for successful implementation of mobile learning.
- Describe challenges when implementing mobile learning.
- Describe how to overcome the challenges for implementing mobile learning.
- Describe examples of successful mobile learning initiatives.
- Analyse your educational system and suggest how mobile learning can be integrated to enhance learning.

Apple Talk

Apple Talk I

Reshaping content and engaging students: transforming school-based content with iLife and iBooks Author

Gilbert Ho and Cecilia Tsang
Apple Education Team

This session is an opportunity to experience how you can transform learning with innovative new tools for creating and deploying content. Discover amazing interactive iBooks, leverage on the world's largest online catalogue of free education content in iTunes U, and learn how to make your own interactive Multi-Touch books to attract your students.

Apple Talk II

Let's make learning visible: iPad in the student-centric classroom

Gilbert Ho and Cecilia Tsang
Apple Education Team

This workshop demonstrates how iPad can be integrated into a day-to-day local curriculum to improve learning outcomes and better address learning differences in the classroom. Participants will have hands-on practice by participating in student-centric activities, and will be guided to explore educational resources such as iTunes University, ePubs, Apps and Web tools to engage students and make learning visible.

Global and local cases will also be shared to promote the exchange of best practices.

Abstracts of Papers

An effort has been made to classify the Abstracts under the Conference sub-themes to which they primarily relate, although in some cases they obviously span more than one sub-theme.

Tree-based comparison for plagiarism detection and automatic marking of programming assignments

Sin-chun Ng, Andrew Kwok-fai Lui and Lai-shan Wong
The Open University of Hong Kong
Hong Kong SAR, China

Programming assignments are usually considered as a major assessment component of a programming course. As the number of students enrolling in programming courses has been always high, it becomes a difficult task to mark a large number of programming assignments effectively in a short period of time. Moreover, plagiarism on program codes has become a serious problem recently. Markers may not be able to locate similar scripts that they have marked before. This paper introduces an online assignment management system which allows programming assignments to be submitted online and marked effectively. The marking of programming assignments involves two processes: plagiarism detection among different submitted source codes and automatic marking of individual assignment which includes program testing on different test cases and checking across the model answer. In this paper, we propose the use of parse tree for checking the similarity between program codes. The method can be employed in plagiarism detection and automatic marking of programming assignments.

e-Assessment: a case of student-centred learning

Madeleine Tsoi and Reggie Kwan
Caritas Institute of Higher Education
Hong Kong SAR, China

There is a growing trend worldwide to adopt a student-centred learning approach as the central pedagogy at both school and university levels. Over the years, many such epithets as *self-directed learning, learner-focused learning, autonomous learning, independent learning, collaborative learning, experiential learning, etc.* have been used to define the approach and its process. This paper reports on a case of student-centred learning using an online self-regulating and diagnostic assessment system to facilitate students in a sub-degree institute in the HKSAR to undertake self-directed and self-controlled learning in English academic writing skills. It has taken the project team two years to install the system, conduct pilot study and test stringently as well as repeatedly. The system is now in full operation and feedback from the institute's student population drawn from diverse backgrounds has indicated that the system has indeed fulfilled its mission of providing a practical and convenient means of enabling students to conduct autonomous learning wherever and whenever they wish.

Emerging technologies in an RFID library for e-learning

Fan Yang
Chengdu Community University
Chengdu, China
Fengli Zhang and Jiahao Wang
University of Electronic Science and Technology of China
Chengdu, China

This paper gives an overview of existing and proposed library systems that can enhance traditional learning. It considers that emerging technologies can have open and free environments so that learning is not limited to specific environments such as schools. The paper first discusses RFID technology in a library for e-learning; and it then considers the issue of preserving security and privacy in an RFID library. In such a library, we can know exactly where teachers teach and how students learn, and can see if there was sharing of relevant information with others. However, it is necessary to defend against passive and active attacks on RFID systems, and so an RFID distance-bounding protocol for e-learning is surveyed. This topic is presented at a level of detail that is not found elsewhere in the literature.

The role of IT in enhancing the quality of student support services in open education

Hui Cai
Shenzhen Radio and TV University
Shenzhen, China
Yan Wang
Shenzhen Radio and TV University and
Kingdee International Software Group Co. Ltd.
Shenzhen, China

After more than ten years of development, the annual enrolment in the Shenzhen Radio and TV University's open education system rose from 30,000 in 1999 to 920,000 in 2010. This rapid expansion raised increasing problems related to the lack of student support services and declining student satisfaction, and improved quality in these areas is now becoming urgent. In this context, IT offers new opportunities to improve open education student support services, both academic and non-academic. This paper explores the ways in which IT can enhance the quality of student support services in terms of tangibility, reliability, responsibility, assurance and empathy. The paper also provides a case study of Shenzhen Radio and TV University to support the views expressed.

Developing the information model of e-textbooks

Wei Fu,Gui-chao Qi and Xiao-qing Gu
East China Normal University
Shanghai, China

With the development of personal digital terminals and the popularity of e-reading, many countries and organizations have initiated research into the development of e-textbooks. ISO/JTC1 SC36 has also started a new standard project on e-textbooks proposed by the authors' team. By September 2011 at the ISO/IEC JTC 1 plenary meeting in Shanghai, 35 cases of e-textbook use had been collected, which were contributed by various countries and organizations. In this paper, we first define a concept model by use-case analysis, and consider its implications for e-textbook usage within e-learning. Second, we propose the design of an e-textbook information model which aims at connecting reading and learning. This model defines the content structure and the function structure of an e-textbook. The goal of the information model is to guide the design and development of e-learning textbooks and create a new generation of e-textbooks for e-learning.

A pilot study on using public cloud to support server-side practical classes

Andrew K Lui, Kelvin K W Lee, Steven S O Choy, Kwun-tat Chan and Ka-chun Chan
The Open University of Hong Kong
Hong Kong SAR, China

This paper describes a study on the use of a public cloud service to support laboratory sessions and project work on a server-side computing course. Such courses usually require a specialized setup of hardware and software. Cloud computing, due to features such as zero capital cost, an on-demand pay-per-use payment model and elastic resource provision, can be a viable and cost-effective alternative to setting up a dedicated computer laboratory. The study has two parts: (i) an observational study on engaging a public cloud service provider to support a server-side computing course; and (ii) a comparative study on the payment model of several public cloud providers. Both the positive and negative experiences of using a public cloud service for classroom teaching are described. The cost of running laboratory activities and project work is also analysed and discussed.

The measurement of learning conceptions in web-searching

Jui Feng
Fo Guang University
Jiaosi Shiang, Yilan County, Taiwan

Meilun Shih
National Taiwan University
Taipei, Taiwan

Chia-pin Kao
Southern Taiwan University
YongKang City, Tainan County, Taiwan

This paper discusses a study aimed at developing a scale for assessing current university students' learning conceptions of web-searching. An initial pool of 20 items was developed, and then these items were tested on 407 university students in Taiwan. The final scale for assessing the learning conception of web-searching (LCWS) includes 18 items, with a reliability of 0.96. The LCWS scale may provide educators with valuable information for teaching university students systematically about how to learn from web-searching. Also, for researchers, the scale may be an effective and efficient tool for further investigation of the relationships between university students' conceptions of learning, approaches to learning, and learning outcomes on web-searching. Finally, the scale score provides students with feedback on their learning conceptions of web-searching and may enable them to be more aware of, and rethink, their web-searching situations and approaches.

Citizenship education via an online peer discussion blended learning approach: lessons learned

Khe Foon Hew and Wing Sum Cheung
National Institute of Education
Singapore

Many countries view citizenship education as one of the main obligations of formal schooling. In this paper, we describe a case study involving a Singapore primary school (two primary five classes) to foster primary school students' affective commitment to their country. We describe a blended learning approach that combined the use of an asynchronous online peer discussion forum, persuasive cases, reflection, face-to-face classroom discussions, and teacher presentations. We discuss the theoretical foundations of the blended learning approach. We share insights of the blended learning approach based on students' data (e.g., online postings, questionnaires, reflections, and interviews), as well as our own reflections. The results of our study suggested that the blended learning approach was able to instill a positive student affective commitment to their country. Finally, we discuss several important lessons learned that could inform the design of future instructional strategies in implementing blended learning for the purpose of citizenship education.

The future classroom — a multi-display learning space   P

Weidong Chen
Suzhou University of Science and Technology
Suzhou, China

Jing Gao
Suzhou Arts High School
Suzhou, China

The future classroom is a learning environment which is person- oriented and focuses on the learners' individual freedom, development and harmonious relationships with the support of ubiquitous technologies. Its design aims mainly to serve and support self-directed learning and socialize learning through the configuration of the classroom instruments and resources; and it also aims to cultivate in learners the skills necessary for the 21st century. The future classroom is a multi-display learning space, with the development of display technology and the configuration and rational use of multi-display devices. This approach may solve problems such as the display of instructional content, the exchange between group learners, and the interaction between the virtual and the real classroom.

A mobile application to enhance teaching and learning in classroom environment

Sin-chun Ng, Andrew Kwok-fai Lui and Dennis Siu-fung Tsui
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Taking attendance in a large class is not accurate and efficient. The current attendance-taking approach uses up some unnecessary time in a lesson. The administrative work of the quizzes, marking and inputting results are of much heavier workload for lecturers and tutors. As a result, there arises the concern as to whether the efficiency and effectiveness of learning in classes would be affected. This paper presents a mobile application developed for a large class to enhance teaching and learning in a face-to-face environment. The mobile application includes two major tasks – real-time attendance taking and online quiz management. The paper makes use of the mobile phone technique to reduce the time spent on non-academic duties. It is intended to improve the efficiency and the effectiveness of face-to-face teaching in a classroom environment.

Design and development of multi-subject item bank in an m-learning system

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As mobile technology changes day-by-day, learning through mobile phones is becoming fashionable and also proves to be feasible. Our research team is working on developing an m-learning system and has recently finished part of the development of a Short Messaging Service (SMS). This paper introduces the design and the development of another part of the m-learning system which is a multi-subject item bank. Bearing in mind the unavoidable weaknesses of the mobile phone, such as the limited capacity of the screen and the complex operations required of users, this research avoids some main shortcomings of the mobile phone and constructs an item bank with choice questions as the main method and combines with the advantages of multidisciplinary, detailed analysis, random sequencing options and mistake collection based on the Browser/Server(B/S) mode.

Designing a preliminary e-textbook

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Recently, ISO/JTC1 SC36 initiated a project on an e-textbook which was proposed by the authors' team. Fundamental to this project is an information model, and further studies will be based on it. This paper aims to illustrate the information model of an e-textbook by describing a practical case in our ongoing work. The process of designing an English e-textbook for Grade 6 is presented to explain the main steps in the element and function structure design; and typical sections of 'Look and learn' and 'Look, learn and number' are demonstrated. The information model suggests a practical design mode for future e-textbook practice.

Research on the learner guide mechanism in the virtual experiment platform of physics based on the theory of user-centered design

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This paper applies the theory of user-centered design to the learner guide mechanism in facilitating the development of the virtual experiment platform. In order to form an appropriate guide mechanism, it incorporates the findings from the learner activity models and learner-centered principles into an improved learners' mental model. According to the guide mechanism, three detailed guiding suggestions have been put forward to make the learning atmosphere more friendly and efficient.

Analysis of experts' and novices' thinking process in program debugging

P

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Program debugging is a complex cognitive process. Since it is an important step in programming, debug training not only improves learner's programming capacity, but also their problem solving capacity. For the purpose of this paper, three C language experts were invited; novices were represented by three third-year students. All six persons participated in a think-aloud experiment, where every person was given two programs to debug; each program was set up to contain three error types, i.e. syntax, semantic and logic.

The results showed that experts have a better grasp of feedback from the compiler. On the other hand, experts and novices have similar thinking process in syntax debugging. In semantic debugging, experts are able to comprehend the output results, but novices are rather confused; as to logic debugging, novices are less developed in logical structuring. This paper suggests student's debugging capacity must be reinforced in programming courses, particularly in semantic and logic debugging.

Using asynchronous online discussion in blended learning environments: supporting three different student learning outcomes

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A report on the online learning experience of students in accounting course

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Blended learning is being utilized increasingly by many universities. Although this trend is expected to increase, it is important to note that successful blended learning does not occur automatically. Maximizing success in a blended learning environment requires careful consideration of the pedagogy, the application of the technologies used, and the facilitation of interaction among students. This paper reports three empirical studies that applied asynchronous online discussion in various blended learning environments and examines how it can support the following outcomes in student learning: (a) ill-structured problem-solving; (b) Chinese reading and writing; and (c) English argumentative writing. These case studies are described briefly, and their main findings are highlighted. The results will be very useful to other university faculty members who are interested in using asynchronous online discussion in their own blended learning environments.

Blended learning, the incorporation of different learning environments, is widely adopted in higher education institutions. The term usually refers to the combination of traditional face-to-face classroom methods with more modern computer-mediated activities. Through a blended learning approach, online learning plays an important role in the learning process which allows learning to happen at anytime, anywhere. In this paper, we review the use of online learning in an accounting course in our institution. The online courseware is launched in our new e-learning platform, SOUL 2.0. A survey is conducted to investigate the online learning experience of students and their perception of various online course materials. The results show that most of the students were satisfied with the provision of online course materials which made their study more flexible and accessible.

An effective tool to support teaching and learning of modular programming

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Computer programming is one fundamental skill to cover in a computer science program. A number of computer aided teaching/learning systems have been developed to support effective teaching and learning of computer programming. An electronic submission system, which allows students to submit, compile and test their computer programs, has been developed. Surprisingly, we find the system an effective tool to help students to learn modular programming. It addresses a number of issues in teaching and learning of computer programming. The system allows students to work on individual modules of a programming project at same time. Hence, the software can be developed much faster. It also helps students to develop teamwork skills. Moreover, the system helps students to develop a number of good practices in modular programming. Questionnaire survey and focus group study results show that the system has a number of advantages. The system is highly evaluated by the students.

An e-learning system for piano instruction

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This paper exhibits an e-learning system that combines hardware and software in order to build a platform for piano instruction. Firstly, we set the e-learning system in contrast with traditional teaching. Then we analyse the composition of the piano instruction system, and describe its construction and functions. Then we put forward a new measure for learning piano. Finally, we discuss the evaluation of the system based on learner's behavior and cognition to complete the system, and show the superiority in the teaching by e-learning system and the revolution for piano instruction.

The design and development of a digital intelligent teaching platform based on physical principles

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The development of modern educational technology supports a widening of teaching methods, both theoretically and technically. This paper introduces the preliminary design and development of a digital intelligent platform based on physical principles for teaching engineering product development. Using multimedia and Internet technology, we have designed the platform in the Visual Studio 2008 environment, using C++ as the development language.

First, we explain the purpose of the design, and then illustrate the ways in which it can improve the common teaching modes in traditional courses on engineering and product design. Such a development can display physical principles effectively and provide valuable support for learning. It not only stimulates student interest, but can also facilitate their ability for independent innovation. Overall, the paper is concerned with teaching models, user interaction and ways of solving the problems. So far, we have produced a platform frame and developed some models of physical principles; and we now look forward to applying the mature platform in the teaching of engineering and product design.

Student engagement: meanings, approaches and ideas for educators interested in ICT

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This paper attempts to offer a brief review of literature on the construct of student engagement. It summarizes key aspects of how student engagement has been interpreted and researched. It explains how the construct has been anatomised into components of academic, behavioural, emotional and cognitive engagement. By delineating the relationship between engagement and learning outcomes as well as environmental and student factors in play, it outlines the versatility and value of the construct. It also highlights the niche role of information and communication technology in facilitating and enhancing student engagement.

Engaging students through the use of ICT: the causal mechanisms involved

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Student engagement is emerging as a key focus in higher education, as a growing body of literature has pointed to its positive effects on student success and development, including satisfaction, persistence, social engagement and academic achievement. While most of the research discussed has assumed that the use of information and communication technology (ICT) promotes student engagement, little attention has been given to the causal mechanisms involved.

In this paper, it is argued that — no matter how well intentioned — simply embedding ICT in practices in and outside the classroom without a grounded concept of 'student engagement' is insufficient to engage students. Student engagement can be operationalized, validated and improved. The Biographic Narrative Interpretative Method (BNIM) was adopted to investigate the extent to which the use of ICT succeeds in increasing students' investment of their time, effort and other resources in their learning. Cross-case analysis of students' learning experiences using ICT at a Hong Kong university reveals a number of such potential key drivers of engagement: students' perceived usefulness of learning tasks, their view of intelligence and study competence, intellectual excitement, social networks, and a sense of pride and empowerment. Drawing on the findings of this study, the paper proposes a student engagement framework with identified key drivers, which hopefully can shed some light on the casual mechanisms relating ICT integration into learning and student engagement. The paper ends with a call for research to examine further the relative strength of each driver in different contexts to inform policy-makers, ICT designers and front-line teaching professionals about the ways of maximizing the engagement effects of new pedagogical practices with ICT.

Creating engaging experiences through a blended media innovation

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Various teaching practices have evolved from recent research on learning environments involving digital media. However, how different digital media (e.g. ebooks or virtual manipulatives) can be infused with the right pedagogy for effective teaching and learning is still a daunting task. The paper seeks to address this issue by applying a 4C framework (Tsoi, 2010) as a pedagogical tool for blending innovatively enriched content, such as info-graphics, and appropriate digital media, such as interactive ebooks, with digital elements. The outcome is a blended media innovation that provides engaging experiences for the teacher and learner.

The 4C framework represents a cognitive cycle of four phases, viz. concept awareness, concept construction, concept internalization and concept application. The concept awareness phase involves providing activities (face-to-face or online) for learners to gain an awareness of the concept; and the activities will be familiar to the learners so that they can make connections to their existing knowledge. In the concept construction phase, the learners have to discover the essential features of the concept. Next, the concept internalization phase provides opportunities for the learners to link up or connect all the critical features of the concept as a whole to see its relevance and connections. Finally, the concept application phase is concerned with applying the concept for the meaningful transfer of knowledge. An illustrative example will be shown of how this blended media innovation is used for engaging experiences through (a) visualization and manipulation and (b) collaborative, social and self-directed learning anchored in a holistic blended learning approach. The implications in the context of a digital environment are also discussed.

Diversity in student engagement: how students behave, feel and learn in a distance course

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Research on how students engage in their studies provides useful information for planning and improving study programmes and courses. Student engagement plays a central role in educational quality (Kuh 2009; Hagel, Carr and Delin 2012), with strong empirical support relating it to important educational outcomes (Appleton, Christensen and Furlong 2008).

One effective way of uncovering how students engage in learning is to examine closely what they do, feel and mentally process in their course of study. This paper discusses an ongoing project which investigates in depth the experiences of distance learning students. It focuses on how six students engaged in a distance learning course with an online learning platform. Details of their behavioural, emotional and cognitive engagement were collected through weekly interviews with the students over a semester. The results suggest that the students approached the course with varied motivations and engaged in learning in highly diverse ways. Most participants went about their learning in ways which differed substantially from the intended approach to study. For example, the amount of time they spent on studying the course was irregular, with their engagement appearing to be affected deeply by the workload in their full-time jobs or other study commitments, assignment deadlines and tutorial times. Also, age emerged as one key factor for engagement. Older students tended to show a learning-goal orientation (a tendency to learn the course concepts and skills) rather than a performance orientation (a tendency to focus on obtaining a pass score for the course). The students showed little interest in any online discussion of course content. They were given both a printed and an online version of the study material, but they seldom used the online version. The traditional printed version is still the main tool for self-study, with the online version just being used for convenience and higher efficiency in completing assignments. In addition, in contrast to the general belief, there was no sign that younger students had a greater tendency to use their mobile devices to study the course material. The implications of the findings for pedagogical design are also discussed.

A virtual experiment and metacognition: an online experiment on measuring acceleration

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The learning process in the virtual experiment is divided into three levels: a cognitive experience layer to promote the learners' ability to memorize, identify, visualize and integrate; a behavioural experience layer involving initiative, and application and practice; and a conscious and emotional experience layer that promotes learners' values and emotional judgement, as well as a sense of self-fulfilment. The experimental system contains a number of cognitive activities which are supported by a metacognitive model of virtual experiments. An increasing number of educational virtual experiment systems are now running on the Internet. However, most learners master only the knowledge itself, ignoring the process of learning, and so it is necessary to emphasize the importance of metacognition.

Student teachers' perception of the VBL system to enhance technology integration competencies

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The purpose of this study was to investigate student teachers' perceptions of the video-based case learning (VBL) system to enhance their technology integration competencies. A self-developed questionnaire was used to gather student teachers' perceptions regarding the system's main components and overall benefits. At the end of student teaching, ten participants were invited to complete the questionnaires and follow-up interviews. These results indicate that the VBL system combining video cases, guiding questions and discussion forums was able to promote in-depth thinking about technology integration in instruction. Moreover, student teachers perceived an increase in field observing skills. However, a higher increase in their abilities, willingness, and confidence of using technology in the teaching field did not appear. Furthermore, student teachers expressed a high expectation of video quality and efficient use of the system. Accordingly, recommendations and further research were provided so as to maximize the system's benefits.

An intercultural teaching experience — the DAAD-supported summer school in China

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In September 2011, a Summer School was held by Hochschule Darmstadt, Germany, at Xi´an University of Posts and Telecommunications, China. The Summer School was founded by DAAD, the German Academic Exchange Service, which is the largest funding organization in the world supporting the international exchange of students and scholars. This paper describes the course of the Summer School, the challenges of this intercultural teaching experience and the ICT tools to be used for future Summer Schools to improve the process. The results of a written evaluation and the prospective use of a learning platform are discussed.

The design and implementation of a PPT template based on an SMS modem to make peer instruction easy and popular

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Building a multi-factor decision-making system to stimulate teachers' internal motivation   P

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In PI, the progress of any given class depends on the outcome of real-time student feedback on multiple-choice questions through using a 'clicker'. However, the price and durability of the clicker has prevented the use of PI from becoming prevalent — Short Message Service (SMS) is cheaper and has wide popularity. A personal mobile phone can be used as a 'clicker' to send responses, with an SMS modem connected to a PC as the receiving centre. An SMS modem uses a WAVECOM chip and is controlled by the PC through Dynamic Link Liberate (DLL). We use VBA in a PPT template to connect to the modem, to read information in the modem and show the results. The single SIM card for the USB SMS modem is cheap, small in size and easy to install. To engage students in learning, teachers can design multiple-choice questions in our template and implement a dynamic lecture according to the students' answers.

Teachers are the key element affecting teaching quality in China. Stimulating their internal motivation is an important means for enhancing teaching quality, and this issue has attracted considerable attention from educational decision-makers. This paper mainly describes the management practice in No.3 Middle School in Nanzhuang Town, Chancheng District, Foshan City, Guangdong Province. The school has built a multi-factor decision-making management system, the core of which is a multiple subject teacher assessment system which integrates goal-driven and task-driven methods. It provides an effective way to promote the internal motivation of teachers by using information technology.

Using a Facebook closed-group as part of an online course

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This paper presents the results of a survey among international students after using a Facebook closed-group as part of an online course. We posted educational materials of one session from the online course: "Developing teachers' critical thinking through educational designing" on Facebook and integrated it with the educational platform Moodle. The students studied the course materials in six sessions during the semester. We specifically created a Facebook closed-group to offer students the option to use not only PCs, but also mobile devices to access the online course. After completing of the course, we asked the students (n = 10) to evaluate the use of Facebook in learning. The findings showed that students indicate imperfections in the organization of course materials on Facebook. Nevertheless, the majority of students noted the positive role of Facebook in the development of relationships between each other.

A group blog for ESL teaching in a Hong Kong post-secondary institution: features analysis and comparison

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Blogging was originally employed for social interaction, but many language instructors have used this platform to encourage students to practise writing. The present study compares three existing group blogs — Mahara, Blogger and WordPress — and generates some common features of group blogs based on them. These commonly cited features have been incorporated into the design of a group blog for a group of sub-degree level students in a higher education institution in Hong Kong. The purpose of this group blog is to encourage students to use English as a second language in writing and reading during their spare time. In the group blog prototype, eight categories related to different writing genres have been created to boost students' motivation for sharing their ideas, viewpoints and emotions with other blog readers and/or writers on their chosen categories. Further research on students' perceptions of the preliminary design of this group blog will be undertaken.

Social network sites and e-learning adoption

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The use of social network sites (SNSs), and the improvements gained from new technologies through e-learning platforms are two of the main topics that are currently discussed in the area of higher education. Both issues converge if what is being considered is the hypothetical effect that SNS use can have on e-learning adoption. Given the fact that there is no general consensus at this point, the present work addresses the moderating role that SNS use could potentially have on e-learning adoption. Our findings suggest that SNS use has a moderating effect on the relationship between the intention to use the platform and its posited antecedents. Furthermore, among these three antecedents only effort expectancy and social influence have a significant effect on the intention to use an e-learning platform.

Learning management system: Japanese student perceptions and expectations

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Recently leaning management systems (LMS) have been widely used in Japanese tertiary institutions as tools to assist students to submit assignments and communicate with each other online. The system is also effective for the instructor in customizing materials, assessing student accomplishments, and recording their participation. Although the technical aspects and efficacy of LMS have been extensively discussed, little research has been conducted regarding how novice computer users perceive the use of this technology. This study examines Japanese undergraduate students' perceptions of using LMS in different educational settings. In addition, it looks at the benefits and drawbacks of LMS for their language studies. Based on a year-long empirical data study of the students' use of LMS in blended learning courses, their perceptions and expectations have been examined. The results suggest that the students' perceived benefits and drawbacks with LMS are different depending on individual students' ideas of and attitudes towards education.

An enhanced e-assessment system for the acquisition of Putonghua

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This paper presents the design and development of a Putonghua e-Assessment System for the sub-degree students at Caritas Institute of Higher Education and Caritas Bianchi College of Careers. A software prototype of Computerized Adaptive Testing (CAT) has been developed to promote assessment for learning and enhance students' Putonghua self-learning capacity. It is to help individual students identify the various approaches available to learn "how to learn" through self-directed, self-controlled and, to some extent, customized "assessment" opportunities. An adaptive algorithm based on the one-Parameter Logistics Model from Item Response Theory (IRT) is utilized in this software prototype, which could select questions for each user based upon their ability as measured during the test. Further learning support is obtainable within the system, including immediate feedback such as detailed study guides with full explanations and illustrative examples, and follow-up exercises for self-improvement. A full usability test and evaluation will be conducted in the coming academic year. In the first part of this paper, the background of developing the system will be discussed, followed by a brief introduction of improvements and new features of the new version. Then, further development of the system will be presented with conclusions.

Open access textbooks: opportunities and challenges

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*e*Volution from conventional textbooks to open textbooks: a way out for Hong Kong

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Different from traditional textbooks, open access textbooks are by nature open education resources that are free to use and can be delivered in electronic or printed form. Not only that the development of open access textbooks is cost-effective, the continuous revisions and updates can be made efficiently. Open access textbooks also allow easy adaptation to cater for the students' learning differences. However, for the successful adoption of open access textbooks, a number of challenges need to be overcome, such as on soliciting contributors of textbook contents, assuring the quality of textbooks, and establishing a culture of sharing education resources. This paper investigates these opportunities and challenges, and proposes a solution for the implementation and sustainable development of open access textbooks in Hong Kong. Some overseas successful projects are referenced and discussed. It is believed that open access textbooks would effectively resolve the pressing issues of high price and frequent revisions of textbooks, while offering many pedagogical advantages.

This paper attempts to first briefly review the difficulties concerning textbooks that Hong Kong faces. Summarising issues into five problems — high and increasing prices, inflexibility in revision, weight, bundling with teachers' materials, and costly marketing means, it outlines measures the government has been taking to tackle them and concludes that there has been little success in solving the problems. By explaining that Hong Kong is not the only place confronted with this worldwide bugbear, it highlights that, to be free from the constraints of conventional textbooks, we may capitalise on information and communication technology to take us to a new paradigm and that open textbooks are a promising solution to the aforementioned burdens and constraints.

Overcoming copyright hurdles in the development of learning materials in the digital era

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Developing teaching or course materials poses many challenges, and copyright is one of them. This paper provides teachers and developers of learning materials with an overview of what they should know about copyright, and provides suggestions on ways to overcome copyright hurdles. Of importance is an understanding of the clauses on fair use and fair dealing under copyright law, as these legally permit reproduction of copyrighted material for certain purposes and circumstances without the need to apply for permission.

This paper also notes a changing copyright landscape and a growing culture of resource-sharing among the educational community. Teachers or developers of learning materials can now consider another option — accessing free digital learning materials which can be used, adapted and shared, without any copyright fees. The final part of the paper explores the use of some types of free online materials: works produced under the Creative Commons licence and public domain materials.

Pedagogical and technological considerations in the design and development of open e-textbooks

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Print materials are portable, have permanence and are inexpensive to produce. They are still an important medium in teaching and learning when they appear as textbooks. However, contemporary theories argue that textbooks only 'transmit' knowledge to readers in a linear fashion. Also, readers often do not actively interact with a textbook and, without such a process, meaningful learning will not occur. With the shift in the paradigm of teaching and learning from a teacher-centred to a student-centred approach, textbooks are now used only as a type of learning resource; and teachers design teaching and learning activities which help students to construct their learning via such learning resources.

Due to the rapid development of ICTs and new media in education, digital contents have become important supplementary materials in teaching and learning (Hill 2010). In line with the wide range of resources being made available via the Internet, many textbooks are being converted into e-textbooks. The emergence of innovative computer devices — especially mobile devices such as tablet PCs and e-book readers — enables easy and ubiquitous access to e-resources, and makes learning more individualized, interactive, communicative and connective. Students are seen to be moving from printed textbooks to e-resources and e-textbooks (Fredrick 2011; Nicholas and Lewis 2010).

Contemporary e-textbooks can support individualization in the learning process (Sun, Flores and Tanguma 2012). Important design elements of effective e-textbooks include: language usage, conceptual organization, spatial arrangement and levels of interaction which facilitate teaching and learning. An example is used to illustrate the inclusion of these design elements.

One crucial feature which teachers desire in an e-textbook is the opportunity for users to select only appropriate parts of a book and supplement it with other learning resources, some of which may be their own work. Due to the very restrictive copyright and technological constraints, this is often not easily achievable (Ovadia 2011; Polanka 2010). Only open e-textbooks, which allow teachers to reuse, revise and remix the content, are able to satisfy such teacher needs. For such developments, there are associated pedagogical, quality assurance and technological considerations. This paper includes some examples of open e-textbooks to illustrate how these aspects are addressed.

A study on the effectiveness of open educational resources: the logistics management specialism at Shenzhen RTVU

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The construction of open educational resources is at the heart of teaching quality. Mainly by using quantitative analysis and on-site investigation of students in the Logistics Management specialism at Shenzhen and other Radio and TV universities, this paper analyses the differential effectiveness of various course resources — textbooks, IP courseware, on-line resources and CAI courseware. It concludes with suggestions for the way forward based on the findings.

Primary schools

A school-based e-textbook and e-learning platform for Key Stage 1 (P1–P3) students: a pilot project

HHCKLA Buddhist Wong Cho Sum School

Our school aims to develop e-learning teaching kits through professional development programmes with teachers and other activities such as meetings and workshops. When the whole project is completed, a total of 36 e-learning kits in English Language for Key Stage 1 (P1–P3) will be produced, thus expanding the quantity and quality of existing e-learning resources. The e-learning curriculum design will follow the Hong Kong Curriculum Development Council's English Language Curriculum Guide. It will focus on the development of students' interpersonal relationships, knowledge-building and experience. It will also help to develop the nine generic skills, and enable students to display appropriate values and attitudes. The design of the curriculum will be based on the text types in the Curriculum Guide. Teaching content involving poems, rhymes, fables and fairy tales will be designed for students for more comprehensive learning. The e-learning resource kits will also involve intervention and enrichment elements, so that students can re-do the online exercises to achieve the basic requirements of the course. In addition, there is an intervention and enrichment programme to help students with special educational needs. Besides the online e-learning materials, a PDF formatted e-textbook for each unit will also be designed which will enable us to print the PDF files as textbooks to enable students and parents to revise at home, or when their computers fail.

Our school will also invite a research centre to carry out the project research work. The centre will provide professional services in formative evaluation and summative assessment, the purpose being to collect data to improve teaching methods and enhance the effectiveness of learning and teaching in English Language throughout the project. The methods of evaluation will include:

- teacher self-assessment;
- classroom observation;
- after-class interviews;
- a learning effectiveness test; and
- a questionnaire.

Finally, the e-learning kits can replace the traditional English textbooks. However, e-learning will not replace ordinary classroom teaching completely — in fact, traditional classroom teaching can co-exist with e-learning. With the growing popularity of e-learning, the traditional role of teachers will also change as they become facilitators in teaching and learning. The students are expected to be active learners, and their individual needs will be catered for. The classroom teaching in some areas, such as group communication and team activities, still provides more than adequate training in an e-learning environment. We believe that, if e-learning and traditional classroom teaching can be adopted appropriately and flexibly, the effectiveness of learning and teaching will be greatly enhanced.

Primary schools

A school network for enhancing student information literacy across the curriculum

PLK Chee Jing Yin Primary School

From the academic year 2000, Po Leung Kuk Chee Jing Yin Primary School became EDB's Centre of Excellence (CoE) on IT in Education, with the aim of providing territory-wide specialized assistance and consultation to all primary and secondary schools — thus acting in the dual role of a forerunner and facilitator in steering information technology development. Complementing the advances in 'The Third Strategy on Information Technology in Education' and fostering the sustainable development of information literacy, we applied successfully to the EDB's 'Pilot scheme on E-learning in Schools' in 2011. In this scheme, we have joined partner schools, community resources and business sectors to formulate a teaching network for piloting new technologies and pedagogies in using IT.

In the three-year project, which focuses primarily on the P4–P6 curriculum, two satellite schools — Po Leung Kuk Riverain Primary School and S K H Kei Fook Primary School —are amalgamated to design collaboratively English and Mathematics pedagogies infused with information literacy elements. It is foreseeable that two sets of information literacy curriculum resources will be produced for each subject per year, with a total of 12 sets being created in three years. With the provision of tertiary institutes' professional expertise, we are making an effort to outline the framework of an information literacy curriculum and appropriate assessment criteria; and the practices which are developed can then be referred to by the academic circle.

A mutual active learning system for students with dyslexia, and new e-learning facilities

Sam Shui Natives Association Lau Pun Cheung School

Starwish Digital Language Laboratory is an interactive learning system for students with dyslexia which offers them an environment filled with sensory images and words to study. The system provides students with literacy and sensory training through progressive multi-sensory learning involving various interactive games. The system also helps them to overcome obstacles they face in reading and writing. It expands the depth and width of its games in the following three categories: 'multi-sensory teaching', 'thought training' and 'word recognition teaching'. The system covers Chinese character rules, characteristics and structures, and focuses on words and their pronunciation. Through various meaningful interactive games, students can develop their perceptual functions, strengthen their visual and auditory attention, and sharpen their thinking ability. This project will develop new e-learning facilities and classroom teaching through visual aids.

Primary schools

Learning with a tablet PC

CCC Heep Woh Primary School, Cheung Sha Wan

Six CCC primary schools have participated in an EDB e-learning pilot scheme since September 2011. The main objectives of our project are to enhance the self-learning of students and cater for their learning differences.

We have tried to use a tablet PC to improve learning in two subjects: teaching Chinese using Putonghua in P1 and General Studies in P4. Our project also emphasizes the introduction of a new teaching strategy, so our teachers have held meetings and lesson demonstrations every month. In addition, we cooperate with various publishers to develop IT programs and school-based learning materials. The results of our projects are positive and encouraging, and worth sharing with other schools at this stage.

Using ICT in conducting programmes for gifted learners

CCC Kei Wa Primary School, Kowloon Tong

From the experience of developing a school-based curriculum, e-learning resources have been found to be very constructive in motivating learning and in creating a more engaging learning atmosphere. Consequently, three pull-out programmes for gifted learners centred around creative writing and reporting were designed: I'm Creative, I'm a News Writer and I'm a News Anchor. The use of ICT was considered to be a crucial element to enhance students' knowledge of English outside the classroom and beyond the syllabus.

The e-learning platform developed for the three pull-out programmes offers interactive games and teaching resources which can be accessed not only by participants but by all the students in school. The flexibility of e-learning resources allows students to learn more at their own pace. The online writing and uploading of broadcast videos are administered by participants. Parallel to the development of the e-learning platform, multimedia and interactive newspapers are issued quarterly, which all students can read and watch; they can also rate the best pieces of work. In this way the platform fosters peer-learning.

Secondary schools

Collaborative learning platform for Liberal Studies

Christian Alliance S W Chan Memorial College

The Hong Kong government changed its educational system to the New Senior Secondary (NSS) Academic Structure and Curriculum in the school year 2009–10. Under this new structure, all students have the opportunity to complete six years in primary, three years in junior secondary and three years in senior secondary education. All senior secondary students have to take four core subjects, viz. Chinese Language, English Language, Mathematics and Liberal Studies. The introduction of Liberal Studies enables students to: broaden their knowledge base; enhance their social, national and global awareness; and think critically from multiple perspectives.

The learning and teaching of Liberal Studies is structured around enquiry into a range of contemporary and perennial issues related to six modules — 'Personal Development and Interpersonal Relationships', 'Hong Kong Today', 'Modern China', 'Globalization', 'Public Health' and 'Energy Technology and the Environment'. Instead of using textbooks to promote student learning, Liberal Studies teachers employ a wide range of teaching materials including books, journals, news reports, research reports and official documents. The preparation of high-quality curriculum resources is very challenging for Liberal Studies teachers, and so a school cluster has been formed to share their materials in an e-learning platform. The platform also provides students with an assessment and feedback system. The aim of this session is to report, and share views on, the platform design and its development.

From do you think to what do you think: using interactive technology to facilitate collaborative knowledge construction

United Christian College, Kowloon East

The teachers have changed from a 'talk and chalk' approach to promoting students' thinking and encouraging them to ask questions in the classroom. This sharing session is about how teachers are using interactive technology in the Chinese History classroom. Through the Learning Management System Lesson Plan design tool, teachers will make use of multimedia learning content and design various kinds of discussion questions, so that students become more involved in classroom interaction.

Global learning for life — multi-city, real-time distance learning with Chongqing, Foshan, Taipei and Hong Kong

Wai-choi Lam
St Bonaventure Catholic Primary School
Pak-shing Au
St Bonaventure College and High School
Hong Kong SAR, China

We believe distance learning provides knowledge-sharing opportunities, leading to effective teaching and learning. It motivates students to become more independent and empowers them to learn by themselves through the Internet. As one of the pioneers of the distance learning project, we feel that our mission is to broaden our students' vision by organizing real-time sharing with students from different cities.

In this session, we share our real-time distance learning experience over the last few years by:

- explaining how the distance classroom was set up;
- discussing how the distance class and teaching was managed; and
- demonstrating how our real-time 'distance class' with four cities works, and the dynamics that a host would need to consider to hold a successful distance class.

We also consider briefly some of the difficulties schools faced in this project.

For details on the 'Establishment of Distance Learning Classroom for teaching and learning', please visit: http://www.jsit.net/dis-classroom/.

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