

ICOIE 2018 International Conference on Open and Innovative Education



PROGRAMME & ABSTRACTS OF PAPERS

4-6 July 2018

Jockey Club Campus
The Open University of Hong Kong
Hong Kong SAR

Organizer:



香港公開大學
THE OPEN UNIVERSITY
OF HONG KONG



開放及創新教育研究所
Institute for Research in
Open and Innovative Education

Contents

Message from the President, The Open University of Hong Kong	2
Message from the Chair, Conference Organizing Committee	3
Committees	4
About the Conference	5
Map and Venue Floor Plan	6
Programme	
3 July 2018	8
4 July 2018	9
5 July 2018	10
6 July 2018	11
Pre-conference Workshops / Distinguished Professor Lectures	20
Keynote Sessions	22
Conference Workshops / Technology Application Sharing	26
Innovative Practices Award Competition	27
Innovative Education Expo	29
Abstracts of Papers	32
Acknowledgements	84

The organizer reserves the right to amend the programme as and when necessary.

Message from the President, The Open University of Hong Kong



Prof. Yuk-Shan Wong
President
The Open University of Hong Kong

Welcome to the Open University of Hong Kong (OUHK)! This is the fifth year in which the OUHK has organized this international event — the 2018 International Conference on Open and Innovative Education. Given its success in past years, I am certain that you will all have a fruitful and valuable experience this year.

The field of open and innovative education is evolving. New ideas and technologies emerge from time to time which enrich and transform this field, such as learning analytics, mobile learning, blended learning and virtual reality. These developments are having an impact, on the learning and teaching, administration and management, and policy-making of virtually all education institutions. As educational providers, we are facing a pressing need to keep ourselves abreast of these developments and identify ways of making our educational delivery more open and innovative.

The OUHK — which offers education in the face-to-face, distance learning and e-learning modes of study from undergraduate to postgraduate levels — is well aware of the importance of such developments. Through this Conference, it has brought together experts, researchers and educators from educational institutions across the globe to provide a platform for exchanging ideas and sharing research findings and good practices on open and innovative education. I am sure that your contributions at this Conference will benefit researchers, practitioners and your communities.

I encourage you all to make use of this opportunity to interact with each other, build professional networks and develop new collaborative activities with local and overseas participants, as well as with our Distinguished Professors and keynote speakers who are experts in their respective fields.

I would like to express my gratitude to the Hong Kong Pei Hua Education Foundation and the Wu Jieh Yee Charitable Foundation for their generous donations to this Conference and sponsorship for delegates who require it. I hope that this valuable support will continue in future, and more grants will be received from other funding bodies for delegates.

Finally, I would like to thank the ICOIE 2018 Organizing Committee for its enthusiastic work. I also thank you for participating and wish you a rewarding time in exploring Hong Kong.

Message from the Chair, Conference Organizing Committee



Dr K C Li
Chair
Conference Organizing Committee
Director of Research
The Open University of Hong Kong

I am very pleased to welcome you to the 2018 International Conference on Open and Innovative Education. This signature event of the Open University of Hong Kong (OUHK) and its Institute for Research in Open and Innovative Education (IROPINE) has become a remarkable regional event. Our number of participants have been increasing steadily year by year. We have 20% more paper submissions this year and have also received 20% more registrations than last year, with papers from 22 countries. Some prominent areas covered include open education, student engagement, learning design, innovations in pedagogy, educational technology, curriculum development, and higher education management. I am sure that the diversity of ideas and experiences from our local and overseas participants will result in fruitful academic exchange and collaboration.

We are honoured to have renowned scholars to deliver keynote speeches on topics including open educational resources, online learning, learning analytics, the use of social media in education, innovative teaching and massive open online courses. They include Professor Asha Kanwar from the Commonwealth of Learning; Professor Dragan Gašević from Monash University; Dr Vanessa Dennen from Florida State University; and Professor Demetrios Sampson from the University of Piraeus. We also have Distinguished Professors of the OUHK's IROPINE to deliver Pre-Conference Workshops. They include Professor Alan Tait from the UK Open University and Professor Paul Gibbs from the University of Middlesex. In addition, there is an Innovative Education Expo coordinated by Dr Eva Tsang from the OUHK; a workshop by Dr Ricky Ng from the Vocational Training Council, Hong Kong; a workshop by Professor Asha Kanwar; and Technology Application Sharing sessions by Dr Ka Fai Wong from the OUHK. These sessions, together with the 92 papers to be presented at this conference, will certainly enrich our knowledge and provide many insights.

To encourage and recognize outstanding research studies and exemplary professional practices, this Conference will continue to present one Best Paper Award and a number of Excellent Paper Awards, as well as the Innovative Practices Award. I look forward to exciting papers and practices from the awardees.

I am obligated to the Organizing Committee and Programme Committee for their diligent efforts devoted to this Conference. I also wish to express my sincere gratitude to the President and Vice President (Academic) of the OUHK for their support, as well as to colleagues of the Research Office and Educational Technology and Publishing Unit for making this Conference a success. I wish you all a fruitful Conference.

Committees

Organizing Committee

Chair:	Dr K C LI	The Open University of Hong Kong
Vice-chair:	Dr Eva Y M TSANG	The Open University of Hong Kong
Members:	Dr Samuel P M CHOI	The Open University of Hong Kong
	Dr Franklin S S LAM	The Open University of Hong Kong
	Prof. Andrew K F LUI	The Open University of Hong Kong
	Dr C W TAM	The Open University of Hong Kong
	Dr William K W TANG	The Open University of Hong Kong
	Prof. Philips F L WANG	The Open University of Hong Kong
	Prof. Robin R W YANG	The Open University of Hong Kong
	Dr K S YUEN	The Open University of Hong Kong

Programme Committee

Chair:	Dr K C LI	The Open University of Hong Kong, China
Vice-chair:	Dr Eva Y M TSANG	The Open University of Hong Kong, China
Members:	Dr Ishan Sudeera ABEYWARDENA	Commonwealth of Learning, Canada
	Prof. Mohamed ALLY	Athabasca University, Canada
	Prof. Patricia ARINTO	University of the Philippines Open University, Philippines
	Prof. Melinda BANDALARIA	University of the Philippines Open University, Philippines
	Prof. Phalachandra BHANDIGADI	Wawasan Open University, Malaysia
	Dr Alan BRUCE	Universal Learning Systems, Ireland
	Prof. Li CHEN	Beijing Normal University, China
	Dr Samuel P M CHOI	The Open University of Hong Kong, China
	Dr Daryono DARYONO	Universitas Terbuka, Indonesia
	Prof. Shane DAWSON	University of South Australia, Australia
	Dr Giuliana DETTORI	Istituto di Tecnologie Didattiche del CNR, Italy
	Prof. Bob FOX	The University of New South Wales, Australia
	Prof. Dragan GAŠEVIĆ	Monash University, Australia
	Dr Juvy Lizette GERVACIO	University of the Philippines Open University, Philippines
	Dr Anatoliy GRUZD	Ryerson University, Canada
	Prof. Gwo-Jen HWANG	National Taiwan University, Taiwan
	Prof. Pedro ISAIAS	The University of Queensland, Australia
	Dr Baljit KAUR	The Open University of Hong Kong, China
	Dr Hiroshi KAWAHARA	Cyber University, Japan
	Dr Bowon KIM	Korea National Open University, Korea
	Prof. Siu Cheung KONG	The Education University of Hong Kong, China
	Prof. Agnes KUKULSKA-HULME	The Open University, United Kingdom
	Dr Woo Tai KWAN	Open University of Malaysia, Malaysia
	Dr Franklin S S LAM	The Open University of Hong Kong, China
	Dr Simon C LAM	The Hong Kong Polytechnic University, China
	Prof. Nancy LAW	The University of Hong Kong, China
	Dr Mei Kuen LI	The Open University of Hong Kong, China
	Dr Shuang LI	Beijing Normal University, China
	Prof. Andrew K F LUI	The Open University of Hong Kong, China
	Dr Zahid MAJEED	Allama Iqbal Open University, Pakistan
	Dr Farideh MASHAYEKH	Pedagogy.Ir, Iran
	Prof. Rory MCGREAL	Athabasca University, Canada
	Dr Yosuke MORIMOTO	The Open University of Japan, Japan
	Prof. Kiyoshi NAKABAYASHI	Chiba Institute of Technology, Japan
	Dr Matthew PISTILLI	Iowa State University, USA
	Dr Kristanti PUSPITASARI	Universitas Terbuka, Indonesia
	Dr Rizwan SALEEM	Virtual University of Pakistan, Pakistan
	Dr Jean SALUDADEZ	University of the Philippines Open University, Philippines
	Dr C W TAM	The Open University of Hong Kong, China
	Dr William K W TANG	The Open University of Hong Kong, China
	Dr Anuchai THEERAROUNGCHAISRI	Chulalongkorn University, Thailand
	Prof. Norman VAUGHAN	Mount Royal University, Canada
	Prof. Philips F L WANG	The Open University of Hong Kong, China
	Prof. Bebo WHITE	SLAC National Accelerator Laboratory, United States
	Mr Alex J W WONG	The Open University of Hong Kong, China
	Dr Billy Tak-Ming WONG	The Open University of Hong Kong, China
	Dr Wendy Wing Chi WONG	The Open University of Hong Kong, China
	Prof. Tsuneo YAMADA	The Open University of Japan, Japan
	Prof. Robin R W YANG	The Open University of Hong Kong, China
	Dr K S YUEN	The Open University of Hong Kong, China
	Dr Muhammad ZAHEER	Virtual University of Pakistan, Pakistan

About the Conference

The Open University of Hong Kong (OUHK) has been actively organizing and co-organizing international events to promote and facilitate academic sharing in open and innovative education for more than a decade. In 2014, we started a new annual conference series — International Conference on Open and Flexible Education (ICOFE). Building on the successes of the conference series, it was renamed International Conference on Open and Innovative Education (ICOIE) in 2017.

Openness and innovation are major trends in contemporary education, influencing the whole spectrum of education institutions across the globe. Technological advancement and breakthroughs are bringing about a paradigm shift in contemporary education. Modes of learning and teaching are becoming more open and innovative in terms of time, space, curriculum contents, organization, pedagogical methods, infrastructure and requirements. This change does not only happen in open universities (as well as open courses such as MOOCs of conventional institutions, but also regular courses of conventional tertiary institutions and schools. With this background, the OUHK has organized the annual conferences on open and innovative education with the following aims:

- provide a platform for sharing research, practices and views relevant to open and innovative education;
- facilitate networking and cross-institutional collaboration among researchers and educators in fields of educational innovation and/or openness; and
- promote open and innovative education to enhance educational quality and achievements.

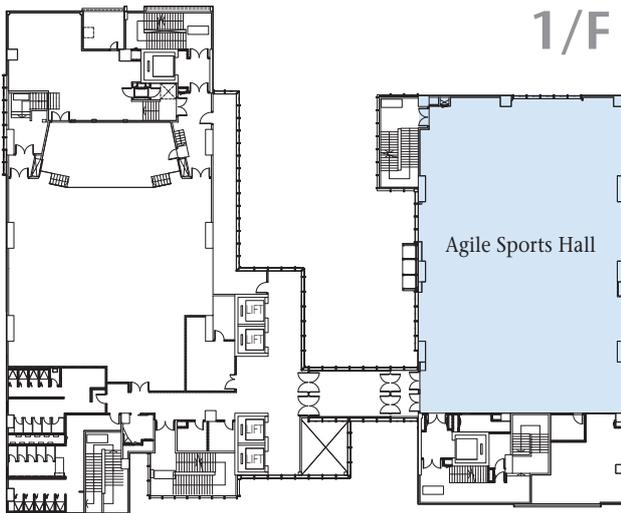
Themes of conference papers include the following:

- 1 Pedagogical innovations;
- 2 Innovations in educational technology;
- 3 Innovations in curriculum development;
- 4 Mobile and ubiquitous learning;
- 5 Open education;
- 6 Engaging students and learning design;
- 7 Social media and technology-mediated learning communities;
- 8 Open educational resources and MOOCs;
- 9 Academic/Learning analytics;
- 10 Innovative approaches to higher education management;
- 11 Virtual learning; and
- 12 Other topics relevant to the conference.

Jockey Club Campus, The Open University of Hong Kong

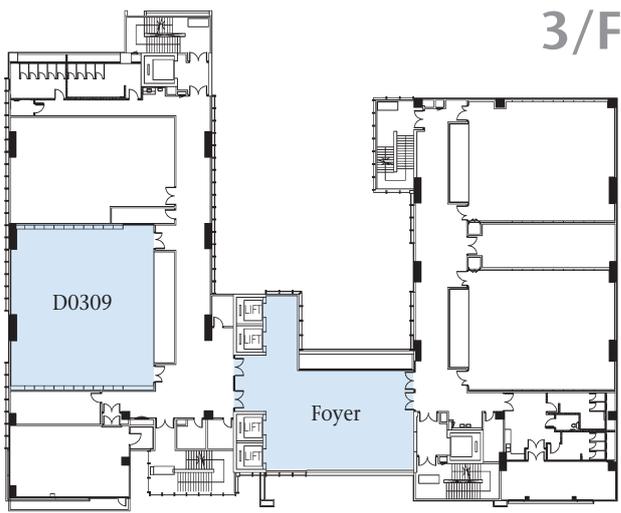


 Wi-Fi Internet access is available throughout the OUHK campus.
Wi-Fi Username: WIFI2018 Password: OUHK2018



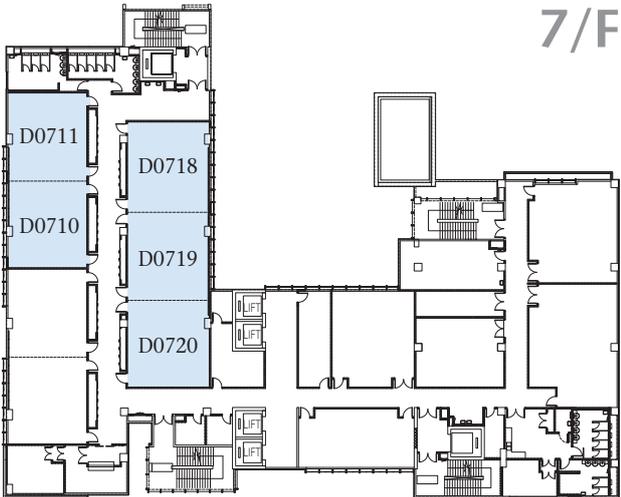
Agile Sports Hall (1/F, JCC)

- Registration
- Opening Ceremony
- Keynote Sessions
- Coffee, refreshments and networking
- Lunches
- Dinner
- Innovative Education Expo
- Closing Ceremony



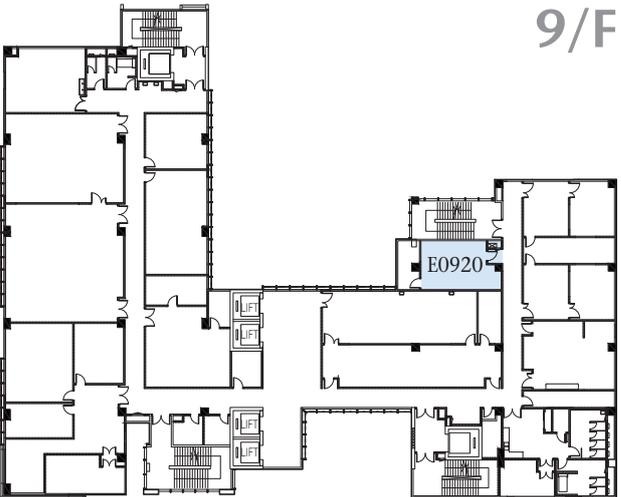
Foyer, D0309 (3/F, JCC)

- Pre-conference Registration
- Pre-conference Workshops / Distinguished Professor Lectures
- Coffee, refreshments and networking



D0710, D0711, D0718, D0719, D0720 (7/F, JCC)

- Parallel Paper Presentation Sessions
- Conference Workshops
- Presentations on Innovative Practices



Clinical Nursing Education Centre (9/F, JCC)

- Technology Application Sharing Sessions



Pre-conference Event

15:00–15:30	Registration	Foyer, D0309, 3/F
15:30–16:30	Pre-conference Workshop I / Distinguished Professor Lecture I Innovative Supervision Practices for Modern Doctoral Programme Speaker Prof. Paul Gibbs Professor of Department of Education Director of Education Research The University of Middlesex <i>Please refer to p.20 for details.</i>	D0309, 3/F
16:30–17:00	Registration and Refreshments	Foyer, D0309, 3/F
17:00–18:00	Pre-conference Workshop II / Distinguished Professor Lecture II MOOCs: The Unintended Consequences Speaker Prof. Alan Tait Emeritus Professor of Distance Education and Development The Open University of the United Kingdom <i>Please refer to p.21 for details.</i>	D0309, 3/F

Programme



13:30–14:30	Registration	Agile Sports Hall, 1/F
14:30–15:00	<p>Opening Ceremony</p> <p>Welcoming Remarks Prof. Reggie Kwan Vice President (Academic) The Open University of Hong Kong</p> <p>Opening Address Dr Kam Cheong Li Chair, Organizing Committee</p>	Agile Sports Hall, 1/F
15:00–16:00	<p>Keynote Session I</p> <p>Global Trends in OER — What is the Future?</p> <p>Speaker Prof. Asha S. Kanwar President and Chief Executive Officer Commonwealth of Learning <i>Please refer to p.22 for details.</i></p>	Agile Sports Hall, 1/F
16:00–16:30	Coffee, refreshments and networking	Agile Sports Hall, 1/F
16:30–18:00	<p>Conference Workshop I</p> <p>A New Dimension of Learning: Development of Effective Pedagogical Practice and a Cross-institutional Online Sharing Platform</p> <p>Speaker Dr Ricky Ng Head of the Centre for Learning and Teaching Vocational Training Council <i>Please refer to p.26 for details.</i></p>	D0720, 7/F
	<p>Technology Application Sharing Session I and II</p> <p>Educational Technologies for Nursing Programmes</p> <p>Speaker Dr Ka Fai Wong Associate Professor School of Nursing and Health Studies The Open University of Hong Kong <i>Please refer to p.27 for details.</i></p>	Clinical Nursing Education Centre, 9/F
	<p>Parallel Paper Presentation Session I</p> <p><i>Please refer to p.12 for details.</i></p>	D0710, D0711, D0718, D0719, 7/F
18:00–19:00	Welcome Dinner	Agile Sports Hall, 1/F

Highlighted sessions are events taking place in parallel. They are substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China. (UGC/IDS16/15)

Programme



09:00–09:30	Registration	Agile Sports Hall, 1/F
09:30–11:10	Parallel Paper Presentation Session II <i>Please refer to p.13 for details.</i>	D0710, D0711, D0718, D0720, 7/F
11:10–11:30	Coffee, refreshments and networking	Agile Sports Hall, 1/F
11:30–12:30	Keynote Session II Wicket Problem!? Towards Policy for Learning Analytics Speaker Prof. Dragan Gašević Professor of Learning Analytics Co-Director of Education Futures Research Centre Faculty of Education, Monash University Professor of Learning Analytics School of Informatics, University of Edinburgh <i>Please refer to p.23 for details.</i>	Agile Sports Hall, 1/F
12:30–13:30	Lunch	Agile Sports Hall, 1/F
13:30–14:30	Innovative Education Expo	Agile Sports Hall, 1/F
14:30–16:00	Conference Workshop II Development, Use and Assessment of OER Speaker Prof. Asha S. Kanwar President and Chief Executive Officer Commonwealth of Learning <i>Please refer to p.26 for details.</i>	D0720, 7/F
	Parallel Paper Presentation Session III <i>Please refer to p.15 for details.</i>	D0710, D0711, D0718, D0719, 7/F
16:00–16:30	Coffee, refreshments and networking	Agile Sports Hall, 1/F
16:30–17:30	Parallel Paper Presentation Session IV <i>Please refer to p.16 for details.</i>	D0710, D0711, D0718, 7/F
17:30–18:30	Keynote Session III Social Media Knowledge Activities: Opportunities for Learning across Formal and Informal Settings Speaker Dr Vanessa Dennen Professor of Instructional Systems and Learning Technologies Department of Educational Psychology and Learning Systems Florida State University <i>Please refer to p.24 for details.</i>	Agile Sports Hall, 1/F

Programme



09:00–09:30	Registration	Agile Sports Hall, 1/F
09:30–11:00	Parallel Paper Presentation Session V <i>Please refer to p.17 for details.</i>	D0710, D0711, D0718, D0719, 7/F
11:00–11:30	Coffee, refreshments and networking	Agile Sports Hall, 1/F
11:30–13:00	Parallel Paper Presentation Session VI <i>Please refer to p.18 for details.</i>	D0710, D0711, D0718, D0719, 7/F
13:00–14:00	Lunch	Agile Sports Hall, 1/F
14:00–15:00	Keynote Session IV	Agile Sports Hall, 1/F

Educational Data Analytics for Supporting Teaching and Learning in Online Education

Speaker

Prof. Demetrios Sampson

Professor of Learning Technologies

Department of Digital Systems

University of Piraeus

Professor of Learning Technologies

School of Education

Curtin University

Please refer to p.25 for details.

15:00–15:30	Closing Ceremony with Award Presentation	Agile Sports Hall, 1/F
	Closing Remarks	
	Prof. Reggie Kwan	
	Vice President (Academic)	
	The Open University of Hong Kong	
	Closing Address	
	Dr Eva Tsang	
	Vice-chair, Organizing Committee	

Highlighted sessions are events taking place in parallel. They are substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China. (UGC/IDS16/15)

Parallel Paper Presentation Session I

D0711	D0718	D0719
<p>Engaging students and learning design</p>	<p>Open educational resources and MOOCs</p>	<p>Mobile and ubiquitous learning</p>
<p>Developing Presentation Boot Camps for Undergraduate Students Peter Carter, Etsuko Kakimoto, Jeff Anderson and Kaori Miura Kyushu Sangyo University Fukuoka, Japan p.57</p>	<p>Opportunities and Challenges in the Use of Open Education Resources in an Open and Distance Learning Mode of Education Seema Kalra Indira Gandhi National Open University New Delhi, India p.68</p>	<p>Mobile Learning as a Necessary Feature of Open and Innovative Education Frances Di Lauro The University of Sydney Sydney, Australia p.46</p>
<p>Transforming Low Academic Achievers through Learning Design Pamela M. H. Kwok PolyU Hong Kong Community College Hong Kong SAR, China Paula Hodgson The Chinese University of Hong Kong Hong Kong SAR, China p.57</p>	<p>A Study of the MOOCs Course in a Multi-level Model and Blended Learning with a Flipped Classroom Effect Wei-Te Liu National Yunlin University of Science and Technology Douliu, Taiwan p.68</p>	<p>Digital Coffee Telling: Designing a Coffee e-Learning Narrative to Promote Coffee Growing in the Philippines Emely Amoloza University of the Philippines Open University Los Baños, the Philippines Anna Lozada Marinduque State College Marinduque, the Philippines Crina Tanongon University of the Philippines Cebu Cebu City, the Philippines p.46</p>
<p>How Do Japanese Students Evaluate Video Lectures in Commercial E-Learning Systems? Yoko Hirata and Yoshihiro Hirata Hokkai-Gakuen University Sapporo, Japan p.58</p>	<p>The Use of Open Educational Resources in Pre-school Education: An ALMS Analysis Sara Lai Hong Kong Baptist University Hong Kong SAR, China p.70</p>	<p>The Effect of Mobile Learning Implementation Experience on High School Teachers' Self-efficacy in Promoting the PYOD Strategy Chiu-Lin Lai and Gwo-Jen Hwang National Taiwan University of Science and Technology Taipei, Taiwan Hui-Chun Chu Soochow University Taipei, Taiwan p.47</p>
<p>Determinants of Satisfaction with the Learning Materials Associated with Tutorials, Exams and Grades Maximus Gorky Sembiring Universitas Terbuka Tangerang, Indonesia p.59</p>	<p>Virtual learning</p> <p>Exploring the Use of Multimedia As Assessment Tools in E-learning Luisa Gelisan University of the Philippines Open University Los Baños, Laguna, the Philippines p.80</p>	<p>Effect of MALL on College English Vocabulary Learning Zhenzhen Chen Peking University and Beijing University of Posts and Telecommunications Beijing, China Jiyou Jia Peking University Beijing, China p.47</p> <p>Planning to Implement Change: Strategic Pillars to Lead Mobile Learning in the Secondary School Environment Sofia Moya and Mar Camacho Universitat Rovira i Virgili Tarragona, Spain p.48</p>

Parallel Paper Presentation Session II

D0711	D0718	D0720
Innovations in curriculum development	Open educational resources and MOOCs	Pedagogical innovations
<p>Open Learning and Student Leadership: A Case Study Rebecca Johnke The University of Sydney Sydney, Australia</p> <p style="text-align: right;">p.42</p>	<p>Traditional Higher Education Engineering versus Vocational and Professional Education and Training: What Can we Learn from Each Other? Dave Towey and James Walker University of Nottingham Ningbo China Ningbo, China Ricky Yuk-kwan Ng Vocational Training Council Hong Kong SAR, China</p> <p style="text-align: right;">p.66</p>	<p>A SWOT Analysis of Blending Immersive Virtual Reality in the Classroom Paula Hodgson, Vivian W.Y. Lee, Chung-Shing Chan, Agnes Fong, Cindi S.Y. Tang and Sonia W.L. Cheung The Chinese University of Hong Kong Hong Kong SAR, China</p> <p style="text-align: right;">p.34</p>
<p>Mainstreaming Digital Learning to Improve the Quality of Student Learning Experiences Bob Fox and Mark King University of New South Wales Sydney, Australia</p> <p style="text-align: right;">p.42</p>	<p>UPOU Commons: Experiences in Developing and Sustaining an OER Repository Joane Serrano University of the Philippines Open University Los Baños, Laguna, the Philippines</p> <p style="text-align: right;">p.67</p>	<p>Innovations in educational technology</p> <p>Multitudes of Problem-solving Exercises and Worked Examples for the Study of Algorithms in an Operating Systems Course</p>
<p>The Implement of an Interactive Application on CAI for the Level B Technician Skill Certificate of Telecommunication Outside Plant Wei-Chih Hsu, Yu-Hsing Yeh and Tsung-Yuan Chou National Kaohsiung University of Science and Technology Kaohsiung, Taiwan</p> <p style="text-align: right;">p.45</p>	<p>Important Features of MOOCs as Perceived by Learners Melinda dela Peña Bandalaria University of the Philippines Open University Los Baños, Laguna, the Philippines</p> <p style="text-align: right;">p.67</p>	<p>Andrew Kwok Fai Lui, Maria Hiu Man Poon and Raymond Man Hong Wong The Open University of Hong Kong Hong Kong SAR, China</p> <p style="text-align: right;">p.38</p>
<p>Flipping the Traditional Classroom: Assessing the Impact of an Innovative Curriculum for Language Learning Curtis Shu-Sun Chu National Chung Cheng University Chiayi, Taiwan Lifen Wang and Ching-Fen Wu National Chiayi University Chiayi, Taiwan</p> <p style="text-align: right;">p.43</p>		<p>Social media and technology-mediated learning communities</p> <p>Using 'Kahoot' in Law School: Differentiated Instruction for Working Adults with Diverse Learning Abilities Daniel Seah Singapore University of Social Sciences Singapore</p> <p style="text-align: right;">p.65</p>

Continued on p.14

Parallel Paper Presentation Session II		
D0711	D0718	D0720
Innovations in curriculum development	Innovative approaches to higher education management	Open educational resources and MOOCs
<p>Essential Components in Designing a Nursing Simulation-based Education: A Qualitative Study Baljit Kaur, Suet Lai Wong, Yat Kwan Alan Tsang, Pui Han Alison Cheung, Hoi Man Jackie Chan, Ching Yee Lam, Ying Ting Mavis Tong, Yee Chong Caroline Charm, Ka Yee Cora Lo and Ka Man Carmen Fung The Open University of Hong Kong Hong Kong SAR, China p.44</p>	<p>A Comparison of Staff Professional Development Programmes at the First Sino-foreign University in Mainland China and the Largest Vocational and Professional Education and Training (VPET) Institution in Hong Kong James Walker and Dave Towey University of Nottingham Ningbo China Ningbo, China Ricky Yuk-kwan Ng Vocational Training Council Hong Kong SAR, China p.76</p>	<p>Sentiment Analysis of Student Opinions in Large-scale Open Online Courses Using Automatic Machine Learning Techniques: What does it tell us? Khe Foon Hew, Chen Qiao, Yumeng Sun and Ying Tang The University of Hong Kong Hong Kong SAR, China p.66</p>
<p>Room Escape: Gamification as a Novel Educational Outreach Tool Chia-huei Tseng Tohoku University Sendai, Japan p.44</p>		<p>Virtual learning</p> <p>Effects of Head-mounted Display on Reading a Drawing: A Case Study of Orthographic Projection Hsi-Hsun Yang and Jia-Hao Chen National Yunlin University of Science and Technology Yunlin, Taiwan p.80</p>
		<p>A Design and Evaluation Framework for Mixed Reality Learning Environments in Sports Education Jonathan Foo Nanyang Technological University Singapore June Tay Singapore University of Social Sciences Singapore p.82</p>

Parallel Paper Presentation Session III

D0711	D0718	D0719 (Chinese Session)
Social media and technology-mediated learning communities	Open education	Innovative approaches to higher education management
<p>A Study on the Role of Social Media in Collaborative Online Learning Yujen Ho The Open University of Kaohsiung Kaohsiung, Taiwan p.63</p>	<p>Incorporating E-learning Innovation into the Delivery of Secondary Education in Developing Countries: The Case of Tanzania Francis Oscar Haule and Chika Yoshida Kobe Institute of Computing Kobe, Japan p.49</p>	<p>A Survey on the Link between College and High School Physics Teaching in the New College Entrance Examination Yanwen Yang and Helan Wu Tongji University Shanghai, China p.76</p>
<p>The Impact of Using Social Media on Adult Web-based Cooperative Learning Hsin-Ying Wu The Open University of Kaohsiung Kaohsiung, Taiwan Feng-Teng Lin Shu-Te University Kaohsiung, Taiwan p.63</p>	<p>A Study on Project Management Competency Training for New Immigrants for Community Empowerment in Kaohsiung Linhai Industrial Park I-Chan Kao, I-Hsiang Hu, Shuo Lee and Pei-Chen Chuang Open University of Kaohsiung Kaohsiung, Taiwan p.49</p>	<p>Academic/Learning analytics</p> <p>The Application of Educational Statistics in Learning Effect Evaluation of Mobile Learning Lulu Lv and NingSheng Ma Tongji University Shanghai, China p.73</p>
<p>An E-learning System for Upgrading the Smallholder Goat Farmers in Nueva Ecija, the Philippines Marife De Torres and Parsons Hail Central Luzon State University and University of the Philippines Los Baños Laguna, the Philippines p.64</p>	<p>Relationship between Emotional Intelligence and Academic Performance of UPOU Undergraduate Online Learners Margaret Jarmin Suarez University of the Philippines Open University Los Baños, the Philippines p.50</p>	<p>Virtual learning</p> <p>Does Augmented Reality Really Improve Learning Achievement? A Meta-analysis of 23 Experimental and Quasi-Experimental Studies Huiwen Ni and Yongbin Hu Jiangsu Normal University Xuzhou, China p.83</p>
<p>A Proposed E-portfolio System to Keep Study Activities for VETA Students in Tanzania Paschal Mгимwa and Yi Sun Kobe Institute of Computing Kobe, Japan p.65</p>	<p>An Analysis of the Learning Efficacy of Open University Students' Participation in 'Flipped Learning': A Case Study from the Open University of Kaohsiung I-Chan Kao, Shuo Lee and Pei-Chen Chuang Open University of Kaohsiung Kaohsiung, Taiwan p.51</p>	<p>Pedagogical innovations</p> <p>Can a Flipped Classroom Really Improve Learning Performance? A Meta-analysis of 36 Experimental and Quasi-experimental Studies Cuiru Wang and Yongbin Hu Jiangsu Normal University Xuzhou, China p.36</p>
<p>Innovative approaches to higher education management</p> <p>The Predicaments and Possible Solutions of Initial Teacher Training — based on Shanghai Yuxuan Lu Shanghai International Studies University Shanghai, China p.79</p>	<p>Accreditation of Prior Experiential Learning (APEL): An Alternative Entry Route to Higher Education in Malaysia Sheila Cheng and Heng Loke Siow Asia e University Kuala Lumpur, Malaysia p.52</p> <p>The Development and Implementation of a Distance Learning System on Documenting the Local Culture's Indigenous Political Structures in an Aeta Community in the Philippines Edmund Centeno, Edgar Bagasol Jr and Samantha Johanna Timbreza University of the Philippines Los Baños Laguna, the Philippines p.55</p>	

Parallel Paper Presentation Session IV	
D0711	D0718
Pedagogical innovations	Innovations in educational technology
<p>Teaching and Learning the Structures of Matter Using Animated Ball Origami Models Lai Yim Kok Malaysian Institute of Chemistry Kuala Lumpur, Malaysia</p> <p style="text-align: right;">p.33</p>	<p>Strategies for Enhancing Student Learning with iPads: Innovative Perspectives from EdTech Experts Zexuan Chen South China Normal University Guangzhou, China</p> <p style="text-align: right;">p.39</p>
<p>The Challenge of Innovative Assessments in E-learning Ching-ping Tzung Open University of Kaohsiung Kaohsiung, Taiwan</p> <p style="text-align: right;">p.33</p>	<p>Mining Online Learners' Profiles through the Application of Machine Learning Bing Wu Shanghai Open University Shanghai, China</p> <p style="text-align: right;">p.39</p>
<p>The Bachelor of Education (BEd) Programme: An IGNOU Experience Niradhar Dey Indira Gandhi National Open University New Delhi, India</p> <p style="text-align: right;">p.35</p>	Academic/Learning analytics
	<p>Assessing the Effectiveness of the Mobile Augmented Reality Courseware <i>Eight Planets in the Solar System</i> Jun Xiao and Shuo Cai Shanghai Open University Shanghai, China Xuejiao Li and Hui Qiao East China Normal University Shanghai, China</p> <p style="text-align: right;">p.74</p>
	<p>Learners' Attention Tendency to Information and Learning Paths in Online Learning: An Empirical Study Based on Eye Movement Su Mu, Meng Cui, Xiaojin Wang, Jinxiu Qiao and Dongmei Tang South China Normal University Guangzhou, China</p> <p style="text-align: right;">p.74</p>

Parallel Paper Presentation Session V

D0711	D0718	D0719 (Chinese Session)
Pedagogical innovations	Innovative approaches to higher education management	Engaging students and learning design
<p>Quiz Learning Modelling in the Development of Thematic Learning in Distance Education Modules Suhartono and Dewi Andriyani Universitas Terbuka Tangerang Selatan, Indonesia p.34</p>	<p>Marketing Strategy for Distance Learning Programmes at Universitas Terbuka Open University (UPBJJ-UT) in the Jambi Region Milde Wahyu and Iis Solihat Universitas Terbuka-UPBJJ Jambi Jambi City, Indonesia Iis Solihat Universitas Terbuka-UPBJJ Serang Serang, Indonesia p.77</p>	<p>Research on the Factors Influencing Adult Learners' Online Learning Behaviours: English Programme Learners from Shanghai Open University and the Open University of Hong Kong Lamei Wang Shanghai Open University Shanghai, China p.61</p>
<p>An Analysis of Action Research Studies Conducted by Teachers in the School System Dayalatha Lekamge Open University of Sri Lanka Colombo, Sri Lanka Jayani Thillakaratne Ministry of Education Battaramulla, Sri Lanka p.35</p>	<p>An Extended Use of Technology-supported and Triangulated Writing Tasks to Examine the Integration of Generic Competencies at Subject Level in Higher Education Roy Kam, S K Tang and Lydia Lee The Hong Kong Polytechnic University Hong Kong SAR, China p.78</p>	<p>利用在线学习系统开展混合式教学：一线教师的方法及其效果调查 张静蓉·张必兰及贾积有 北京大学教育学院，中国北京 p.60</p>
Innovations in educational technology	Innovations in curriculum development	From SPOC to MOOC: Innovative Exploration of Computer-assisted English Language Learning
<p>N-Trail: The Use of Mobile Augmented Reality (MAR) in Learning about Hong Kong's Nature Cheng King Nam, Lee Ho Chun, Ngan Heung and Vanessa Ng Sin-Chun The Open University of Hong Kong Hong Kong SAR, China p.40</p>	<p>Integrating Corporate Social Media Communication into the English Language Curricula Dilys Wai-mui Sung, Annie Lai-kun Choi and John Yuk-lun Ng Vocational Training Council Hong Kong SAR, China p.41</p>	<p>Yanhui Han, Yanxia Yu, Xiaoling Zhu, Zhipeng Zhang, Huashi Fu, Junyan Tian, Peitong Xu, Yiqun Fang, Wenjie Zhang and Jie Yang The Open University of China Beijing, China p.61</p>
<p>Online-based formative assessment and its impact on the summative component Nantha Kumar Subramaniam Open University Malaysia Kuala Lumpur, Malaysia p.37</p>	<p>Building Curriculum Around Perceptions of Appropriate College-level Writing in an American Community College Nathan Brian Jones Johnson County Community College Kansas, the United States p.41</p>	<p>Knowledge Modelling Map: On the Rationality of Learning Content Analysis in Instructional Design Bo Li and Kaicheng Yang Beijing Normal University Beijing, China p.62</p>
<p>Investigation of the Impact of a Flipped Classroom and Active Learning Components on Students' Learning with Reference to the Traditional Teacher-centred Approach Kim-hung Lam, Alex Wong, Ka Chai Siu, Laura Zhou and Chui Chung Hin The Hong Kong Polytechnic University Hong Kong SAR, China p.37</p>	<p>Development of a Music App to Facilitate Self-directed Learning Ivy Chia and June Tay Singapore University of Social Sciences Singapore p.43</p>	Innovative approaches to higher education management
	<p>The Use of ICT for Emergent Course Development: A Case on Networked Detection in Police Training Fugang He People's Public Security University of China Beijing, China p.45</p>	<p>The Development of a Big Data Platform for Matching Vocational Education Programmes with Job Requirements Weiyuan Zhang Beijing Normal University Beijing, China Fangxia Hu and Qingsong Xie Chongqing Radio and Television University Chongqing, China p.78</p>
		<p>The Learning Support Services Model in the Open University of China Naipeng Cui Open University of China Beijing, China p.79</p>

Parallel Paper Presentation Session VI

D0711	D0718	D0719 (Chinese Session)
Open education	Academic/Learning analytics	Open education
<p>The Relationship between Open University Teachers' Instructional Strategies and In-Service Students' Learning Outcomes I-Chan Kao, Shuo Lee, Pei-Chen Chuang Open University of Kaohsiung Kaohsiung, Taiwan p.52</p>	<p>Reinventing University in the 21st Century: The Internet, the 'New Buildings' of Universities and New Psycho-pedagogic Models Maria Amata Garito International Telematic University UNINETTUNO Rome, Italy p.71</p>	<p>A Study of a Course on Career Planning for Adult Learners Chiang Min-huang National Kaohsiung Normal University Kaohsiung, Taiwan p.51</p>
<p>Research on Factors Influencing the Implementation of E-learning in Postgraduate Programmes Nan Wang and Yuxian Xiao Beijing University of Posts and Telecommunications Beijing, China p.54</p>	<p>A Survey of Virtual Experiments in a Modern Physics Experiment Course Zhuo Chen, Kai Fang, Zhihua Zhang, Chen Ni, Ningsheng Ma and Xiaoting Shao Tongji University Shanghai, China p.72</p>	<p>开放大学在线教育发展战略评估 吴亚婕及李哲 北京开放大学，中国北京 p.54</p>
<p>Unlocking the Potential of Open Educational Resources: Where We Are Today and How We Can Address the Challenges Tianchong Wang The Chinese University of Hong Kong Hong Kong SAR, China Dave Towey University of Nottingham Ningbo China Ningbo, China p.50</p>	<p>Using Academic Analytics to Predict Performance Outcome of Students Francis Yue City University of Hong Kong Hong Kong SAR, China p.72</p>	<p>Achievements and Challenges: An Investigation of the Industrial Workers Education Programme of the OUC Xiangxu Wang Open University of China Beijing, China p.53</p>
<p>Virtual learning</p>	<p>An Online Learning Behaviour Analysis of Students with Poor Academic Performance Jiyou Jia and Jingrong Zhang Peking University Beijing, China p.73</p>	<p>Research on Supply-side Structural Reform of Open and Distance Education for Rural Areas in China Based on the Learner Characteristics of the 'One College Graduate per Village Programme' Li Guangde, Zhang Zhijun, Fu Jinfeng and Zhao Yanfei The Open University of China Beijing, China p.56</p>
<p>Safety Awareness and Firefighting Skills Training through Virtual Reality Yujia Tian, Chiu Yin Fan, Yu Ho Leung and Sin-Chun Ng The Open University of Hong Kong Hong Kong SAR, China p.81</p>	<p>Calibration of a Scale for Exploring the Learning Environment of Undergraduate Physics Laboratories Gregory P. Thomas The University of Alberta Edmonton, Alberta, Canada p.71</p>	<p>Social media and technology-mediated learning communities</p> <p>An Empirical Study on Knowledge-building Based on Problem Discovery in Teachers' Online Learning Community Changcheng Wu Central China Normal University Wuhan, China p.64</p>
<p>Enhancing Visitors' Experience of Revitalized Historic Buildings with Augmented Reality Ivan C. K. Chan, Jasmine H. Y. Ng, Alex L. Y. Ip, S.C. Ng and Andrew Lui The Open University of Hong Kong Hong Kong SAR, China p.82</p>	<p>Mobile and ubiquitous learning</p> <p>Analysis of College Students' Requirements for an E-book on Mobile Learning Jiayu Yuan, Ningsheng Ma, Kai Fang, Chen Ni and Xiaoting Shao Tongji University Shanghai, China p.48</p>	<p>Open educational resources and MOOCs</p> <p>Building Online Open Course Resources through a Learner-centred Concept: The Designers' Perspective Qun Yang and Haijian Chen Shanghai Open University Shanghai, China p.69</p>

Poster Presentation	
D0710	
Innovations in educational technology	Open education
<p>Evaluation of Nursing Students' Learning Feedback on the Implementation of VR-based Learning in Anatomy in Hong Kong</p> <p>Yvonne Hon Ling Lam, Simon Wing Lung Yau, Gary Long Hei So, Amanda Wan Yee Chan, Karen Ka Man Cheung, Isobel Hoi Ki Yeung, Victor Ming Ho Lau and Ka Fai Wong</p> <p>The Open University of Hong Kong Hong Kong SAR, China</p> <p>p.38</p>	<p>中国开放学习研究趋向分析——基于《开放学习研究》2012–2017年的统计分析</p> <p>刘春萱及吴亚婕</p> <p>北京开放大学，中国北京</p> <p>p.55</p>
Engaging students and learning design	Open educational resources and MOOCs
<p>An Interactive Flexible Blended Learning Mode in an Organic Chemistry Course</p> <p>Chui-Man Lo and Kwan-Yee Tang</p> <p>The Open University of Hong Kong Hong Kong SAR, China</p> <p>p.59</p>	<p>Research on Construction of a SPOC Instructional Model Based on ARCS and Practice in Open Education</p> <p>Yanshuang Jiang and Yong Nie</p> <p>Shaanxi Normal University Xi'an, China</p> <p>Can Cui</p> <p>Liaoning Normal University Dalian, China</p> <p>p.69</p>
<p>Improving the Laboratory Experience in Biology Course by Focusing on Critical Thinking and Experimental Skills</p> <p>Haiyan Zhu and Qunxing Ding</p> <p>Kent State University at East Liverpool Ohio, the United States</p> <p>p.60</p>	<p>Innovative approaches to higher education management</p> <p>Buddy Programme: An Educational Way for Supporting Academics</p> <p>Amy KS Lee, Windy WM Lee and Irene YF Wong, Veronica SK Lai and Linda YK Lee</p> <p>The Open University of Hong Kong Hong Kong SAR, China</p> <p>p.77</p>
<p>Enhancing Advertising Students' Performance with Competition- based Learning</p> <p>Mei King Yang</p> <p>Technological and Higher Education Institute Hong Kong SAR, China</p> <p>p.58</p>	<p>Academic/Learning analytics</p> <p>How do Learners Watch Micro-lecture Videos in Online Courses? An Analysis Based on Eye Tracking</p> <p>Meng Cui, Su Mu and Xiaojin Wang</p> <p>South China Normal University Guangzhou, China</p> <p>p.75</p>
<p>Learning about Nature by Engaging Students in Field Visits Using Mobile Apps Field Guides and Social Media Communication</p> <p>Chin Cheung Tang and Kam Chau Wu</p> <p>The Open University of Hong Kong Hong Kong SAR, China</p> <p>p.62</p>	

**Pre-conference
Workshops /
Distinguished
Professor Lectures I***



Prof. Paul Gibbs

Professor of Department of Education
Director of Education Research
The University of Middlesex

Professor Paul Gibbs founded the Centre for Education Research and Scholarship and is an Honorary Research Fellow at the University of Cyprus. He is an educator and researcher, and has supervised over 30 successful transdisciplinary professional doctorate students. He has published 20 books on topics ranging from the quality of higher education to vocationalism and higher education, and has published more than 80 academic articles. He serves on the editorial boards for seven journals and book series.

Abstract

Innovative Supervision Practices for Modern Doctoral Programme

Doctoral degrees are no longer simply a training ground for the next generation of academics. Different forms have evolved to encompass multi- and trans-disciplinary study by practitioners within their work context. The designation has also changed to include terms such as professional, industrial or practice-based PhDs or Doctorates which might be termed 'modern doctorates'.

These developments in doctoral education are driven by the contribution to knowledge exchange that these degrees can make and how they are perceived as facilitating innovation and growth within diverse sectors. There develops are important, but equally, so are the modern and innovative supervisory practices that are required for these modern doctorates. Supervision requires a number of capabilities (academic and professional) that are recognised as being beyond those needed for conventional PhD supervision such as advising and facilitation. Discussion in this session will be based on how these skills can be developed and inform best practices based on research conducted in Europe and the United States.

**Pre-conference
Workshops /
Distinguished
Professor Lectures II***



Prof. Alan Tait
Emeritus Professor of
Distance Education and Development
The Open University of
the United Kingdom

Professor Alan Tait is Emeritus Professor of Distance Education and Development at the Open University, UK, and has a long record of practice, publication and the support of professional development in distance and e-learning. He was Pro-Vice Chancellor (Academic) at the Open University UK from 2007 to 2012, and was formerly Dean of the Faculty of Education and Language Studies. He was Editor-in-Chief of the European Journal of Distance and E Learning (EURODL) from 2005 to 2013, was from 1989 to 1998 Editor of Open Learning, was President of the European Distance and E-Learning Network (EDEN) from 2007 to 2010, and Co-Director of the Cambridge International Conference on Open and Distance Learning. Professor Tait is the founding Editor-in-Chief of the Journal of Learning for Development, produced from the Commonwealth of Learning for the first time at the end of 2013. He is Visiting Professor at Aarhus University, Denmark, a senior member of St Edmunds College, University of Cambridge, and a Visiting Fellow of the Centre for Distance Education at the University of London. In 2012, Professor Tait was awarded an Honorary Doctorate by Moscow State University for Economics, Statistics and Informatics.

Professor Tait has worked widely in developing countries, and for international organisations such as UNESCO, the European Commission, the Commonwealth of Learning, and the International Extension College.

Abstract

MOOCs: The Unintended Consequences

In this lecture, the main theme will be an assessment of the unintended consequences of MOOCs on campus based teaching. The presentation is based on research carried out with academics who have produced MOOCs in the wider University of London network and reports on the impact this work has had on their teaching and research in primarily campus based programmes. The presentation will also report on the increasing variability in the use of MOOCs and their development as significant vehicles for lifelong learning.

.....
** These events are substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15).*

Keynote Session I*



Prof. Asha S. Kanwar
President and Chief Executive Officer
Commonwealth of Learning

Professor Asha Singh Kanwar, one of the world's leading advocates of learning for sustainable development, is the President and Chief Executive Officer of the Commonwealth of Learning (COL). Prior to joining COL, Professor Kanwar served briefly at UNESCO's Regional Office for Education in Africa where she came after a distinguished career at the Indira Gandhi National Open University, India.

Professor Kanwar has over 35 years of experience in teaching, research and administration. She has written, edited a dozen books and published numerous papers and articles. Her speeches and presentations are available at www.col.org.

A recipient of several awards and fellowships, Professor Kanwar received the International Council for Open and Distance Education (ICDE) Prize of Excellence and the Meritorious Service Award for outstanding contributions in open and distance education from the Asian Association of Open Universities. She has been conferred six honorary doctorates: from the Vardhman Mahaveer Open University, KK Handiqui State Open University, India; the Open University, UK; the Open University of Sri Lanka; University of Swaziland and Wawasan Open University, Malaysia.

Keynote address

Global Trends in OER — What is the Future?

In the last fifteen years, we have seen a phenomenal growth in the availability of open educational resources (OER) and many more stakeholders are now aware of the benefits and advantages of using OER. However, this awareness has not translated into the practice of opening up education. Available research on OER indicates several reasons for this. Lack of capacity among the users seems to be a significant barrier to the mainstreaming of OER. Other barriers include lack of appropriate policies, language and cultural issues and lack of OER accessible to people with disabilities. In the Anglo-American context, costs seem to be the primary driver for the use of OER. There are major initiatives in both the US and Canada to promote open textbooks for making higher education more affordable. In Asian countries such as China, India and Malaysia, OER seem to provide an opportunity for democratising education by providing access to free quality content. Large government initiatives aim to harness the intellectual capital of the best professors in premier institutions and make these available to remote and disadvantaged locations. The impact of these interventions is still not clear because of lack of research in outcomes and the link between OER and deeper learning. In developing countries, the emphasis has mostly been on resources rather than on the use of OER and how this would contribute to opening up education from its narrow academic confines to a broader perspective of lifelong learning. The education of today must equip our learners to be prepared for the uncertainties and complexities of tomorrow. Can OER contribute to create a lifelong learning environment to support the changing learning needs of the 21st century? What will be the role of technologies in the future of teaching and learning? The keynote will focus on the research on OER, challenges faced in mainstreaming OER, and technology solutions to address the volatile, uncertain, complex and ambiguous work spaces of the future through education and training.

Keynote Session II*



Prof. Dragan Gašević

Professor of Learning Analytics
Co-Director of Education Futures
Research Centre
Faculty of Education
Monash University

Professor of Learning Analytics
School of Informatics
University of Edinburgh

Professor Dragan Gašević is Professor of Learning Analytics in the Faculty of Education and Adjunct Professor in the Faculty of Information Technology at Monash University. Previously, he was a Professor and the Sir Tim O'Shea Chair in Learning Analytics and Informatics in the Moray House School of Education and the School of Informatics at the University of Edinburgh (2015-2018). He served as the immediate past president (2015-2017) of the Society for Learning Analytics Research (SoLAR) and holds several honorary appointments in Australia, Canada, Hong Kong, and USA. A computer scientist by training and skills, Professor Gašević considers himself a learning analyst who develops computational methods that can shape next-generation learning technologies and advance our understanding of self-regulated and social learning. Professor Gašević had the pleasure to serve as a founding program co-chair of the International Conference on Learning Analytics & Knowledge (LAK) in 2011 and 2012 and the Learning Analytics Summer Institute in 2013 and 2014, general chair of LAK'16, and a founding editor of the Journal of Learning Analytics (2012-2017). Professor Gašević is a (co-)author of numerous research papers and books and a frequent keynote speaker.

Keynote address

Wicket Problem!? Towards Policy for Learning Analytics

The field learning analytics is established with the promise for the education sector to embrace the use of data for decision making. There are many examples of successful use of learning analytics to enhance student experience, increase learning outcomes, and optimize learning environments. Despite much interest in learning analytics, many higher education institutions are still looking for effective ways that can enable systemic uptake. The talk will first describe some selected examples of the successful use of learning analytics in higher education. Key challenges identified to affect implementation of learning analytics will then be discussed. This will be followed with an overview of an approach to the development of institutional policy and strategy for the learning analytics implementation in higher education. The talk will be based on the findings of several international studies and will critically interrogate the role of institutional and cultural differences.

.....
* These events are substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15).

Keynote Session III



Dr Vanessa Dennen

Professor of Instructional Systems and Learning Technologies
Department of Educational Psychology and Learning Systems
Florida State University

Dr Vanessa Dennen is a Professor of Instructional Systems and Learning Technologies at Florida State University. Dr Dennen's research investigates the cognitive, motivational, and social elements of computer-mediated communication, with three major strands: (1) learner engagement in online discussion activities; (2) identity development, knowledge management, and knowledge brokering within online networks and communities of practice; and (3) ethical issues related to learning in online environments. Her research is situated in both formal and informal learning environments. She has authored more than 75 manuscripts, which have appeared in publications such as *Instructional Science*; *Distance Education*; *Computers in Human Behavior*; *Educational Research Technology & Development*, *The Handbook of Distance Education*; and *The Handbook of Research on Educational Communications and Technology*. In 2014, she taught the *Social Media for Active Learning* MOOC, and she has delivered professional development workshops and webinars internationally for instructors and instructional designers on topics such as developing online presence, social media integration in the classroom, and instructional design for active learning. Dr Dennen currently serves as Editor in Chief of *The Internet and Higher Education*, Associate Editor for *Educational Researcher*, and Chair of SIG-Instructional Technology for the American Educational Research Association.

Keynote address

Social Media Knowledge Activities: Opportunities for Learning across Formal and Informal Settings

Social media, while actively used across age groups, is known as the domain of today's youth. However, harnessing the power of social media for learning is different from using it for social purposes. Some people naturally find ways to use social media to support learning, while others struggle to see it as more than a self-indulgent or purely social medium. This presentation begins with a synthetic overview of research on social media use in learning environments. Then, after noting the opportunities and constraints of social media use in learning environments, I share how six social media knowledge activities – collect, curate, share, broker, negotiate, and create – can be used to support both formal and informal learning. For each knowledge activity, I share the pedagogical foundations of the knowledge activity and specific ways that it can be used to promote learning in and out of the classroom.

Keynote Session IV



Prof. Demetrios Sampson

Professor of Learning Technologies
Department of Digital System
University of Piraeus
Professor of Learning Technologies
School of Education
Curtin University

Professor Demetrios Sampson is a Professor at the Department of Digital Systems, University of Piraeus, Greece and at the School of Education, Curtin University, Australia, teaching and researching in the fields of Learning Technologies and Digital Learning. He is the co-author of 340 articles in scientific books, journals and conferences, and the editors of 12 books, 32 special issues in academic journals and 35 international conference proceedings. He has received 10 times Best Paper Award in International Conferences on Learning Technologies. He has been a Keynote/Invited Speaker/Lecturer in 80 International/National Conferences and/or Postgraduate Programs around the world. He has been project director, principle investigator and/or research consultant in 70 Research and Innovation projects with external funding at the range of 16 Million€. He has supervised 155 honours and postgraduate students to successful completion. He has developed and delivers the first Massive Online Open Course (MOOC) on the use of Educational Data Analytics by School Teachers (Analytics for the Classroom Teacher), offered by the edX platform (a Harvard and MIT led global initiative) which has attracted more than 9000 participants from 147 countries around the world since October 2016. He is the recipient of the IEEE Computer Society Distinguished Service Award (July 2012) and named a Golden Core Member of IEEE Computer Society in recognition of his contribution to the field of Learning Technologies. Currently he leads a European University-Industry Consortium (Learn2Analyse) aiming to promote the Educational Data Literacy for Online Education and Training Professionals and Higher Education students, co-funded by the European Commission (Erasmus+ Knowledge Alliance Program).

Keynote address

Educational Data Analytics for Supporting Teaching and Learning in Online Education

Educational Data Analytics have emerged as the means for supporting data-driven evidence based educational decisions taken at various levels (from the classroom teaching and the curriculum development to university innovation planning and policy making) and by different stakeholders (classroom teachers, instructional designers, curriculum leaders, university leaders, policy makers) aiming towards better learning outcomes. In particular at the field of Online Higher Education, Educational Data Analytics have been attributed with significant benefits for enhancing on-demand personalized educational support to individual learners as well as reflective course (re)design for achieving more engaging teaching and learning experiences as well as, more authentic and relevant assessment methods. Thus, in my keynote I will present and overview of this topic and my research program for studying Educational Data Analytics for Personalized Learning in Online Higher Education.

Conference Workshop I

A New Dimension of Learning: Development of Effective Pedagogical Practice and a Cross-institutional Online Sharing Platform

Dr Ricky Ng

Head of the Centre for Learning and Teaching
Vocational Training Council

Advancement in technology enables open, online, flexible and mobile learning. This workshop discusses the concept of 'where is learning', 'situated learning' and 'new dimension of learning'. Articulating Burden's (2015) 'third dimension of learning', the facilitator argues that the availability of technologies would generate an omniscience 'fourth dimensional' learning space that facilitates innovative pedagogical practices to enable open and flexible education so as to accommodate vocational and professional education and training's (VPET) needs. The empirical study by the authors identified and suggested a range of specific instructional strategies to derive innovative pedagogical practices. Findings also revealed that technology enhanced learning (TEL) would be the most appropriate innovative pedagogical practices to create a dimension of learning space that enable flexibility, timely responses and peer collaboration to accommodate VPET students, teachers and workplace mentors' learning and teaching needs. An online open educational resources (OER) platform and the learning packages from a Quality Enhancement Support Scheme (QESS) Project funded by Education Bureau (EDB) will also be introduced and demonstrated to the workshop participants.

Conference Workshop II*

Development, Use and Assessment of OER

Prof. Asha S. Kanwar

President and Chief Executive Officer
Commonwealth of Learning

The open educational resources (OER) movement is fast gaining traction on a global scale. However, in the global south, there is still a skills gap in terms of developing, using and assessing OER for an enriched teaching and learning experience. This workshop aims to build the capacity of the participants to address this skills gap and to promote the wider use of OER in their respective institutions.

The objectives of the workshop are to:

- Establish the need for OER and how to address the need;
- Identify barriers to mainstreaming OER and strategies to overcome them;
- Explore how to build teacher capacity in adopting and adapting OER;
- Utilize technologies for re-use and remix OER;
- Establish mechanisms for quality assurance.

Prerequisite: All participants who sign up will be required to successfully complete a two-hour online course on 'Understanding OER' before participating in the workshop.

The workshop will begin with a presentation by the facilitator summarizing the key concepts learned in the 'Understanding OER' course followed by Q&A. The next session will be group discussions on key topics related to the objectives of the workshop. Each group will then present their recommendations at a plenary session followed by closing remarks by the facilitator on the way forward. A list of relevant digital resources on these topics will be provided to each participant.

Workshop requirements: each participant is required to have a laptop or mobile device for accessing online resources during the workshop.

.....

** This event is substantially supported by a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15).*

Educational Technologies for Nursing Programmes

Dr Ka Fai Wong

Associate Professor
School of Nursing and Health Studies
The Open University of Hong Kong

In the sharing session, Dr Wong will demonstrate the educational technologies being adopted in OUHK Nursing programmes, which include applications based on virtual reality technology and mobile technology. He will discuss how these technologies have improved teaching and learning quality, as well as enable efficient remote monitoring and support of students. The audience will have the opportunity to experience some of the technologies and visit one of the teaching laboratories in the School of Nursing and Health Studies.

Innovative Practices Award Competition

Submission I

Teaching by Design (TbD) through Cognitive Tutors (CT) for Adult Learners

Subramaniam Nantha Kumar

Open University Malaysia
Kuala Lumpur, Malaysia

We have developed cognitive tutors (CTs) for the adult learners to learn Java programming language. These CTs support teaching by design (TbD) from the instructional perspective. A cognitive tutor is a tutoring system that utilizes a cognitive model to provide feedback to students as they are working through problems. CT which is able to support “learning by doing” and itself being an “expert system” allows us to implement TbD principles effectively. A cognitive tutor is a tutoring system that utilizes a cognitive model to provide feedback to students as they are working through problems. Our CTs are self-contained, interconnected and are able to initiate a learning process for a particular learning outcomes and provide feedback to students as they are working through problems. This feedback will immediately inform students of the correctness, or incorrectness, of their actions through chat conversation between the cognitive tutor and a learner. Unlike other cognitive tutors that support only few plain steps that can be completed in couple of minutes, each of our cognitive tutors are able to engage the learners’ in the “one-to-one” session of the problem-solving process for more than 1 hour. These cognitive tutors have the ability to provide context-sensitive hints and instruction to guide students towards the next steps. The cognitive tutors will start from program design, program development and ends with program execution.

Submission II

Digital Kaber Card: Developing Teaching Media Based Technology in Indonesian Marginal Schools through Optimizing the Role of Teachers Community of Teaching Media (Komed)

Nurul Aeni

Universitas Terbuka, Tangerang, Indonesia

Yosa Novia Dewi

Universitas Putra Indonesia, Kabupaten Cianjur, Indonesia

Yulya Srinovita

Makmal Pendidikan, Bogor, Indonesia

Media and methodology used in a learning process is one of the key success in the process itself. However, due to the limited access, facilities, and teachers' competence in designing own teaching materials, teachers seem not to perform their best capacity in teaching. This condition frequently appear in marginal schools. Thus, the learning process does not run maximally. It, therefore, surrounds the establishment of Teachers Community of Teaching Media (KOMED). KOMED is a community made to facilitate teachers to develop their teaching competence. KOMED activities consist of designing teaching media, research and training for teachers from marginal schools. One of technology-based teaching media produced by KOMED is digital game KaBer Card. The teaching media developed in 2017 is done through several stages; brainstorming ideas, production, reliability, improvement from expert and the implementation process. The reliability test was conducted in 2017 to primary school in Bogor consisting of 42 students, 30 teachers, 12 experts. The data collection and data analysis were using quantitative and qualitative method. The research shows that the students give positive evaluation to this teaching media either from the material and use, presentation, benefit or modules with the average score for 96% (very proper). Meanwhile, teacher evaluation to KaBer Card Digital Game is on the proper criteria (79%). The finding also shows that KaBer Card Digital Game enhance effective learning process, stimulate students' learning interest and motivation as well as increasing students' knowledge in suffixes. It can be concluded that learning idea packaged in form of application can stimulate students to try something new.

Submission III

Room Escape: an integrated milestone for university education

Tseng Chia-huei

Tohoku University

Sendai, Japan

One major goal of higher education is to prepare students to integrate knowledge and transfer it to future life and work-related challenges. However, this is usually a wishful thinking as the majority of university curriculum nowadays is still module-based. To fill in this gap, I designed and implemented an integrated milestone educational program to engage and empower university students in educational outreach activities in a format called "Room Escape (RE)". In RE, participating students design a big-scale interactive game called "Room Escape," aiming to educate the general public on participating students' major subjects (e.g. psychology, engineering, and etc). Different from museum exhibition or public lectures, RE is an adventurous game that requires players to apply teamwork, communication, and delegation as well as critical thinking, attention to detail, and lateral thinking to accomplish a specific goal (usually escape from the room) within limited time frame. In the process of taking charge of this type of educational outreach, students are given a rare opportunity to (1) integrate academic knowledge, (2) communicate professional contents in laymen terms, (3) piece fragmental information into a coherent story line, (4) and enhance the educational experience in a gamification environment. In addition, with the assistance of supervisors and schools, students are able to work with media and potential donors/sponsors to negotiate and secure resources. This educational format was tested locally in Hong Kong (2014), Taiwan (2015), and extended into an international curriculum (2017) where students from multiple Asian countries gathered together and hosted all together 783 international visitors during an academic conference. The added element of international collaboration and cultural competency are valuable for university students who will become our future leaders in the region.

Innovative Education Expo

Date: 5 July 2018
Time: 13:30 – 14:30
Venue: Agile Sports Hall, 1/E,
 Jockey Club Campus,
 The Open University of
 Hong Kong,
 Ho Man Tin, Kowloon

The Innovative Education Expo is one of the featured activities at this year's ICOIE. The Expo aims to provide a platform for local tertiary institutions to demonstrate and showcase their new innovative education projects. It also allows delegates from both local and overseas institutions to gain a better understanding of some of the current projects being developed or implemented by local institutions, and facilitates the exchange of ideas and experiences. These innovative education projects include virtual reality, knowledge exchange, MOOCs, online learning platforms, blended learning, and mobile learning.

Participating institutions and their projects

Project and institution	Description
<p>1 Virtual Reality for Environment Impact Assessment: A Flipping Approach</p> <p>http://www.cityu.edu.hk/vrwqm/</p>  <p>City University of Hong Kong</p>	<p>The flipped classroom approach was applied to a final-year environmental impact assessment course with support from a cross-university project funded by the University Grants Committee. As pre-class learning activities, the students took a virtual reality (VR) field trip individually to Fung Yuen Village, a vital site for water quality monitoring, and then completed an online quiz. In reality, it was not possible to carry out on-site field measurements with such a large class (133 students).</p> <p>The VR tour consisted of 'hotspots' to explain the importance and methods of water quality monitoring. This immersive and enjoyable online learning experience was made accessible via students' smartphones a week in advance. Meanwhile, instructors facilitated higher cognitive learning activities, including a Q&A session, a traditional lecture and an in-class mini research task during class time to achieve the intended learning outcomes.</p> <p>After the class, students were asked to respond to two online surveys about their flipped learning experiences and the usefulness of the VR courseware. 77% of the students believed that the pre-class and in-class learning activities were aligned with the intended learning outcomes. On the use of VR for learning, at least 75% of the responders agreed or strongly agreed that VR provided (1) more in-depth learning opportunities and understanding of the topic, (2) more interaction with the teacher during class time, (3) hands-on experience, and (4) an incentive to increase students' interest.</p>
<p>2 KEEP: Knowledge & Education Exchange Platform</p> <p>http://keep.edu.hk</p>  <p>The Chinese University of Hong Kong</p>	<p>KEEP is a one-stop eLearning platform for educators, teachers, and students. KEEP gives you access to a broad set of tools such as KEEP Moodle, KEEP Open edX, KEEPoll, and KEEPAttendance to facilitate education both in and outside of the classroom.</p> <p>KEEP's vision is to empower teachers with whatever resources and technologies you may need in one place, instead of having to access many different platforms for different tools. KEEP aggregates eLearning courses and integrates technologies for education such as MOOCs, LMS, in-class interaction software, etc.</p>

<p>3 BOLT: Designing Blended Learning</p> <p>https://www.bolt.edu.hk/</p>  <p>The Hong Kong Polytechnic University</p>	<p>The BOLT Project is a UGC-funded multi-insertion collaborative innovation designed to increase teachers' use of and competence with blended and online tools and techniques across Hong Kong universities. The original project combines top-down and grassroots approaches across the five participating universities, with as its two main highlights the BOLT Foundation Course (a blended course for teachers looking at blended and online pedagogies and open to all) and the capacity-building approach at the Education University of Hong Kong, initiated in one faculty and now moving university-wide.</p> <p>The Hong Kong Polytechnic University introduces BOLT: Designing Blended Learning, a fully online six-unit course open to academics and teachers across Hong Kong and beyond. Hosted on the KEEP platform, the course guides teachers as they develop a Learning Innovation Plan, a small project incorporating blended approaches into their regular teaching and learning practices. This new element of the project will help to increase its impact after the funding period ends, as well as opening up quality resources to a wider audience.</p>
<p>4 HKMOOC: A MOOC Platform for Hong Kong's Tertiary Education Sector</p> <p>http://hkmooc.hk</p>  <p>The Hong Kong University of Science and Technology</p>	<p>HKMOOC is a collaborative project funded by the University Grants Committee's Teaching and Learning Funding Scheme. The aim of the proposed project is to establish a joint e-learning / MOOC platform to facilitate collaboration in teaching and learning for Hong Kong's tertiary education sector and to adopt innovative pedagogies for enhancing the learning experience of students. The platform would also enable instructors to collect data on students' learning patterns (in particular, students in Hong Kong) and perform learning analytics on how students learn.</p> <p>The long-term objective of the project is to provide an e-learning platform for all UGC institutions to offer high-quality courses to students from around the world, and in particular, to Hong Kong students from UGC institutions as well as self-financed post-secondary institutions and secondary schools.</p>
<p>5 OUHK iBookcase</p> <p>http://ouhk.edu.hk/ibookcase</p>  <p>The Open University of Hong Kong</p>	<p>iBookcase is an in-house developed mobile app which aims to facilitate students' learning anytime and anywhere. It synchronizes with the OUHK's Online Learning Environment (OLE) and provides a powerful package of learning tools for the courses.</p> <p>iBookcase brings the following benefits to students:</p> <ul style="list-style-type: none"> • Study anytime and anywhere • Receive instant course alerts • Learn effectively through multimedia components and interactive activities • Enhance students' reading experience through study tools

<p>6 Technology-Enriched Learning Initiative</p> <p>http://teli.hku.hk/</p>  <p>The University of Hong Kong</p>	<p>Technology has continuously developed and changed the way we communicate and access information in the past few decades. Students come to university with a new way to learn and institutions and teachers need to respond with new ways to develop the intellectual faculties of our students.</p> <p>Technology-Enriched Learning Initiative (TELI) is a team of e-learning technologists, instructional designers, multimedia professionals, software engineers, game developers, researchers and collaboration associates under the Teaching and Learning infrastructure of The University of Hong Kong. We aim to optimize technology in enhancing, supporting and blending traditional methods of teaching and learning. Our deliverables include MOOCs (Massive Open Online Courses), SPOCs (Small Private Online Courses), blended learning and flipped classroom projects, EdTech development and research publications. We hope to use technology as a tool to build genuine partnerships with stakeholders in scaling out teaching and scaling up learning.</p>
<p>7 Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong's Vocational Education and Training (VET)</p> <p>https://vpetcity.vtc.edu.hk</p>  <p>Vocational Training Council</p>	<p>Funded by the Quality Enhancement Support Scheme (QESS) of the Education Bureau (EDB), this three-year project consists of a collaborative effort by the Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE) and Caritas Bianchi College of Careers (CBCC) to create a closer alignment of vocational and professional education and training (VPET) services with industry. This project aims to review and develop suitable VET, (recently termed Vocational and Professional Education and Training (VPET)) and pedagogical practices in Hong Kong, and also devise e-learning means and an online platform for the open sharing of resources. The project deliverables include:</p> <ul style="list-style-type: none"> • A Cross-institutional online learning and teaching platform for students, teachers and workplace mentors to share quality learning and teaching materials, teaching methods and professional practices. • Teaching and learning package exemplars from selected vocational modules in the programme areas of Hotel and Catering, Health Care and Community Services, Business and Management, and Servicing. • Mentoring Guides on the teaching of VPET, assessment and workplace mentoring. • Continuing Professional Development Programmes for teachers and workplace mentors of VPET. • Reports and Resources

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.

Teaching and Learning the Structures of Matter Using Animated Ball Origami Models

Lai Yim Kok

Malaysian Institute of Chemistry
Kuala Lumpur, Malaysia

Learning science involves explaining the properties and interactions of matter in terms of structures which are composed of particles existing at the submicroscopic level. At this level, the particles are too tiny to be seen by the naked eye. As such, teachers find it difficult to teach and students struggle hard in trying to understand the abstract concepts related to the structure of matter. The aim of this research is to develop a method to produce animated ball origami models which can assist teachers and students in studying the various structures of matter. Basically, this method consists of five steps. Firstly, the origami balls which represent the particles are folded using coloured paper. Then, 3D photographs are taken of the individual balls with a digital camera. The images are imported into photoshop in which they are cut out, and a 3D drawing of the structure is illustrated. Finally, the drawing is animated and saved as an animated GIF file. Teachers can use these animated GIFs to teach topics in science related to the structure of matter and, in turn, teach their students how to make these animated GIFs to study the structures on their own. Starting from simple molecules, teachers and students can advance to giant structures. As the making and usage of these animated ball origami models cater for all learning styles, whether kinaesthetic, visual or auditory, they become effective teaching aids and learning tools in science education.

The Challenge of Innovative Assessments in E-learning

Ching-ping Tzung

Open University of Kaohsiung
Kaohsiung, Taiwan

Teaching and assessment are two pillars of learning. Unlike traditional universities, most courses provided by the Open University of Kaohsiung (OUK) are web-based. To help teachers to better evaluate their learning efficiency, the learning process of each learner at the OUK is collected and transformed into e-learning tracking as an aid to assessment. Nevertheless, the learning assessment is still traditional and teacher-oriented. For the sake of fairness, teachers tend to adopt the same assessment standard for each learner and ignore their difference in prior knowledge, study motivation and the level of autonomous learning. In addition, changes in mindset during the learning process, as well as self-assumed learning efficiency, are not considered in assessment. The main purpose of the present study is to integrate the concepts of innovation, sharing and collaboration derived from innovating pedagogy to learning assessment — that is, learning assessment is no longer solely teacher-oriented. Through sharing experience, an individualized mutual agreement (collaboration) on learning assessment reflecting real learning situations is achieved. The subjects in the study were the 40 enrolled adult learners at the OUK who took the elective course on *Intercultural Communication* this semester. In addition to the quantitative assessment via e-learning tracking, qualitative open questions-based evaluation and online group discussion were implemented in the course. Through an individualized differentiated assessment, the real learning situation can be better understood with the aim of helping adult learners to achieve their learning goals.

A SWOT Analysis of Blending Immersive Virtual Reality in the Classroom

Paula Hodgson, Vivian W.Y. Lee, Chung-Shing Chan, Agnes Fong, Cindi S.Y. Tang and Sonia W.L. Cheung
The Chinese University of Hong Kong
Hong Kong SAR, China

Research showed the benefits of having an immersive experience for rehabilitation more than a decade ago, and the use of head-mounted virtual-reality displays has since been attracting interest and gaining momentum in higher education in Hong Kong. Despite most university students here being considered digital natives, adopting technologies for education has been a paradigm shift in their daily lives. Although there have been early adapters to innovative approaches to teaching in universities, teachers may nevertheless find it challenging to enculture immersive virtual reality (IVR) for learning beyond the classroom in preparation for professional practice. This paper discusses the strengths and weaknesses of the application of IVR in the classroom, and the opportunities and threats from a curriculum perspective in two courses that have embedded IVR in a university in the first semester of 2017–18. Classroom observations were conducted, and surveys of student learning experiences were collected. There was a mixture of student responses to an unprecedented experience in university study, although the outcomes of this implementation have yet to be observed.

Quiz Learning Modelling in the Development of Thematic Learning in Distance Education Modules

Suhartono and Dewi Andriyani
Universitas Terbuka
Tangerang Selatan, Indonesia

This study was conducted to identify the model for improving the quality of teaching materials by including exercises/quizzes as part of an interactive medium textbook in distance education. Evaluation of the teaching materials involved groups who can improve the modules, such as the students, experts who understand the characteristics of the module — in terms of the materials, media and language — and the lecturer/tutor. Various inputs were very useful in obtaining information on the ‘shortage’ of good teaching material. The study was carried out in April to November 2016. The research method involved three steps, viz. a preliminary study phase; a trial run one-on-one with three students; and testing a small group of ten students. The application was based on a learning approach as a system (input – process – output) which consisted of several related components to achieve the goals. The model to generate the design involved implementation, evaluation and follow-up. The results showed that the improved exercises in the module involved five aspects: (1) the need for training to enrich students’ understanding of the material; (2) compliance with the depth and breadth of the training materials that were studied in the discussion module; (3) variation in the patterns of interactive exercises (not rigid and monotonous); (4) the use of language in a systematic and coherent way; and (5) equipping exercises with signs/guidance and graphic media that supported mastery of the material. Exercises were developed with reference to their suitability for understanding. These varied exercises were able to enrich the material and avoid its being tedious. Based on the results of the student questionnaire, a small group of the tests gained an overall average percentage on almost every item of 85–90%, and the model exercise/quizzes were developed accordingly.

An Analysis of Action Research Studies Conducted by Teachers in the School System

Dayalatha Lekamge
Open University of Sri Lanka
Colombo, Sri Lanka

Jayani Thillakaratne
Ministry of Education
Battaramulla, Sri Lanka

Action research is becoming popular in the school system as a viable means for empowering teachers. It provides teachers with the opportunity to improve their reflective practice and implement solutions to problems they face in the teaching-learning process (Ferrance, 2000). While conducting action research, teachers critically analyse their problems; design, apply and review their actions in relation to the context; and observe, assess and reflect on their actions objectively — a process which leads to the development of higher-order cognitive skills. Considering the potential benefits of action research for teachers, students and school communities at large, the Ministry of Education of Sri Lanka launched a project aimed at empowering teachers with the required skills and motivating them to conduct action research studies. About 84 teachers, who had sent their research proposals on an open invitation from the Ministry of Education in early 2017, were called for a series of workshops through which their original proposals were fine-tuned and their knowledge and skills on action research were enhanced. Those teachers engaged in action research studies for about three months, and prepared reports and sent them to the Research Unit of the Ministry of Education by November 2017. The reports relating to outstanding action research studies were published in the website of the Ministry of Education and given monetary awards.

This paper analyses the nature of the problems considered by the teachers for their action research studies; the innovative strategies adopted for the intervention process; and the observations and reflections made during the intervention process on the changes experienced by participants. The analysis revealed that the teachers were capable of applying innovative strategies as solutions to the problems in their teaching-learning processes. It was also evident that many students who had difficulties in coping with day-to-day activities in their classrooms benefitted from the interventions. It is recommended that school authorities should develop a supportive environment within their schools to motivate teachers to carry out action research studies as they provide on-the-spot solutions to the problems in the teaching-learning process.

The Bachelor of Education (BEd) Programme: An IGNOU Experience

Niradhar Dey
Indira Gandhi National Open University
New Delhi, India

The Bachelor of Education, which prepares graduate teachers for teaching at the secondary and senior secondary stage, is one of the important professional programmes of Indira Gandhi National Open University which is offered through the open and distance education mode. It has been developed in line with the National Council for Teacher Education Regulations, 2014. A well-defined blended approach to instructional strategy has been adopted for this programme.

This paper discusses various components of the programme, and the modalities of its being offered across India using a SWOT analysis. The programme involves both theory and practical components of a different nature. As a professional teacher preparation programme, various compulsory practical elements — such as school internship, school-based practical activities and workshop-based activities — are included in it. Apart from the above, course assignments are also one of the compulsory components in the programme. For better implementation, a blended approach to instructional strategy is adopted. Self-learning print materials are provided to the learners with support to access the SLMs on the university's website eGyankosh. Counselling is also provided at the Programme Study Centres and online interaction on various themes is offered by Interactive Radio Counselling and Teleconferencing. As part of the practical activities, four-month of internships are conducted (one month in the first year and three months in the second year) at identified schools; and 24-day (12 days in each year) workshops are held at the PSCs under the supervision of experts and mentors. Both internal and external examination systems are used for evaluation. Although the programme has been implemented successfully, satisfying the needs of the learners, there are still certain issues which need to be addressed, such as: proper supervision and mentoring of the learners during practical activities; monitoring all activities in the field; the provision of needs-based counselling and tutoring for the learners; and internal and external evaluation.

Can a Flipped Classroom Really Improve Learning Performance? A Meta-analysis of 36 Experimental and Quasi-experimental Studies

Cuiru Wang and Yongbin Hu
Jiangsu Normal University
Xuzhou, China

Flipped classroom teaching is innovative and has had a profound influence on global education. In order to explore the impact of the flipped classroom on learning performance, domestic and foreign scholars have conducted a large number of experimental and quasi-experimental research studies. However, the research results differ from one another. So the research question is: 'Does a flipped classroom really improve learning performance?' In order to answer this question, this paper employed a meta-analysis method which is very popular worldwide. Thirty-six empirical and quasi-experimental studies were selected and quantified to analyse the impact of flipped classrooms on learning performance. The results were as follows.

- (1) The overall effect size of the studies included was 0.35, which indicates that the flipped classroom has a positive impact on students' learning.
- (2) Compared with English, physics, medical science, flipped chemistry, and biology, teaching mathematics with a flipped classroom had a greater impact on students' learning, which has a promising future.
- (3) Teaching with a flipped classroom in small-scale classrooms had a greater impact on learning performance than in medium- and large-scale classrooms.
- (4) Compared with the academic progress of low-achievement students, the performance of high-achievement students was more significant.

Investigation of the Impact of a Flipped Classroom and Active Learning Components on Students' Learning with Reference to the Traditional Teacher-centred Approach

Kim-hung Lam, Alex Wong, Ka Chai Siu, Laura Zhou and Chui Chung Hin

The Hong Kong Polytechnic University
Hong Kong SAR, China

This paper reports on the use of active learning activities and flipped classroom operations to enhance the student learning experience in a foundation science subject (*ABCT1D10 Food Colour, Taste and Smell*) which was offered in Semester 1 in 2017–18). The student learning experience was measured with reference to the “teacher-centred” mode of education.

ABCT1D10's teaching materials were pedagogically redesigned in this academic year, together with tailor-made online learning materials and tasks which were comprised of (a) four self-quizzes (e.g. multiple-choice and/or True/False questions) and (b) one revision exercise which served as a guide to help students in studying via the PolyU's Blackboard Learn before they participated in the collaborative activities and major assessment (e.g. course revision and test) during classroom time. This year, we decided to let the students submit an mp4 video report (of around two minutes) for one of the experiments instead of the traditional word file report. The students were required to work in teams during the practical class and to make their final food products (ice-cream and butter). We hope that this arrangement can help students to have a better learning experience and deepen their understanding of relevant concepts. It is encouraging that our students found that this activity was fun and interesting, and could help them to learn better.

Pre- and post-questionnaire surveys were applied to gain quantitative measures of the students' perceptions of their achievement of the learning outcomes, and their motivation and self-regulated learning. A statistical analysis was carried out to determine the impacts of active learning and a flipped classroom on students' learning. A t-test showed significant differences ($p < 0.05$) between the students' pre- and post-questionnaire responses on their perceptions of their subject knowledge related to the learning outcomes — such as basic food science knowledge and appreciation of lifelong learning, teamwork, and communication skills. The preliminary results demonstrated that the flipped classroom and active learning components helped students to have a better understanding. About 75% of the students believed that they could learn better and have more confidence in learning the basic concepts of food science, and found the experience interesting; and over 75% felt that the flipped classroom could help them to learn better. These results show that active learning activities and flipped classroom components are conducive to enhancing students' subject learning outcomes, motivating their learning, and enriching their learning experience in the classroom. Overall, the findings suggest that group work can improve students' subject knowledge, encourage them to learn, and developed their interest in the subject.

Online-based formative assessment and its impact on the summative component

Nantha Kumar Subramaniam

Open University Malaysia
Kuala Lumpur, Malaysia

Formative assessment is an important part of the teaching and learning cycle. Instructors need to monitor student learning and check for understanding throughout the instructional phase of teaching to confirm that students understand the contents before embarking on summative assessment. Formative assessments have been deemed useful within the traditional classroom and also in the online learning mode. However, very few studies have reported on the types and distribution of assessments that are used by instructors to contribute to the students' overall grades in an online course. A better appreciation of online assessment in the online learning mode may help to illuminate the next steps in the development of a framework for studying and practising online teaching. This study aims to discuss our “activity-based” approach in implementing online-based formative assessment and analyze its impact on the summative component. The course involved was *Introduction to Psychology* (ABPG1103), an undergraduate course offered in the May 2017 semester with 543 registered students. The course used online assessment as its formative component and a MCQ-based final examination as the summative component. The students' performance in the summative component (final examination) was compared to the previous semester's (January 2017 semester) results in order to determine the effect of online assessment (the formative component) in the final examination (summative component). The results show that the summative component outcome was better in the May 2017 semester (which used the online formative assessment as its formative component) compared to the January 2017 semester which used written assignments and the difference was significant at $p < 0.05$.

Evaluation of Nursing Students' Learning Feedback on the Implementation of VR-based Learning in Anatomy in Hong Kong

Yvonne Hon Ling Lam, Simon Wing Lung Yau,
Gary Long Hei So, Amanda Wan Yee Chan,
Karen Ka Man Cheung, Isobel Hoi Ki Yeung,
Victor Ming Ho Lau and Ka Fai Wong
The Open University of Hong Kong
Hong Kong SAR, China

Anatomy is an essential foundation subject for nursing students. However, they always have difficulties in memorizing the numerous body parts and systems. Students take a lot of time to understand and visualize 2D pictures in books, and have been found to have little interest in studying 2D images (Hamza-Lup et al., 2009). The learning process and experience are not efficient and effective (O'day, 2007). Our team tried to use 3D animations to replace the 2D images and videos, and the outcome was satisfactory (So, 2017). To further enhance students' learning efficiency, a VR anatomy learning software was introduced. The VR anatomy learning software was applied with the first-year nursing students who were studying anatomy, and we wished to know whether the VR technology could help them to have a better learning experience in studying the subject when comparing to traditional learning platforms (i.e. PowerPoint and video). The aim of using this VR software was to facilitate learning efficiency. This software application provides various 3D human body models to promote student learning, and labelling and tags are also shown in the application. The anatomy software uses HTC VIVE for VR experience. Hand controllers are used to control the movement and interactions between students and the 3D models. Students can walk around freely inside the virtual classroom to view organs and vessels from various angles.

A four-point Likert scale survey was deployed to evaluate the efficiency of learning, with a comparison between the VR learning material and traditional learning material. The immersive experience of using VR technology aroused students' interest in studying the human body structures. The interactions provided by the application attracted the student to learn anatomy actively. Student also reported that the learning experience was better than using the traditional learning routine.

Multitudes of Problem-solving Exercises and Worked Examples for the Study of Algorithms in an Operating Systems Course

Andrew Kwok Fai Lui, Maria Hiu Man Poon and
Raymond Man Hong Wong
The Open University of Hong Kong
Hong Kong SAR, China

Problem-solving exercises and worked examples are effective for the study of algorithms when programming laboratories are not available. Worked examples facilitate visualization of the execution of algorithms, and problem-solving exercises allow validation of one's understanding. A multitude of such exercises and examples, however, can promote deeper analysis of algorithms through comparing and contrasting the outcomes of algorithm execution. The project described in this paper investigates how students interact with a virtually unlimited number of exercises and examples. An online tutoring system based on problem-solving exercise generators was developed as a learning supplement for students in an operating system course, as well as an experimental platform for recording the interaction patterns of users. The study of established algorithms is important and challenging for students in operating systems courses. This paper reports several interesting findings about how students perceive such an online tutoring system. The system was very well received and most students considered the system from the most practical perspective, which is an exercise book for preparing quizzes and examinations.

Acknowledgement: The authors would like to thank the Institute for Research in Open and Innovative Education, established with the substantial support of a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15) for its inspiration for the work reported in the paper.

Strategies for Enhancing Student Learning with iPads: Innovative Perspectives from EdTech Experts

Zexuan Chen
South China Normal University
Guangzhou, China

The past decade has witnessed an expansion of iPads into students' learning environment. However, classroom teachers still lack effective strategies to enhance student learning using these devices. Therefore, this article presents paper interviews with three educational technologists from different countries (America, China and Australia) to collect innovative perspectives on iPad pedagogy. A corpus-based approach was used to analyze the experts' responses. The findings, which highlighted the value of promoting student learning with iPads, emphasised the following specific strategies to embed iPads into the learning process: (i) get the best out of the Padagogy Wheel; (ii) use multiple apps to transform students' learning; and (iii) manage iPad classrooms. Finally, on the issue of becoming skilful in applying educational technology, the EdTech experts encourage classroom teachers to keep learning and collaborate with each other.

Mining Online Learners' Profiles through the Application of Machine Learning

Bing Wu
Shanghai Open University
Shanghai, China

The learners' profile is an effective model for describing the learners' learning preferences. Statistics show that online learning activities are non-continuous and diverse — some of them happen at the beginning of the term, while others occur in the middle or at the end of term. By taking a closer look at the learning activity data, it was found that it related to many factors, including individual's information, course type and even the area they came from. In this work, we made use of Shanghai Open University's learning management system as the source of our research, and adopted a machine learning method, including clustering algorithms, to find the hidden pattern of learning activities, and build the online learners' profile. According to the profile, we can predict an individual learner's preferences by using the Naive Bayes model. Our study tried to develop a methodology to mine online learners' profiles and understand the difference in learners' learning activities. This study revealed several interesting patterns, e.g. difference in learning activities between non-science courses and science courses and gaps in age and gender. This will help tutors to adjust their instructional strategies to motivate learners' interest and persistence in learning.

N-Trail: The Use of Mobile Augmented Reality (MAR) in Learning about Hong Kong's Nature

Cheng King Nam, Lee Ho Chun, Ngan Heung and
Vanessa Ng Sin-Chun

The Open University of Hong Kong
Hong Kong SAR, China

This project aims to build an AR educational application called 'N-Trail' for primary school students to explore nature in Hong Kong. In recent years, the learning style of local primary students has been subject-oriented, with only one field trip per year; and, in addition, the resources are limited for outdoor learning.

With the use of N-Trail, primary school students can explore Hong Kong's nature effectively. They can find out the location of nearby flowering plant by looking at the map of N-Trail, and can take a picture to N-Trail for recognition. It shows the information about the flowering plants after recognition, and also shows the AR model which simulates the growth of flowering plants. Overall, N-Trail provides a more effective way for these students to explore nature in Hong Kong, with its image recognition function to show information on specific flowers with AR and the correct locations.

In a user evaluation of N-Trail, the results indicated that, with the use of augmented reality in the mobile application, N-trail was useful and effective for primary school students to explore Hong Kong's nature.

Acknowledgement: The authors would like to thank the Institute for Research in Open and Innovative Education, established with the substantial support of a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15) for its inspiration for the work reported in the paper.

Integrating Corporate Social Media Communication into the English Language Curricula

Dilys Wai-mui Sung, Annie Lai-kun Choi and John Yuk-lun Ng
Vocational Training Council
Hong Kong SAR, China

The rise of social media has affected how people do business and communicate. Companies interact with potential customers, share offers and promote sales, tracking instant responses on the Internet. Exploring how they do them with language can enable meaningful changes in the vocational English language curricula.

This study gives a descriptive analysis of 500 selected corporate Facebook (FB) threads collected from the 100 Best Global Brands in 2017. It delivers a sizeable collection of corporate FB posts categorized according to industry, business topics, and language functions. For contextual analysis, the three parameters 'Field', 'Tenor' and 'Mode' based on the Hallidayan framework (Halliday and Hasan, 1985) were used, while the Language Analysis Framework for Writing (California Department of Education, 2015) was adopted for the analysis of language characteristics.

The findings revealed that a range of communication strategies, remarkably different from those in traditional business communication, were employed by corporates to boost FB traffic, achieve succinctness and innovation, and build brand images. The study is significant for vocational and professional education and training as it facilitates close reference to exemplary authentic language materials of the best global brands. The unique characteristics of social media, such as spontaneity, interactivity and openness, will also shed light on a new variety of topics, content and styles for vocational English training. The versatile nature of the social media also makes the study a good stepping stone for any further joint research on content and language integrated learning (CLIL).

The project was funded by the VTC Seed Funding Scheme.

Building Curriculum Around Perceptions of Appropriate College-level Writing in an American Community College

Nathan Brian Jones
Johnson County Community College
Kansas, the United States

What is appropriate college-level writing and how does one teach it? This paper extends work published by the author at the International Conference on Open and Innovative Education in Hong Kong in July, 2017. New interviews with faculty staff are included to explore their perceptions of the concept of appropriate college-level writing in an American community college, which provided a data pool of 20 hours of extended interviews with ten community college faculty members, representing different disciplines. Also new in this paper, 40 community college students, in an assignment for their writing courses, interviewed faculty staff across the campus about their perceptions of college-level writing and drafted follow-up research reports. Using transcendental phenomenology, the researcher analysed the extended interviews with ten faculty members and the contents of the 40 student reports to identify faculty perceptions of the characteristics of appropriate college-level writing. Analysis of the data enabled the researcher to develop a writing course curriculum, another new element in this paper, to prepare students to investigate for themselves how to draft papers in various disciplines. This presentation summarizes the characteristics of appropriate college-level writing in the local context, as identified by the extended interviews with ten faculty staff and as presented in the 40 student reports. It explores how the data informed the development of a local college writing course; and shows how students were taught to investigate the perceptions of appropriate college-level writing among the faculty in various disciplines. Lastly, it provides guidelines for defining appropriate, local, college-level writing when developing the curricula for writing courses.

Open Learning and Student Leadership: A Case Study

Rebecca Johnke
The University of Sydney
Sydney, Australia

This paper showcases an open and innovative suite of units designed by a multi-disciplinary team of academics and students at the University of Sydney. As part of a process of curriculum transformation, staff from Health Sciences, Medicine, Engineering, and Arts and Social Sciences collaborated with staff from Education Innovation and the Library to develop a number of student leadership units. The units are: *OLET1402 Leadership in Education and Organisations* (0 credit points, free of charge and available to staff and students); *OLET1403 Student Leadership: Community Engagement* (2 credit points); *OLET1404 Peer Mentorship* (2 credit points); and *OLET1405 Student Leadership: Representation* (2 credit points). These open learning units aim to give students theoretical and practical underpinning for their leadership aspirations and provide them with the opportunity to develop and practise relevant skills. Students have been important partners in this process as they have assisted by developing content and testing the units (early qualitative feedback). The curriculum includes the provision of foundational areas to support and inform study on leadership skills, the opportunity to apply broadly leadership skills, and a strong focus on personal development and communication. Once they have completed the online and open zero credit points unit, students can then choose to extend that knowledge by taking any one or all of the additional two credit points units, which are (ideally) designed to scaffold to provide a comprehensive suite of leadership offerings. Taught wholly online, by a multi-disciplinary team, these units are open and innovative, and represent a breakthrough for this type of curriculum at the University of Sydney. The units were offered for the first time in Semester 1 2018 and so preliminary results and evaluation data (qualitative and quantitative) are presented for discussion.

Mainstreaming Digital Learning to Improve the Quality of Student Learning Experiences

Bob Fox and Mark King
University of New South Wales
Sydney, Australia

The research- and teaching-intensive University of New South Wales, as a central component of its ten-year UNSW2025 strategy, has placed an *additional* AUD \$500 million (HK\$3 billion) to support education projects focused on improving the quality of student learning experiences. As part of this initiative, academic staff have been given the option of transferring their contracts from research and teaching to education-focussed positions. Also, courses and programmes are being reviewed and rationalized to ensure faculties can concentrate on providing fewer but higher-quality learning and teaching experiences (without reducing student choice); and courses are being revised to include increased digital, blended and fully online components to innovate and transform the curriculum.

This paper outlines the various educational initiatives embedded within the UNSW2025 strategy. These focus on curriculum, course and programme design and the associated capacity-building for staff; the University curriculum framework; and learning design models and tools to enable UNSW educators to be able to provide an inspired educational experience that is suitable for a research- and education-intensive university. In particular, the paper reviews the:

- various digital uplift initiatives;
- institution-wide curriculum framework and course design models and tools;
- capacity-building initiatives for staff;
- students as partners initiatives; and
- lesson learned to date.

Development of a Music App to Facilitate Self-directed Learning

Ivy Chia and June Tay

Singapore University of Social Sciences
Singapore

The rise of apps in an increasingly mobile world has been phenomenal. These days, students spend 85% of their time on their mobile phones. This presents a valuable opportunity to facilitate self-directed learning at an undergraduate level. Given the various mobile interfaces and audio functions, it is most suitable to be used for aural skill acquisition. An ear training app addresses a musician's need for an ear training tool that is accurate and encourages self-directed learning at his or her own time and pace. This paper explores the development of an app for mobile learning in the broader context of the aural training for undergraduate music studies. The app utilizes HTML5, CSS and Javascript to build in structured interactive exercises to improve students' musical ability so that they develop a more intuitive understanding of what they hear. The paper also explores the use of different programming languages and platforms for developing the apps, highlighting the strengths and weaknesses of each.

Flipping the Traditional Classroom: Assessing the Impact of an Innovative Curriculum for Language Learning

Curtis Shu-Sun Chu

National Chung Cheng University
Chiayi, Taiwan

Lifen Wang and Ching-Fen Wu

National Chiayi University
Chiayi, Taiwan

Since the movement to progressive education, innovative methods of teaching have been developed to reinvent the traditional classroom, including the notion of the flipped classroom, project-based learning (PBL) and a learning community. This study aimed to examine the results of an innovative curriculum based on these developments.

The curriculum was implemented in 14 first year English courses with over 600 participants in a university in Taiwan. Data were collected and analyzed with a mixed-method approach. Qualitative data were collected from a post-course student survey, and quantitative data were gathered from students' English ability, the final and midterm examinations, and the Problem Solving Inventory (PSI). The findings were as follow. First, when statistical analysis was carried out by comparing the students who participated in the innovative curriculum with non-participants, significant differences between the groups were found in both the midterm and final examination scores. Overall, the students who took part in the curriculum achieved lower scores than the non-participants — the innovative curriculum may have had a negative impact on student performance in examinations. Second, the results of the pre-test and post-test on the PSI for participants revealed a decrease in their overall confidence in problem-solving. Yet, when the focus of the PBL in the curriculum was on problem-solving, students achieved a higher PSI score, meaning that they were more confident in their problem-solving ability. Finally, from the findings on 151 students surveyed, it was found that 93% of the participants agreed that the innovative curriculum benefitted their overall English ability, particularly their English speaking ability. Other benefits included acquiring or improving their multimedia skills, teamwork skills, and problem-solving skills.

Essential Components in Designing a Nursing Simulation-based Education: A Qualitative Study

Baljit Kaur, Suet Lai Wong, Yat Kwan Alan Tsang,
Pui Han Alison Cheung, Hoi Man Jackie Chan,
Ching Yee Lam, Ying Ting Mavis Tong,
Yee Chong Caroline Charm, Ka Yee Cora Lo and
Ka Man Carmen Fung
The Open University of Hong Kong
Hong Kong SAR, China

Simulation-based education (SBE) has been widely used in nursing education (Jeffries, 2009; Nehring and Lashley, 2009; Sanford, 2009; Sullivan-Mann et al., 2009). When simulation is incorporated into nursing education, this enables students to practise nursing skills in a safe environment and without endangering real patients (Motola and Devine, 2013). Numerous researchers have investigated the effectiveness of using simulation in nursing education, but there is a lack of discussion on aspects to be considered when planning SBE in the nursing curriculum.

A qualitative study using structured open-ended questions was adopted to conduct an interview with ten nursing educators with at least five years of experience in using simulation in the nursing curriculum; and thematic analysis was employed to analyze the information collected. Three themes were derived which are essential in integrating SBE into the nursing curriculum. Firstly, simulation is used for enhancing the safety of learning which can be increased by providing a briefing to students before the simulation to provide familiarization with the scene. Secondly, identifying specific modalities of simulation is essential. Simulation can be used to mimic different clinical conditions; and different modalities of simulation further improve the realism of the conditions, which can consequently enhance students' learning experience. Lastly, designated and specific outcomes of SBE should be addressed in its planning. The learning outcomes in the various simulations can be different, which also affects the design of the simulation delivered to the students. Therefore, careful considerations should be given to targeting the learning outcomes of simulation.

Room Escape: Gamification as a Novel Educational Outreach Tool

Chia-huei Tseng
Tohoku University
Sendai, Japan

Room Escape (RE) involves live-action team-based games that have become popular in Asia since 2010. It requires players, usually in a team, to collaborate and communicate in order to discover clues, solve puzzles, and accomplish tasks to reach a specific goal (usually escaping from the room) in a limited amount of time. RE can be used as a novel tool for public outreach activities, as well as an integral part of the higher education curriculum, as can be seen in the following three examples. In the first one, which took place in Hong Kong, Cognitive Sciences were introduced to the local community in a RE game called 'Mind Cryp' over a period of two weeks in 2014. The second targeted high school students in Taiwan in order to introduce Psychology for their choice of a university subject and career. The last example occurred in an international academic conference on Vision Sciences, in which cutting-edge science discoveries were designed as games for the general public to learn about Vision and Material Sciences. In each of these three cases, students were engaged and given opportunities to convert from being passive learners to active teachers. The data showed that RE is novel and effective for both higher education and educational outreach.

The Implement of an Interactive Application on CAI for the Level B Technician Skill Certificate of Telecommunication Outside Plant

Wei-Chih Hsu, Yu-Hsing Yeh and Tsung-Yuan Chou
National Kaohsiung University of Science and Technology
Kaohsiung, Taiwan

According to the regulations of the Telecommunication Act, telecommunication industries in Taiwan have been required to hire staff who have the telecommunication technician certificates issued by the Ministry of Labour since 2008. The demand for training courses for obtaining the certificates has risen greatly; yet, due to the limited numbers of training laboratories, as well as the costs of equipment maintenance, meeting this demand is a heavy burden for both the instructors and training institutions. Also, most computer-aided instruction course systems for acquiring the skill certificate examination nowadays are subject-oriented, not skill-focused. To solve these problems, this research used Smart APPs Creator 3 to develop an interactive application on a computer-aided-instruction course system. From the data collected from learners' feedback, this course system was edited and adapted several times to achieve a better performance. By adopting the experimental approach, 21 learners were assigned to experimental and control groups to find out their difference in training costs and the time spent on the certificate examination. To summarise, this interactive application on computer-aided instruction did effectively solve certain difficulties confronted in the training courses for obtaining Level B Technician Certificate of Telecommunication Outside Plant.

The Use of ICT for Emergent Course Development: A Case on Networked Detection in Police Training

Fugang He
People's Public Security University of China
Beijing, China

With the wide use of information and communication technology (ICT) in vocational training, few research projects have been carried out on web-based emergent course development in the field of police training. The purpose of this study is to explore the emergent course development model based on an e-learning platform in order to resolve this issue of the lack of practical cases for police training in China. In this study, the design-based research method was employed. The course on *Network Detection* was selected and a total of 327 police participated in the training in three rounds of the course. The course lasted for 12 weeks with two hours per week and the online learning mode was employed. The five steps of emergent course development were followed, viz. course objectives, course design, course preparation, course implementation and generative course reflection and refinement. The following functions of the e-learning platform based on Moodle were used: multimedia learning resources; discussion forums; case sharing; and collaborative learning. In the learning process, the principles and methods were taught by the lecturer, while practical and real cases were shared and discussed by the students online. As a result, 50 practical cases were contributed by the students based on their own work experiences. It was found that the training students were very interested in doing the learning activities on case analysis, which were shared with peer police students. These case studies could be an important component in police training course materials. It is hoped that the outcomes of this study could be helpful for teachers in vocational training to develop emergent courses.

Mobile Learning as a Necessary Feature of Open and Innovative Education

Frances Di Lauro

The University of Sydney
Sydney, Australia

This paper reports on studies involving students in an interdisciplinary, senior undergraduate course *WRIT2002 Arguments that Change the World* at the University of Sydney. Mobile devices have become the single item in students' toolkit while carrying out field research in this innovative, open learning environment. Most students use a smartphone, but some use tablets, to navigate landscapes inspecting and collecting data on stationary objects made by people in open, outdoor locations, such as parks, graveyards, and even the university precincts. On the field trips, students collect data; capture images of the objects and written placards associated with them; find GPS coordinates; search for information; document their experiences; and draft analyses. Students interrogate and evaluate those objects using methodological approaches from their primary discipline, which may be literary studies, archaeology, religious studies, psychology, sociology, cultural studies, anthropology or indigenous studies. After a field trip, students must upload raw data and preliminary analyses to online journals and a social media site. By 2016, students were increasingly uploading information to online journals and social media sites using apps and this led to the development of this study. The purpose of the study is to evaluate students' responses to questions about the adequacy of their chosen mobile device as a tool for capturing evidence, conducting searches and reporting to an online journal during a field trip. They also respond to questions about whether they have used mobile devices in similar courses in the past and, if so, the extent to which they relied on them. Responses were collected through an ethics approved questionnaires and focus group discussions drawn from students who participated in the course in the five sessions that were taught between 2016 and 2018. The preliminary results have been drawn from the 2016 and 2017 sessions, but this paper also reports on data collected in Semester 1, 2018.

Digital Coffee Telling: Designing a Coffee e-Learning Narrative to Promote Coffee Growing in the Philippines

Emely Amoloza

University of the Philippines Open University
Los Baños, the Philippines

Anna Lozada

Marinduque State College
Marinduque, the Philippines

Crina Tanongon

University of the Philippines Cebu
Cebu City, the Philippines

This coffee e-Learning project explored the storytelling methodology in the instructional design of coffee lessons for agriculture students. The study is based on the assumption that the organic storytelling of olden times was obstructed as the world was modernizing. However, this rich oral tradition can be reclaimed and reconfigured by introducing a cultural intermediary as the new storyteller, bringing forward individual's and society's stories and connecting them to form enduring social relations. Maguire and Matthews' (2012) theory on cultural intermediaries was used to describe the functions of development communication education in (1) framing the educational content; (2) using it to design the right learning technology based on learners' needs and contexts; and (3) ensuring that the e-Learning system would have a high impact on its target learners.

Two surveys were conducted to determine learners' needs, contexts, and media use and preferences. The results showed that learners used mobile phones and watched movies and videos through their preferred medium. They preferred a series-like or episodic manner of presenting stories. Among the characterization, storytelling, visual images, conflicts and theme features of movies/TV series, they ranked storytelling top and found it appealing. Based on the information gathered from learners, coffee lessons were designed according to episodic stories and the manner of delivering instruction was through a downloadable mini-story video.

This coffee e-learning project contributes to strengthening the coffee industry in the Philippines by promoting coffee growing among agriculture students.

The Effect of Mobile Learning Implementation Experience on High School Teachers' Self-efficacy in Promoting the PYOD Strategy

Chiu-Lin Lai and Gwo-Jen Hwang

National Taiwan University of Science and Technology
Taipei, Taiwan

Hui-Chun Chu

Soochow University
Taipei, Taiwan

In recent years, the issue of BYOD ('Bring Your Own Device') has been widely discussed and considered a potential approach for promoting technology-enhanced learning. However, for many developing countries, some problems need to be coped with for implementing BYOD. One of the difficulties is the burden on students who come from families with limited finance; and another is the teachers' anxiety due to a lack of relevant experience. To address these issues in Taiwan, the PYOD ('Prepare Your Own Device and Determination') strategy was proposed and put into practice to help high schools to implement mobile learning using a balanced way of preparing mobile devices by the students and schools (i.e. the mobile devices can be fully or partially prepared by the students and the schools with a set of negotiated regulations to define the rules for using mobile devices in schools). It also involves training school teachers in a series of planned courses and meetings. In order to understand the teachers' self-efficacy in implementing PYOD, in this study a questionnaire on self-efficacy in employing PYOD-based mobile learning was used to collect the perceptions of high school teachers. A total of 318 teachers who had conducted the PYOD-based mobile learning activities responded to the questionnaire. Using Pearson's correlation analysis, it was found that the teachers who had longer experience in implementing PYOD showed higher awareness of the value and importance of conceptual understanding, higher-level thinking, professional skill and practical problem-solving skill development, social interaction, and self-efficacy. By using a one-way ANOVA test, it was found that the teachers who implemented PYOD more in their class showed significantly higher self-efficacy in implementing mobile learning than those who used it less. These findings provide a good reference for those countries and schools which are considering the use of mobile learning. Also, it is worth investigating students' learning outcomes from different perspectives in the future to further understand the impact of PYOD.

Effect of MALL on College English Vocabulary Learning

Zhenzhen Chen

Peking University and Beijing University of Posts and Telecommunications
Beijing, China

Jiyou Jia

Peking University
Beijing, China

Vocabulary is the building block for language learning. The mobility and ubiquity of mobile learning affords language learners a special advantage in vocabulary learning and, not surprisingly, vocabulary has received a great deal of attention in MALL studies. However, previous MALL studies have tended to be flawed, with short duration times and a lack of curriculum integration. This study adopts a quasi-experimental design in a naturally occurring environment to investigate the effect of mobile-assisted language learning on college English vocabulary learning. A Moodle-based vocabulary learning platform was designed to support students' informal vocabulary learning. All the words were selected from the students' textbook which formed part of the curriculum requirement. Fifty-nine first-year students from an engineering university in Beijing participated in a mobile-assisted vocabulary learning project which lasted for a semester; and 60 students in another class used a traditional learning approach. Data were collected from vocabulary pre- and post-tests, as well as response times in these tests. Students' grades in the final exam were also gathered for analysis. The results showed that mobile-assisted vocabulary learning can significantly improve students' vocabulary automaticity and overall learning outcome, but the effect on improving their vocabulary gains was not significant. The findings seem to suggest that mobile learning alone is not enough to support long-term vocabulary retention, but mobile learning is effective in improving automaticity which, in turn, contributes to the overall English learning outcome. This study can shed some light on the possible mechanism through which mobile-assisted vocabulary learning has an effect on learning; and it also provides some insights for those who are considering the implementation of a mobile-assisted vocabulary programme in their curriculum.

Planning to Implement Change: Strategic Pillars to Lead Mobile Learning in the Secondary School Environment

Sofia Moya and Mar Camacho

Universitat Rovira i Virgili
Tarragona, Spain

Innovation in learning for future education often includes digital approaches, as catalytic converters to enhance learning and contribute to the development of 21st century skills — such as creativity, innovation, critical thinking, communication and citizenship. For years, accessibility and affordability have been crucial barriers to technology integration in education, but today mobile devices are ubiquitous. There is a need for innovation for future education in the mobile-learning era. However, there is a lack of successful frameworks in secondary education that contribute to highlighting its rewards. This paper focuses on the research question: What are the main characteristics of a strategic management framework for the adoption and sustained use of a learning strategy for secondary schools?

This study was based on a systematic broad literature review on strategic management and mobile learning that included 53 academic publications. The results showed the lack of research in the field specifically in secondary school contexts. As an output, a prototype conceptual framework for the sustained adoption of mobile learning has been developed. This framework is upheld by five interrelated key pillars that orchestrate the research findings.

Analysis of College Students' Requirements for an E-book on Mobile Learning

Jiayu Yuan, Ningsheng Ma, Kai Fang, Chen Ni and
Xiaoting Shao

Tongji University
Shanghai, China

With the increase in mobile devices, digital publishing and e-books have quickly grown in popularity. The application of e-books in teaching promotes the diversification of teaching forms, which can help students to use fragmented time for mobile learning. The participants in this study were undergraduates attending college physics experiment classes and optical experiment classes in Tongji University. The objective of this study was to learn these undergraduates' requirements for e-books in the mobile learning process. The research was conducted with questionnaire and interviews to collect relevant information. Although these students had different experiences in using e-books, they still had many similar requirements for them. This paper provides an overview of e-books' requirements for the discipline based on mobile learning. The results of this research should help in the development of e-books for teaching experimental courses. This will make e-books more effective and students can learn more effectively as well.

Incorporating E-learning Innovation into the Delivery of Secondary Education in Developing Countries: The Case of Tanzania

Francis Oscar Haule and Chika Yoshida

Kobe Institute of Computing
Kobe, Japan

The great increase in the number of secondary schools in Tanzania — following the government's initiative to expand the reach of this level of education by building a secondary school in each ward all over the country — has come with a number of challenges. Some of these challenges are the shortage of teachers and the scarcity of learning resources, such as books; the lack of important infrastructures, such as science laboratories and libraries; and the failure of the government to properly monitor and control its schools. These difficulties have led to poor delivery of education in these public schools, which in turn has resulted in the mass failure of students in their final examinations for a number of consecutive years. The aims of this study were to examine the actual current learning situation in Tanzania more closely, and explore the country's readiness to take advantage of technological advances and incorporate e-learning innovations to mitigate some of the challenges in delivering secondary education. Primary data were collected by a questionnaire and interviews, and secondary data through a literature review. The primary data were analyzed quantitatively using SPSS and excerpts from semi-structured interviews were used to strengthen the results. Through the on-going research in this study, a prototype for the desirable e-learning solution for secondary schools in Tanzania was developed.

A Study on Project Management Competency Training for New Immigrants for Community Empowerment in Kaohsiung Linhai Industrial Park

I-Chan Kao, I-Hsiang Hu, Shuo Lee and Pei-Chen Chuang

Open University of Kaohsiung
Kaohsiung, Taiwan

This study aims to integrate the six-star project created by the community and the current policy of five plus two in the Executive Yuan to create a project management environment for the communities of new immigrants who live near a school, including Kaohsiung Linhai Industrial Park in Siaogang District and Qianzhen District in Kaohsiung City. It involves functional training, combined with professional training and certification of international professional functions, national tour guides and assistants, and other professional training and certification. The implementation plan includes the beautification and afforestation of the community-cum-family environment by volunteers; the cultivation of organic farming; law and order; care by mutual assistance; the construction of a multicultural arts centre in the industrial zone; and the integration of newcomers' cross-cultural digital learning resources. It also involves sightseeing and guide functions, as well as project management training conducted by the community's new resident volunteer team. The results of this research are expected to help new immigrants to build a stable and high-quality environment for community life; enhance the effectiveness of community development; and build a good community for multi-ethnic group harmony and mutual assistance based on the project management methods and processes.

Unlocking the Potential of Open Educational Resources: Where We Are Today and How We Can Address the Challenges

Tianchong Wang

The Chinese University of Hong Kong
Hong Kong SAR, China

Dave Towey

University of Nottingham Ningbo China
Ningbo, China

The harnessing of open educational resources (OERs) — teaching, learning, and research resources that have been made available to be used, shared, and modified freely — has become a promising direction for achieving universal access to high-quality education, and is viewed as a potential means for meeting the United Nation's Sustainable Development Goal 4 (SDG4) of the Education 2030 Agenda ('ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all'). Although education leaders and policy-makers have shown commitment through advocacy and development at system- or institutional-levels, OER usage is not yet as widespread as might have been expected — there are, as with any new paradigm, a number of obstacles and interlaced factors hindering their wider influence. This paper presents a review of OER adoption in higher education, highlighting some of the key issues and challenges. Strategies, both current and potential, that could further facilitate OER adoption are examined and analysed.

Relationship between Emotional Intelligence and Academic Performance of UPOU Undergraduate Online Learners

Margaret Jarmin Suarez

University of the Philippines Open University
Los Baños, the Philippines

Emotional intelligence (EI) is a current topic of discussion in the field of education and is often considered as a predictor of academic performance. Several research studies have claimed that EI predicts success in schools and universities, but little empirical research has been conducted to test this statement, especially in the field of open and distance e-Learning (ODEL). This study examined the relationship between (i) emotional intelligence in its four specified domains — namely, Intrapersonal Awareness, Interpersonal Awareness, Intrapersonal Management and Interpersonal Management — which were measured by SK Mangal and Shubra Mangal's EI Inventory (MEII) and (ii) academic performance (assessed through GWA). The respondents in this survey research were UPOU undergraduate online learners in their final year in the Bachelor of Arts in Multimedia Studies programme in the academic year 2017–2018. An appropriate statistical tool (ANOVA) was employed to determine the relationship between the two variables. In its four specified domains, EI, both separately as well as totally, was found to be positively associated with the academic performance of the respondents. It is recommended that the findings of this research are used to develop strategies to improve the academic performance of undergraduate online learners in the UPOU. Further implications, recommendations and limitations of the study are also discussed.

A Study of a Course on Career Planning for Adult Learners

Chiang Min-huang

National Kaohsiung Normal University
Kaohsiung, Taiwan

This study aimed to investigate the effects of taking a career planning course to explore the careers of adult learners and help their lives flourish. A questionnaire for surveying adult learners' perceptions of career development was adopted as the research tool for data collection. In the first semester of this class, both a pre- and post-test were used with 60 subjects. For the pre-test, 41 copies of the questionnaire were returned, and for the post-test 45 were received. A t-test was used to analyze the data and examine the differences between pre-test and post-test scores. A blend of quantitative and qualitative research methods was employed in this case study as, in addition to the pre- and post-tests, ten students out of the initial 60 were interviewed. In addition, students' feedback on their learning was gathered to enhance the validity of this study.

The major findings were as follows. Firstly, the highest level of adult learners' perception of career development was "career awareness". Secondly, on the dimension of "others' support", the older adult learners felt more important than the groups they encountered. Thirdly, after the adult learners had completed the "career planning" course, their self-awareness improved significantly. Overall, the results of this study could provide adult education agencies with a curriculum planning reference for career planning courses.

An Analysis of the Learning Efficacy of Open University Students' Participation in 'Flipped Learning': A Case Study from the Open University of Kaohsiung

I-Chan Kao, Shuo Lee and Pei-Chen Chuang

Open University of Kaohsiung
Kaohsiung, Taiwan

This study focuses on the students of the Open University of Kaohsiung (OUK) and aims to understand their learning experiences when engaged in the flipped learning model. The model is comprised of three successive steps, which are: (1) online learning prior to classroom interaction; (2) classroom interaction during the semester; and (3) evaluation and counselling after the class. By conducting questionnaires, this study analysed students' satisfaction with respect to the flipped learning model; the enhancement of their professional skills; their application of knowledge to work fields; and their work performance. The collected questionnaires were analysed through SPSS as a way of understanding OUK students' responses to teachers' teaching strategies and their learning. This study provides the outcomes of the OUK's flipped learning model experience and, based on the outcomes, presents suggestions that may elevate students' learning effectiveness.

Accreditation of Prior Experiential Learning (APEL): An Alternative Entry Route to Higher Education in Malaysia

Sheila Cheng and Heng Loke Siow
Asia e University
Kuala Lumpur, Malaysia

In general, all parents, rich or poor, want their children to go to school and receive the best education they can afford. However, in reality, not all children are blessed with this opportunity for many reasons, mainly financial. Studies have revealed that educational attainment is a critical determinant of economic progress (Ariagada, 1986; Barro, n.d; Barro and Lee, 2001; Cole and Geist, 2018; Psacharopoulos and Ariagada, 1986). According to statistics from Human Resources Malaysia 2016, 20.8% of youths (15–24 years of age) and 29.2% of adults (aged 24 to 65) attained the tertiary level of education, indicating that Malaysia still has a lot of room for improve in its economic development. In order to encourage more eligible candidates to upgrade their education level and, at the same time, promote lifelong learning, the Ministry of Education Malaysia launched the APEL (Access) in 2011, as an alternative entry into tertiary education. This paper aimed to compare the academic performance in the undergraduate degree programme between the entrants admitted through APEL (A) and those who came through the standard academic admission route. Although there is extensive literature on the recognition of prior experiential learning (RPL), few researchers have looked at the relationship between entry route and academic performance, especially in Malaysia. A sample of 30 undergraduate adult learners were selected from a private institute of higher learning in Malaysia; and a comparison of their academic performance with standard route entrants in a selected semester was conducted. The study showed that there was no significant difference in the academic performance between the two groups, with adult learners performing as well as the young learners. These findings could help to build confidence in educators and policy-makers in accepting and giving a second opportunity to adult learners to pursue their educational dream.

The Relationship between Open University Teachers' Instructional Strategies and In-Service Students' Learning Outcomes

I-Chan Kao, Shuo Lee, Pei-Chen Chuang
Open University of Kaohsiung
Kaohsiung, Taiwan

This study treated in-service students in the Open University of Kaohsiung (OUK) as subjects, and explored their views on teachers' instructional strategies in lectures, group discussions and online instruction. It examined the impact on the enhancement of learning outcomes such as learning satisfaction, knowledge, behavioural application and job performance. A questionnaire survey (both paper and online) was conducted, and 350 questionnaires were distributed, with a valid return rate of 85%. The data were analysed statistically by descriptive statistics, t test, one-way ANOVA, and product-moment correlation. According to the findings, in-service students in OUK perceived a significant and above average correlation between the teachers' instructional strategy and the enhancement of learning outcomes. The effects on increasing learning satisfaction and knowledge were the highest, and the impact on behavioural application and job performance were at a medium level.

Achievements and Challenges: An Investigation of the Industrial Workers Education Programme of the OUC

Xiangxu Wang

Open University of China
Beijing, China

Along with the adjustment of China's industrial structure, the shifting and upgrading in its economic growth model, the closure of outdated production capacity, and the international competition driven by digitalization and informatization in this new era of globalization, the new generation of Chinese industrial workers are now facing more and more requirements not only for vocational skills, but also for literacy and educational experience. In order to implement the central government's strategy on vocational education and meet the educational requirements of Chinese industrial workers, the Open University of China launched an 'Assistance Plan for the new industrial workers' cultivation and development' in the autumn of 2014. By providing many more flexible and accessible degree or non-degree education programmes, the goal of the 'Assistance Plan' is to help the new generation of industrial workers to improve their cultural quality, professional ethics and vocational skills — and to enhance their adaptability and innovative ability, so that they can have a more stable employment. It also aims to make it easier for the enterprises and factories to promote their transformation and upgrading; narrow the gap of economic and social development between urban and rural areas; speed up the pace of industrialization and urbanization of the whole nation; and build a richer society in an all-round way.

The aim of this article is to demonstrate the achievements and challenges of the 'Assistance Plan'. The methodology of this study was based on document analysis, case studies and survey research, obtaining primary and secondary data through questionnaire, observation and interviews. The questionnaire was delivered to and returned from 12 provincial branches of the OUC. Samples of the case studies were selected from five provinces in China — Tianjin, Shandong, Hubei, Jiangxi, and Guangdong — including consultations and interviews with managements, teachers, and students in the local areas. The data collected showed that considerable achievements have been made, such as that the student enrolments is good and some majors are very popular. Strong support from the central and local governments has promoted reform of the teaching and learning model of the OUC; improved the construction of the curriculum platform and the reform of curriculum contents; facilitated the implementation and practice of the 'credit bank' system; explored the mechanism of cooperation with industry associations and corporate universities; and improved learners' employment quality

and professional potential through promoting their knowledge and skills. However, there are still some problems and deficiencies in the implementation of the 'Assistance Plan', such as: the lack of a relevant supporting policy in some provinces; system inefficiency; insufficient teaching staff and funds; and the need to redesign some courses to resolve the problems caused by the conflict between working and learning.

Research on Factors Influencing the Implementation of E-learning in Postgraduate Programmes

Nan Wang and Yuxian Xiao

Beijing University of Posts and Telecommunications
Beijing, China

The advantages of e-learning have been recognized and widely used in the education and training sector in China. However, limited research has been done on the factors affecting the effectiveness of e-learning from the students' perspective at the postgraduate level. The purpose of this study is to explore the key indicators which have an influence on the postgraduate e-learning mode. Eight indicators — learning ability, learning perseverance, learning methods, tutoring, learning evaluation, perceived ease of use, perceived usefulness, and attitude — were found based on a literature review. A 48-item questionnaire on e-learning indicators was designed and validated by six professionals in e-learning from four universities in Beijing. Eighty-nine postgraduate students were invited and completed the questionnaires. It was found that all eight indicators could be classified into three dimensions, which were self-efficacy, learning support, and technical acceptance. It is hoped that the result of this study can provide a reference framework for establishing an e-learning mode for postgraduate programmes.

开放大学在线教育发展战略评估

吴亚婕及李哲

北京开放大学，中国北京

随着1+5所开放大学相继挂牌成立，标志着广播电视大学正式转型发展，全力建设开放大学。教育部对办好开放大学提出指导意见，新型高校、服务全民学习、质量第一、“宽进严出”成为开放大学建设的关键词。但开放大学将如何实现发展目标与主要任务，特别是如何通过审核战略实施进程来判断战略可行性、是否达成预期目标，对调整开放大学战略制定尤为重要。本文通过系统梳理国内外开放大学战略评估内容，并结合国家关于开放大学建设的政策文件，采用战略地图、平衡记分卡等方法，确定开放大学战略评估框架。作者希望本文能够为开放大学在线教育发展战略制定提供新视角和新思路。

中国开放学习研究趋向分析——基于《开放学习研究》2012–2017年的统计分析

刘春萱及吴亚婕

北京开放大学，中国北京

新世纪教育最为重大的变化是从“以教为中心”向“以学为中心”转变，从而推动了教育者和学习者聚焦更加开放的学习。

《开放学习研究》作为开放学习发展的观察者、记录者，一直定位于传播开放学习前沿理论，推介远程教育创新实践，探索终身学习发展趋势。本文主要采用内容分析法，以2012~2017年在《开放教育研究》上发表的所有学术论文为分析对象，从文献量、作者及研究机构、研究领域、研究方法、研究主题、研究热点等方面对文献进行统计分析，较深入地阐释了国内开放学习领域的研究现状与主要研究内容，对开放学习发展趋势做出预测，为今后开放学习研究提供参考。

The Development and Implementation of a Distance Learning System on Documenting the Local Culture's Indigenous Political Structures in an Aeta Community in the Philippines

Edmund Centeno, Edgar Bagasol Jr and

Samantha Johanna Timbreza

University of the Philippines Los Baños

Laguna, the Philippines

This study analyses the instructional design process undertaken in the development and implementation of the distance learning system — *DokumenTAYO: Ku'nan Natin, Kulturang Atin (Capture Our Own Culture)* — in facilitating a course on basic video documentation among selected Aeta youth leaders and teachers in an indigenous community in Zambales, the Philippines. Guided by the ADDIE model of instructional design, *DokumenTAYO* sought to train selected learners in capturing local culture and documenting indigenous political structures. Based on the results of the learning needs assessment conducted during the analysis phase, four lessons on video documentation were developed. These lessons were delivered using a video series, websites, and print modules. A Facebook group was also created to promote interaction between the facilitators and the learners, and among the learners. Overall, 24 learners selected by the tribe's elders completed the course. To assess their learning achievement, lesson assignments were given, video projects were evaluated, and the pre- and post-test scores of the learners were compared. A survey was employed to examine their level of satisfaction and participation.

Research on Supply-side Structural Reform of Open and Distance Education for Rural Areas in China Based on the Learner Characteristics of the 'One College Graduate per Village Programme'

Li Guangde, Zhang Zhijun, Fu Jinfeng and Zhao Yanfei
The Open University of China
Beijing, China

Cultivating professional farmers in the new era lays a solid foundation for agricultural modernization in China, while an effective way to implement this is to develop higher education in rural areas using open and distance education (ODE). For doing so, the Chinese National Ministry of Education launched a pilot programme *One College Graduate per Village* in 2004, which has been organized and implemented by the Open University of China (OUC) since then. Until the end of 2017, after 13 years, the programme has trained and cultivated more than 426,000 professional farmers who have upgraded their technical and administrative skills and are willing to stay and contribute to the rural areas. This, to a certain extent, has promoted social justice in China. The idea of being 'learner-centred' in ODE emphasizes the learners, and their characteristics, especially for farmer college students.

For this paper, data were collected by questionnaire, and surveyed the learner characteristics of 655 farmer college students in ten provinces of the 'One College Graduate per Village Programme'. The learner characteristics included sex ratio, age, occupation, political status, nationality, motivation, learning habits, factors influencing learning initiative, difficulties, and the learning environment. Based on the analysis of these learner characteristics, the following advice on sustainable development of the programme is offered: clarify the development ideas and strengthen the top level of design; deepen teaching research and boost teaching reform; strengthening the teaching support and service systems; promote structural reform of the supply side; and improve the quality of personnel training.

Developing Presentation Boot Camps for Undergraduate Students

Peter Carter, Etsuko Kakimoto, Jeff Anderson and Kaori Miura
Kyushu Sangyo University
Fukuoka, Japan

Presentation boot camps (PBCs) are a popular method for boosting career skills. However, there are few opportunities for undergraduate students or other people with limited access to funding. The purpose of this paper is to provide an example of a highly flexible, yet inexpensive, extra-curricular PBC and show why such an approach may be necessary for current undergraduate students as a supplement to their normal classes. We provide two examples of our work: one aimed at our original target of undergraduate students, and a subsequent attempt at making a more open approach through inviting high school students to participate. Due to high interest on the part of our institution's administration, we were able to purchase equipment especially for future iterations of the boot camp, and we demonstrate how this can play a role in helping students to understand the importance of an awareness of their audience. We specifically address adding a virtual reality (VR) component to presentation skills training.

Transforming Low Academic Achievers through Learning Design

Pamela M. H. Kwok
PolyU Hong Kong Community College
Hong Kong SAR, China
Paula Hodgson
The Chinese University of Hong Kong
Hong Kong SAR, China

All educators share a common challenge: that every cohort of students is a mix of high and low academic achievers. Engaging everyone at the same pace of learning is therefore impossible. However, with learning design activities, learners can gain conceptual knowledge and professional skills through the assimilation of information, communication with their tutor and peers, the application of concepts in real-world or simulated settings, and a mixed mode of assessment (Rienties and Toetenel, 2016). Many low academic achievers commonly have low self-perception, low motivation and a lack of self-regulation for academic study (McCoach and Siegle, 2001). This paper explores the problems faced by learners in the bottom quartile studying service marketing in a community college in Hong Kong. Unobtrusive observation was carried out through tracking in-class participation in discussions, weekly online exercises (self-evaluation), and weekly online videos. Early detection of these students could be observed in a mid-term test. To address the learning challenges, the teacher carried out individual consultations to address individual needs and provided additional time and effort to motivate students to learn through the learning design of the subject. They subsequently made significant improvements in their final examination and recorded high satisfaction about their performance.

How Do Japanese Students Evaluate Video Lectures in Commercial E-Learning Systems?

Yoko Hirata and Yoshihiro Hirata
Hokkai-Gakuen University
Sapporo, Japan

Recent technological developments and advances in mobile technology have led to the ubiquitous adoption of e-learning systems around the globe. Even in Japan — where teaching approaches remain largely conventional — this technology is beginning to see widespread use. Typically, these systems, which may be referred to as “courseware”, provide learning exercises in combination with various multimedia contents. Research has shown that courseware encourages students to engage more fully in their learning, enjoy their classes more, and develop more positive attitudes towards their learning (Khedif et al., 2014). However, such benefits are not guaranteed compared to conventional learning methods and materials. The quality of the courseware is critical, and nowhere is this more evident than in video lectures — a common multimedia component included in many e-learning systems. This study outlines Japanese students’ evaluations of the courseware they used as part of their university English language course: courseware which emphasizes learning through video lectures. The results indicated that students valued the video content differently depending on their study predilections and goals. While some students appreciated the videos for their well-organized and delivered content, as well as the freedom to learn independently, others criticized the monotony of the lectures, which they considered boring and fundamentally disconnected from the accompanying exercises. This study reveals that, while video lectures provide some obvious benefits, such as portability and efficiency, in order to truly benefit students’ learning and engagement, they must add value by being more entertaining and active, or otherwise intellectually stimulating compared to a mere recording of a lecture. Otherwise, they are an insufficient replacement for a real-life teacher.

Enhancing Advertising Students’ Performance with Competition-based Learning

Mei King Yang
Technological and Higher Education Institute
Hong Kong SAR, China

This study aims to investigate whether Competition-based Learning (CBL) can effectively enhance advertising students’ knowledge for future market challenges and improve their creativity, time management and collaborative skills. The data collection in this case study involved three sources: a student survey, evaluation of students’ competition deliverables, and focus group interviews with students. The findings indicated that CBL was a valuable experience for students as it not only broadened their understanding of the advertising industry, but also enabled them to apply knowledge in authentic environments. The CBL motivated students to study and practise. In view of the positive findings, it is suggested that CBL should be considered to be an important pedagogy for teaching advertising.

Determinants of Satisfaction with the Learning Materials Associated with Tutorials, Exams and Grades

Maximus Gorky Sembiring
Universitas Terbuka
Tangerang, Indonesia

This study explored what determines satisfaction with the learning materials associated with tutorials, exams and grades in Universitas Terbuka. It aimed at validating how and in what way all the factors involved were interrelated to one another. The paper was completed using an exploratory design (mixed methods). First, it was qualitatively established that satisfaction with learning materials was reflected in the writer, accuracy, significance, structure, readability, interactivity, utility and presentation (which later became independent variables quantitatively). Satisfaction (as the moderating variable in a quantitative approach) led to tutorials, exams and grades (which became dependent variables in the quantitative approach). This structure was previously completed based on reviews and focus group discussions prior to performing the survey. Statistically, it was hypothesised that satisfaction was influenced by the independent variables and had an effect on the dependent variables. Methodologically, an important performance analysis (IPA) and a customer-satisfaction index (CSI) were both utilized concurrently to measure the satisfaction level and its degree of importance. Eleven hypotheses were developed and then assessed in the structural-equation model (SEM), and they were all validated by the analysis. It was inferred that readability was the most influential factor for satisfaction. Also, the grades were mainly influenced by satisfaction, followed by exams and tutorials. Using IPA-CSI chart analysis, it is suggested that being self-instructional and learner-focused were the two main characteristics of quality learning material and most respondents encountered them with satisfaction. Essentially, the qualitative configuration was positively supported by the quantitative result.

An Interactive Flexible Blended Learning Mode in an Organic Chemistry Course

Chui-Man Lo and Kwan-Yee Tang
The Open University of Hong Kong
Hong Kong SAR, China

In general, traditional chemistry courses include lectures, tutorials and laboratory sessions. The OUHK undergraduate course *CHEM S405F Advances in Organic Chemistry* covers a wide range of advanced information in organic chemistry, including reaction mechanisms, strategies for synthetic methods, and their applications to the synthesis of natural products. The purpose of this course is to help students to develop advanced knowledge of synthetic tools, and to learn how to apply these theoretical strategies to real examples.

We tried to develop a blended learning mode with e-components in this course, in an effort to combine the best features of the traditional distance learning and face-to-face modes of teaching with the incorporation of multimedia videos (demonstrations of laboratory techniques and experiments) and interactive web-based components (an online lab quiz, an interactive discussion board and an electronic copy of study units). In this course, we would like to enhance and develop students' ability to understand and perform chemistry experiments. It is better to prepare these materials in multimedia videos as the demonstration of experiments can be described more clearly than with just using textbooks and lecture notes. Students can perform laboratory experiments by themselves in laboratory classes after learning these techniques from the videos.

Acknowledgement: We would like to express our gratitude to Dr Chin-Wing Chan, Dr Eva Tsang and Ms Misty Choi for their suggestions and technical supports for developing the blended learning mode for the OUHK undergraduate course *CHEM S405F Advances in Organic Chemistry* in September 2012.

Improving the *Laboratory Experience in Biology* Course by Focusing on Critical Thinking and Experimental Skills

Haiyan Zhu and Qunxing Ding
Kent State University at East Liverpool
Ohio, the United States

Scientific laboratory courses are difficult to teach, although some virtual laboratory programmes and computing tools have been developed. The college level course *Laboratory Experience in Biology* for non-biology majors is an essential component of STEM (Science, Technology, Engineering, and Mathematics) education to expose students to laboratory experience and improve their hands-on skills. This course, which has been offered at our campus since 2009, was challenging to develop, but a rewarded experience for the instructor to ensure that the students understand a wide range of biological concepts in a classroom setting. This paper discusses the preliminary results with redesigned and reorganized experimental protocols. The data suggested that there was improvement in learning interest and practical skills in preparing students for future careers, a healthier lifestyles, and the ability to resolve practical problems beyond the course content — which may pave the way for a new direction for open resources development.

利用在线学习系统开展混合式教学：一线教师的方法及其效果调查

张静蓉，张必兰及贾积有
北京大学教育学院，中国北京

本研究对来自不同学校的13位老师进行了半结构化访谈，分析一线教师如何利用个性化在线学习系统（乐学一百）开展混合式教学，以及教师对该教学方式的应用效果评价。研究发现，教师在学习的各个阶段都使用该系统，如课前预习、随堂练习、课后练习等。他们认为该混合式教学方式，以及学习系统的引导、答疑、乐币兑换等设计提高了中小学生学习数学的兴趣与主动性，进而提高了数学成绩。不仅如此，教师也反映系统中作业布置、自动判分、错题知识点分析等功能减轻了教师的教学负担，但在实行过程中也遇到了学生在线学习过程难以控制、教学设备不支持、学习内容不完善等诸多困难。同时，本研究通过对教师访谈的总结，对该学习系统在平台功能、界面、学习内容上提出了改进意见，以便对系统进一步完善，以符合一线教师实际需求。

From SPOC to MOOC: Innovative Exploration of Computer-assisted English Language Learning

Yanhui Han, Yanxia Yu, Xiaoling Zhu, Zhipeng Zhang,
Huashi Fu, Junyan Tian, Peitong Xu, Yiqun Fang,
Wenjie Zhang and Jie Yang
The Open University of China
Beijing, China

In recent years, with the rapid development of international online education, especially MOOCs, the Chinese government has paid more and more attention to online education and given it full recognition in national strategy. In line with the historical trend, the Open University of China (OUC) started to develop online education in 2013, especially with the timely launch of the talent training model reform: 'Six-Online Integrations' (integrations of online core courses, online teachers' teams, online learning support, online learning space, online teaching management and online tests and assessment). In the background of educational reform, Han Yanhui led the teachers' team for *Computer-assisted English Language Learning* in the OUC schooling system to carry out an exploration of a teaching reform — the 'cross-region, one-stop, team-based online facilitation' (CROSTEFA) model — which tried to solve some system problems left over from the earlier Radio and TV University (RTVU). On the basis of SPOC exploration of academic education, the MOOC exploration of non-academic education also tried to solve some difficulties encountered in the development of MOOCs around the world, so as to ultimately achieve improvement in the quality of education. Using qualitative and quantitative research methods, a study of SPOC and MOOC in *Computer-assisted English Language Learning* has been conducted in the past four years and found that the CROSTEFA model can help to solve some problems in both RTVU's and MOOCs' development and improve the quality of education. This paper provides a useful reference for the OUC's transition to web-based teaching and learning and provides some enlightenment on the sustainable development of MOOCs.

Research on the Factors Influencing Adult Learners' Online Learning Behaviours: English Programme Learners from Shanghai Open University and the Open University of Hong Kong

Lamei Wang
Shanghai Open University
Shanghai, China

This research compiled relevant research results on the factors influencing learning behaviours both at the Open Universities in Shanghai and Hong Kong, and built a model for these factors for adult learning behaviours based mainly on the UTAUT theoretical model. On this basis, relevant study assumptions were considered and questionnaires were designed. The learners on elective English courses in the 2017 autumn semester at Shanghai Open University and the Open University of Hong Kong are taken as examples. Statistical analysis was carried out on the subjective data collected from 1,207 learners through questionnaires, and on objective data gathered from 5,898 online learners. In combination with interview analysis, this study finally concluded that the main factors influencing adult online learning behaviours include performance expectancy, effort expectancy, self-efficacy, technological facilitating conditions and resource facilitating conditions.

Learning about Nature by Engaging Students in Field Visits Using Mobile Apps Field Guides and Social Media Communication

Chin Cheung Tang and Kam Chau Wu

The Open University of Hong Kong
Hong Kong SAR, China

GEN S213F Nature Conservation: Exploring biodiversity and nature landscapes of Hong Kong is a specially designed general education course with a field visit component. The course is designed for full-time undergraduate students in non-science disciplines, and aims to introduce natural conservation in Hong Kong. It develops students' knowledge of biodiversity and nature landscapes in local terrestrial, wetland and marine ecosystems. The concepts of natural conservation are introduced, including the history and aims of setting up country parks, marine parks and a geopark in Hong Kong. To enhance the unique interactive experimental learning in the course, mobile apps field guides and social media communication are used in the field visits to increase students' understanding about species diversity that is encountered. Mobile apps field guides include 'PlantNet Plant Identification' and 'HKcBirds' to identify the species of plants and birds respectively. WhatsApp-Groups were created in 'WhatsApp' to instantly share the names and photos of the species in the field. With the assistance of mobile apps field guides and social media communication, it is aimed to (1) make the course intellectually stimulating; (2) make the subject taught interesting; and (3) increase the students' satisfaction with the course. The effectiveness of this component is evaluated in the course evaluation by the students; and evaluation results are also compared with other selected science general education courses without these components. It is hoped that the enhanced experimental learning design of the course with mobile apps and social media communication assistance will generally engage the students.

Knowledge Modelling Map: On the Rationality of Learning Content Analysis in Instructional Design

Bo Li and Kaicheng Yang

Beijing Normal University
Beijing, China

Learning content analysis is a key part of instructional design, which is the basis for designing teaching activities and teaching behaviour. A survey found that a considerable number of teachers were arbitrary and ambiguous at this stage, and even ignore it. This article describes the use of a Knowledge Modelling Map to analyse learning content, and then discusses how to improve the rationality of learning content analysis. Our research was based not only on the discrimination of knowledge mapping tools, such as mind maps and concept maps, and rigour, objectivity, effectiveness and mobility, but also on the study of a case on instructional design.

A Study on the Role of Social Media in Collaborative Online Learning

Yujen Ho

The Open University of Kaohsiung
Kaohsiung, Taiwan

Abstract. With the appearance of social media, which provide teachers and learners with a visual environment, distance education has become more analytical, flexible, interactive and collaborative. The purpose of this study was to examine how social media influence collaborative learning in terms of the role it plays for teams to coordinate their knowledge and collaborate effectively to accomplish their tasks in online courses. The subjects in this study were students from an open university. Two types of qualitative data were collected from online courses for analysis: (i) text posts of team discussion in a non-spontaneous online discussion forum offered by the university's iLMS learning system which can be accessed via smartphones; and (ii) those posted in LINE, a freeware app for instant communication on electronic devices. The process of data analysis was guided by phenomenological approaches in a constructivist paradigm. Significant statements were identified in the data. Meaning units were assigned to the significant statements, and then reviewed to remove duplication and grouped into themes. The results revealed that the iLMS online discussion forum and LINE both provided platforms for information sharing and processing. As regards the function of social interaction, the findings showed that social media enhanced team members' contacts and intimacy more than their interaction in the discussion forum offered by the online course website. In addition, LINE increases the possibility of team members' cooperation in future teamwork. It is also more possible to develop long-term partnerships through the students' interaction in social media. Suggestions are made on how to incorporate social media into the online learning system for more efficient collaborative learning.

The Impact of Using Social Media on Adult Web-based Cooperative Learning

Hsin-Ying Wu

The Open University of Kaohsiung
Kaohsiung, Taiwan

Feng-Teng Lin

Shu-Te University
Kaohsiung, Taiwan

To let learners realize the spirit of teamwork, cooperative learning can be used as a learning strategy. Because cooperative learning requires a lot of interaction among learners, a friendly online environment in which participants are willing to discuss is needed when applying this method in online courses. Although a general learning management system is usually equipped with discussion forums, fewer and fewer learners interact in the forum. With the popularity of smartphones, learners are accustomed to using them to surf the Internet and browse online courses. However, due to the smaller screen of the smartphones, it is not convenient to browse messages and responses in the forums, and so learners are less likely to leave comments on them. Instead, learners prefer to use mobile social media to interact with classmates. This study used mobile social media (LINE) to engage learners in online discussion. A coaching method based on the five-stage e-moderating model advocated by Salmon (2003) was used for the online interactive discussions. It was expected that the curriculum design of this study would make learners more willing to participate in discussion through interacting with each other in a cooperative learning environment. This study used action research to see if learners can improve their learning effectiveness and satisfaction through the designed curriculum. A Community of Inquiry framework was applied for content analysis of qualitative data and statistical analysis was used for quantitative data. This study provides a curriculum reference model for future instructors who would like to adopt a cooperative learning strategy in online courses.

An E-learning System for Upgrading the Smallholder Goat Farmers in Nueva Ecija, the Philippines

Marife De Torres and Parsons Hail
Central Luzon State University and
University of the Philippines Los Baños
Laguna, the Philippines

The use of ICT has been prominent in agricultural extension services in the Philippines in order to provide the necessary information services and technical assistance to farmers in compliance with the Agriculture and Fisheries Modernization Act. It is also being used to satisfy the limited but regular personal farm visits by municipal agricultural extension workers. However, this study explores the use of mobile phones as learning devices on goat management and production to respond to the needs of smallholder farmers in goat production, who comprise the majority of the country's goat industry population. Learning needs and situational analysis were conducted in order to develop a more relevant and context-specific ICT intervention. A review of the related literature was also undertaken in order to develop research-based criteria which could serve as the basis for designing a mobile-based learning system for the smallholder goat farmers in Nueva Ecija, the Philippines.

An Empirical Study on Knowledge-building Based on Problem Discovery in Teachers' Online Learning Community

Changcheng Wu
Central China Normal University
Wuhan, China

To adapt to the needs of education and teaching reform, 'Internet + education' promotes the professional development of teachers. In particular, it is necessary to enhance the practical knowledge-building ability of teachers in real situations and their skill in dealing with contingencies which might result in various educational problems. At present, there are various models for teachers' knowledge-building both at home and abroad. They are evaluated from the perspectives of social interaction, social construction, spatial existence, critical thinking and dialectical thinking. The knowledge-building models are more or less related to the ability in innovative thinking, but they seldom involve real problem situations and problem discovery, and they also lack problem-centred knowledge building. Based on the three dimensions of the online learning community environment — problem discovery, teaching design and teaching reflection — we explored problem-centred teacher knowledge-building, using the second-order three-factor structural equation model. The results showed that (1) Teachers were more concerned about students' learning problems and long-term goals in the problem-finding dimension; (2) there were significant differences in teaching design between male and female teachers; and (3) Teachers reflected individual dimensions in their individual teaching. Reflection on teaching and awareness of problems need to be improved in the future.

A Proposed E-portfolio System to Keep Study Activities for VETA Students in Tanzania

Paschal Mgimwa and Yi Sun
Kobe Institute of Computing
Kobe, Japan

Portfolios not only assist students to improve their careers, but can also be used to showcase their achievements to prospective job recruiters when trying to find jobs. In Tanzania, it takes about three years of vocational education under the competence-based assessment (CBA) system for trainees to complete their studies, and almost 70% of class activities are oriented to a practical form. It is easier for students to capture short videos and pictures of their practical class activities and use them to make portfolios. This paper focuses on combining Moodle as a learning management system (LMS) and WordPress as a blogging tool. These merged systems enable VETA (Vocational Education and Training Authority) vocational trainees to access their graded assignments stored in Moodle via WordPress so that they can build their own portfolios or blogs in WordPress and access them as evidence during interviews with job recruiters. This method helps them to access jobs in the highly competitive labour market in Tanzania.

Using 'Kahoot' in Law School: Differentiated Instruction for Working Adults with Diverse Learning Abilities

Daniel Seah
Singapore University of Social Sciences
Singapore

This paper explores the benefits of using a game-based learning app to assess the learning progress of law students with diverse learning abilities. The School of Law at the Singapore University of Social Sciences is an innovative law school with a practice-oriented mission. It trains legal practitioners to represent the vulnerable and disadvantaged in the areas of family and criminal law, and the law school consciously enrolls students who are working adults with some experience in both fields. Classes are conducted in the evenings during weekdays and contact time for each course with the lecturer is about three hours. One corollary of the law school's enrolment approach is the considerable variation in the students' learning aptitude. A good number last attended formal education more than a decade ago; and others experience difficulties in adapting to the intellectual demands of legal studies at a degree level. A few struggle with the law school's persistent inculcation of legal reasoning and strong proficiency in English, which are essential legal skills. The author's principal challenge is to teach tort law at a suitable level, which caters at once to the gifted and uninitiated students. A game-based learning app, Kahoot, is used in every class after 20 minutes of teaching. Three multiple-choice questions are created to test complex concepts, and Kahoot generates statistics to indicate how the students fared. The lecturer uses the statistics to assess the level of understanding and reinforce learning by explaining the poorly answered question on Kahoot. The anonymity accorded by Kahoot allows students to participate actively. As the course progressed over 12 weeks, the lecturer invited students to share their reasons for choosing the correct and wrong answers. This differentiated learning approach, advanced through Kahoot, promotes student-centred learning which appears to be reflected in the quality of their written assessments.

Traditional Higher Education Engineering versus Vocational and Professional Education and Training: What Can we Learn from Each Other?

Dave Towey and James Walker
University of Nottingham Ningbo China
Ningbo, China

Ricky Yuk-kwan Ng
Vocational Training Council
Hong Kong SAR, China

This paper examines and contrasts the learning and teaching practices in traditional higher education engineering (THEE) and vocational and professional education and training (VPET). As education evolves and new and alternative technologies and tools appear — especially in the form of more open, flexible, and lightweight technology-enhanced learning (TEL) options, such as massive open online courses (MOOCs) and other open educational resources (OERs) — the need for THEE and VPET institutions to adapt and reinvent has never been more urgent. This paper introduces some recent changes in education, and the Chinese contexts of the authors. The history and parallels between THEE and VPET are presented. Then, current challenges for both THEE and VPET institutions are discussed, with potential strategies and solutions outlined. Insights from Agile development methodologies in software engineering are discussed as themes for how THEE and VPET institutions may be able to address current challenges and maintain a sustainable trajectory into the future.

Sentiment Analysis of Student Opinions in Large-scale Open Online Courses Using Automatic Machine Learning Techniques: What does it tell us?

Khe Foon Hew, Chen Qiao, Yumeng Sun and Ying Tang
The University of Hong Kong
Hong Kong SAR, China

Student opinions play a very important role in education — they can influence student behaviours, such as whether or not to pay attention, which in turn influences their decision to drop out or continue learning. This study offers a new contribution by using sentiment analysis, otherwise known as “opinion mining”, a technique for analyzing and classifying sentiments found in a large-scale corpus of reflective sentences (75,239 sentences) posted by 18,032 students who completed one or more of 218 MOOCs. The open-sourced text processing package TextBlob was employed as the sentiment analysis engine, which computes text sentiment by averaging the term “sentiments” of the text based on a sentiment dictionary derived from WordNet3. We explored and described the students’ positive and negative sentiments with respect to one or more of the following six aspects: (a) structure and pace; (b) video; (c) instructor; (d) content and resources; (e) interaction and support; and (f) assignment and assessment.

UPOU Commons: Experiences in Developing and Sustaining an OER Repository

Joane Serrano

University of the Philippines Open University
Los Baños, Laguna, the Philippines

The University of the Philippines Open University (UPOU) is a staunch advocate of open educational resources (OER) and was one of its first adopters in the Philippines. As early as 2012, the UPOU developed its policy on the use of OER for developing and delivering its courses. The UPOU uses the Resource-based Course Package (RBCP) approach to harness the affordances of online resources for content delivery and to enhance the levels of interaction between learners and teachers in this process (Alfonso, 2014). Although OER can be accessed freely, it is acknowledged by academic institutions that it requires significant investment in terms of course development as well as maintaining a culture of openness. This paper aims to share the experiences of the UPOU in developing and sustaining the UPOU Commons, the OER repository of the university. This study also tried to examine both the opportunities and challenges presented by the university's OER repository, as well as its evolution towards open educational practices (OEP) and an open educational culture (OEC). Faculty members, staff and students were interviewed about their experiences with the UPOU Commons, and data were analyzed through thematic analysis. The results of the study showed that the UPOU Commons needs to be improved in terms of content and for promoting its utilization. Several issues became clear through this study which will serve as a basis for its further improvement.

Important Features of MOOCs as Perceived by Learners

Melinda dela Peña Bandalaria

University of the Philippines Open University
Los Baños, Laguna, the Philippines

Massive open online courses or MOOCs offer a lot of promise in terms of providing inclusive and accessible opportunities for lifelong learning. As such, MOOCs have considerable potential to contribute to the realization of SDG#4, especially in the context of developing countries. However, this potential is often hindered by the observed low completion rates for most MOOCs offered by the various providers. It was in this context that a survey was conducted to investigate the features of MOOCs that are considered to be important by the learners. An online survey, consisting of 16 questions specifying the different features of a MOOC, was administered to those who enrolled in the MOOCs offered by the University of the Philippines Open University (UPOU). The questions were answered using a five-point Likert Scale. To further evaluate these MOOCs, the respondents were also asked to rate their level of satisfaction with the features they deemed important. Also, three open-ended questions were included in the survey questionnaire asking the respondents about the possible reasons why they were unable to complete the MOOC they had enrolled in or, if they were able to complete the MOOC, what factors could be behind their 'successful' completion. The findings of the study can serve as a guide to other MOOC providers so that MOOCs can deliver the promised potential.

Opportunities and Challenges in the Use of Open Education Resources in an Open and Distance Learning Mode of Education

Seema Kalra

Indira Gandhi National Open University
New Delhi, India

The present study explores the usage of open educational resources (OERs) among IGNOU's teaching community from various disciplines, who are actively engaged in preparing and developing self-learning material (SLM) for their students. A questionnaire-based survey and personal interviews were used to assess their awareness of OERs; the frequency and purpose of accessing them; their use in the development of SLM; and the issues involved in using these resources. Based on their responses, it was concluded that most of the staff were well aware of the benefits of OERs. However, issues related to institutional copyright policy, the vast diversity and quality of these resources, their unavailability at one place, and access to the Internet were some of the issues limiting their effective use in the ODL system. Certain strategies are suggested so that OERs can be used more effectively for the development of high-quality learning material and better delivery of the programmes of study.

A Study of the MOOCs Course in a Multi-level Model and Blended Learning with a Flipped Classroom Effect

Wei-Te Liu

National Yunlin University of Science and Technology
Douliu, Taiwan

e-Learning is developing fast in several types of cross-disciplinary work across the world. Technology intervenes deeply in and has an impact on traditional school education at all level in the education system. There has been a particularly high level of interest in MOOCs since 2013, the so-called 'MOOC' s first year'. This study involves an authentic MOOC psychology course (which started in 2014) conducted in a cross-website, including Coursera, CNMOOC and EWANT. In addition, an online and off-line flipped classroom was blended in to teach around 30,000 learners from mainland China and Taiwan. Several empirical data were analyzed to check the teaching effect and website working function comparison. The results demonstrated that the MOOCs course is an effective resource for current school and adult education. However, the flipped classroom embedded and blended learning work better than only online courses. Some recommendation are also proposed in this paper.

Building Online Open Course Resources through a Learner-centred Concept: The Designers' Perspective

Qun Yang and Haijian Chen
Shanghai Open University
Shanghai, China

By March 28, 2018, the top ten online courses platforms, such as openlearning, coursera and edx, had launched over 13,100 courses. What kinds of online open course resources attract learners and make them stick to their studies, attain the learning outcomes, and feel satisfaction with their achievements? This question led us to examine how designers build online open course resources to satisfy learners' needs, which suggested the following points. Firstly, pay attention to the content choice. The content should meet the students' needs, with both knowledge fragmentation and the formation of a systematized knowledge map being taken into account. Secondly, the content presentation should stimulate the interest of learners, and consider their different levels of knowledge and cognitive styles. Thirdly, learning activities should be designed to relate to each other, as this can promote student interaction and knowledge generation, and learners' 'burnout' should also be considered. Fourthly, focus on diversified assessment, in terms of subject content and methods. This paper adopts a combination of qualitative and quantitative research, based on experiential learning. Course samplings has been carried out from the existing online open courses platform, and the experimental and survey data confirmed each other.

Research on Construction of a SPOC Instructional Model Based on ARCS and Practice in Open Education

Yanshuang Jiang and Yong Nie
Shaanxi Normal University
Xi'an, China
Can Cui
Liaoning Normal University
Dalian, China

As inherited from and an innovation of MOOC (massive open online course), SPOC — which is short for 'small private online course' — is characterized by being small and private. It can provide new opportunities for the reform and development of online education. However, due to the weak control of online learning environments and the lack of self-regulation ability of online learners, at present the online learners' weak learning motivation and lack of self-confidence in learning have become the main challenge to deep learning of SPOC. Therefore, this study used the ARCS theory (which is short for 'attention, relevance, confidence and satisfaction', proposed by J M Keller in 1987) to guide the research and practice of SPOC. Based on an analysis of the advantages and disadvantages of typical SPOC teaching cases at home and abroad, it drew on the ARCS theory as applied to related research in online education, and constructed a new SPOC instructional model based on the ARCS theory. The instructional model included four parts, viz. the design of (i) the instructional content system; (ii) the personalized learning strategies; (iii) instructional activity; and (iv) the instructional evaluation system. This model was then applied in Dalian Open University, and the participants in the experiment were assessed on their level of satisfaction and acceptance. Practice showed that the learners had a high degree of recognition of the value of this model — 85.19% of them believed that learning through this model could have a positive impact on their own motivation, but 14.81% of the learners did not think so, and there was a significant ($p < .05$) difference between them. Also, 87.04% of the learners approved of the presentation of the SPOC resources, but 12.96% did not, and there was a significant ($p < .05$) difference between them. In addition, 81.30% of the learners were more satisfied with the learning effect of this model, but 18.70% were not, and again there was a significant ($p < .05$) difference between them. Finally, 83.34% of the learners reached the learning objectives and completed the tasks in the instructional activities with a high completion rate. We concluded that this instructional model not only improved the instructional effect of SPOC, but also could effectively arouse and maintain learning motivation and enhance the self-confidence and participation of online learners. The SPOC instructional model proved to be practical for the reform and development of open education.

The Use of Open Educational Resources in Pre-school Education: An ALMS Analysis

Sara Lai

Hong Kong Baptist University
Hong Kong SAR, China

Open educational resources (OER), with the features of openness in terms of the five 'R's' (Wiley, n.d.) — retain, reuse, redistribute, revise and remix — have been promoted for more than a decade and gradually adopted in higher education institutions. For other levels of education, however, there remains a lack of OER culture, which has been identified as one major obstacle to OER adoption (Hoosen, 2012).

This paper examines the use of OER in pre-school education as an area receiving little attention in the past. From a total of 61 related publications collected from Google Scholar and Scopus, and further screened, finally only three were identified as relevant case studies. The case studies were analysed following the ALMS framework — Access to editing tools; Level of expertise required to revise or remix; Meaningfully editable; and Source-file access (Hilton III, Wiley, Stein and Johnson, 2010). The results showed that the OER presented in the case studies in general can be revised and remixed easily with the source files and editing tools available. The editing of some resources requires more specific computer skills, which is a possible reason for their limited adoption in pre-school education. Based on the results, the opportunities and challenges for promoting OER in pre-school education are discussed from the perspectives of language and cultural diversity, digital literacy and the parents' involvement.

Calibration of a Scale for Exploring the Learning Environment of Undergraduate Physics Laboratories

Gregory P. Thomas
The University of Alberta
Edmonton, Alberta, Canada

Innovation in education implies modifying learning environments to emphasize factors that positively influence students' learning. This tenet is valid across education, including higher education. With innovation comes the need to evaluate changes in learning environments. Quantitative measures are often employed for such purposes. This paper reports on the calibration of the Undergraduate Physics Laboratory Environment Scale (UPLLES). The UPLLES is a quantitative instrument, used in previous studies, which contains 23 Likert-scale items located within five sub-scales that reflect dimensions that are crucial for stimulating inquiry in undergraduate physics laboratories: Inquiry Orientation, Integration, Material Environment, Student Community, and Instructor Support. These dimensions were previously confirmed using factor analysis. The UPLLES was calibrated using the Rasch rating scale model using data from a population of 1,039 undergraduate physics students. The Rasch model specifies the form of relations between items and persons that are developed on questionnaires like the UPLLES. The ease or difficulty of items on the UPLLES for students to endorse provides insights into whether their laboratories reflect the idealized inquiry orientation of such environments as proposed by physics educators. Data analysis established that the Person mean squares for infit and outfit were 1.00 and 1.01 respectively. The Item mean squares for infit and outfit were 1.01 for both. The mean standardized infit and outfit were -0.2 and -0.1 respectively for persons, and -0.1 and -0.2 respectively for items. The standardized infit standard deviation for persons (0.49) and items (0.18) showed little overall misfit. The items spread from -1.34 to 1.58 logits. The item separation index was 18.46, suggesting acceptable item separation. In summary, the analysis suggested that the UPLLES is a valid and reliable survey, yet further modifications might be possible. This study informs innovation in the quantitative evaluation of learning environments that can be replicated in other higher education settings.

Reinventing University in the 21st Century: The Internet, the 'New Buildings' of Universities and New Psycho-pedagogic Models

Maria Amata Garito
International Telematic University UNINETTUNO
Rome, Italy

The existence of an Internet network, external to humanity, made up by interconnected digital memories, has completely changed the processes and mechanisms of production and transmission of knowledge, research and learning; and it has been affecting knowledge communication languages more and more. By now, the Internet has evolved into a global platform, ever richer in content, and it is actually becoming the main infrastructure for knowledge exchange among people. Creating an infrastructure for higher education in the 21st century involves adding to the university's physical buildings a technological infrastructure — the Internet, which is a place for interactive and collective communication, based on, as its peculiar richness, the direct involvement of its users in the creation, as well as the exploitation, of contents. Of course, communication models are based on theoretical applications constructed to use different forms of language, such as, for example, the language of information, entertainment, cinema, theatre, printing, radio, television, and the Internet, as well as to develop learning processes; and they must also be used as theoretical models useful in allowing for constructing methodologies and languages suitable for teaching and learning through the technologies. Research work on this issue is constantly evolving along with technological evolution. The technological platform of the International Telematic University UNINETTUNO includes both virtual laboratories, created to carry out research activities, and computer-based networks with other research laboratories in other countries across the world.

This presentation illustrates the research activities, the results of which have allowed us design and realize the Didactic Cyberspace of the International Telematic University UNINETTUNO, which is based on a systemic approach and a new psycho-pedagogic model.

A Survey of Virtual Experiments in a Modern Physics Experiment Course

Zhuo Chen, Kai Fang, Zhihua Zhang, Chen Ni,
Ningsheng Ma and Xiaoting Shao
Tongji University
Shanghai, China

A “virtual experiment” refers to creating auxiliary and replacement elements in a physics experiment course. It even partly replaces the traditional hardware and software experimental operating environment by means of multimedia and technology on the computer. Students can do experiments with related operations and complete a variety of experimental projects just as in a real laboratory. They can also find learning materials, exams, test videos and experimental videos on the virtual experiment technology platform. In the physics experiment course, the students, whose majors are science and engineering, have faced many problems, such as limitations in experimental time, and insufficient equipment and learning materials. The utilization of the virtual experiment platform is expected to alleviate these common difficulties.

In order to explore the factors related to the learning effects of a virtual experiment and how to improve its application, the virtual experiment part was added in a modern physics experiment class, and a questionnaire survey was carried out. The results showed that the virtual experiment can provide a better solution to the actuality of the experimental courses. Students’ learning attitude, interest and thinking mode, and their degree of knowledge of virtual experiments and software operation proficiency had different degree of correlation with the learning effect.

Using Academic Analytics to Predict Performance Outcome of Students

Francis Yue
City University of Hong Kong
Hong Kong SAR, China

With the advancement in computing technology, the use of data analytics is becoming more common in many fields, including the education sector. In fact, academic analytics is very popular in the higher education context, with more research now being carried out in this area. Class attendance, assignment marks, test and final examination scores on courses offered in an academic programme are typical data that are collected in most educational institutions. The proper analysis of such data can help the management to enhance the teaching and learning experience of students. This paper aims to identify important variables that affect the academic performance of students. The students involved are studying a diploma programme, and are allowed to choose elective courses in their final semester. Various variables based on the students’ performance in the programme, as well as some student-related data, were analysed. A statistical relationship study was carried out to find out those variables that affect the performance outcomes of the students.

The Application of Educational Statistics in Learning Effect Evaluation of Mobile Learning

Lulu Lv and NingSheng Ma
Tongji University
Shanghai, China

Mobile learning not only enables learners to learn autonomously at any time and place, but also provides a large number of effective educational data for learning effect evaluation. The purpose of this paper is to statistically analyze the educational data generated by the mobile learning platform, and provide suggestions and positive guidance for the learning effect evaluation of learners who use the mobile learning platform. The study takes the *Physical Optics* experimental course at Tongji University as an example, which is taught with an optical experimental mobile learning platform. The platform includes both a question bank test system and a series of micro-course learning videos. In order to effectively use the educational data generated by the mobile learning platform, 262 students who studied physical optics experiments were invited to use the platform, and the data were analyzed with educational statistics. Based on the previous theoretical research and practical application of mobile learning, this study analyzed and used the educational data generated in the background, and discussed the impact of educational statistics on the learning effect evaluation in mobile learning. The results showed that the use of educational statistics methods to analyze and use educational data provided a powerful aid for evaluating the learning effect in mobile learning. This results of this research can help educators to adjust the one-sided evaluation of students, thus helping them to improve objectivity and fairness in the evaluation process.

An Online Learning Behaviour Analysis of Students with Poor Academic Performance

Jiyou Jia and Jingrong Zhang
Peking University
Beijing, China

It is of crucial importance that educational practitioners and researchers assist students with poor academic performance to improve their learning. The behaviours of the students using online learning systems can serve as an important data resource to analyze their learning behaviours and identify their characteristics. Based on the OLAI (Online Learning Activity Index) model proposed by Jia and Yu (2017) to theorize the students' online learning activities, we analyzed the learning data of five students with poor academic performance in a class from a junior middle school in China using an online learning system for two years. The data analysis results showed that the average quality and speed of those students were lower than those of the other students with better academic performance, but their quantity was almost the same as that of the others. Based on the findings, we suggest strategies to improve the students' learning quality and speed for consideration by relevant teachers and parents.

Assessing the Effectiveness of the Mobile Augmented Reality Courseware *Eight Planets in the Solar System*

Jun Xiao and Shuo Cai
Shanghai Open University
Shanghai, China

Xuejiao Li and Hui Qiao
East China Normal University
Shanghai, China

This study designed and developed a mobile augmented reality technology-based courseware called *Starry Sky Exploration — Eight Planets in the Solar System* applicable for the geography curriculum in secondary schools in China. It features a blended learning mode involving a flipped classroom, and this mobile AR courseware can help middle school students in China to effectively acquire knowledge of the planets in the solar system. Eighteen students majoring in computing from a Shanghai secondary vocational school were invited to our Digital Lab of Open Learning in the Shanghai Engineering Research Centre of Open Distance Education to experience this mobile AR courseware. This study adopted a five-point Likert scale in the questionnaires, which comprised a pre-test and post-test. Their feedback questionnaires were collected and analyzed, using reliability analysis and regression analysis. This mobile AR courseware proved to be attractive to the participants and received a high degree of satisfaction and behavioural willingness from them. Future improvements are also discussed based on the research results.

Learners' Attention Tendency to Information and Learning Paths in Online Learning: An Empirical Study Based on Eye Movement

Su Mu, Meng Cui, Xiaojin Wang, Jinxiu Qiao and Dongmei Tang
South China Normal University
Guangzhou, China

A precise grasp of different learners' online learning preferences and online learning paths will help in understanding exactly their online learning information-processing methods and cognitive characteristics. It can also be useful for optimizing the design of the online learning process. The Tobii X120 eye tracking instrument, Tobii studio, and an online learning platform were used to record and visualize the data on eye movements during the real online learning process of 14 online learners. According to Barbara Solomon's learning style classification framework, these learners' learning styles were classified into four dimensions. Based on the data on eye movements, the learners' preferences for learning content and online learning paths were traced according to their learning styles. It was found that learners' learning styles were related to their attention preferences and learning paths in online learning content. Learners with different learning styles differed in their focus areas and learning paths; and learners with a specific learning style had basically the same focus areas and online learning paths.

How do Learners Watch Micro-lecture Videos in Online Courses? An Analysis Based on Eye Tracking

Meng Cui, Su Mu and Xiaojin Wang
South China Normal University
Guangzhou, China

Videos of micro-lectures are one of the most popular online learning materials. A precise explanation about how learners notice and capture information while watching micro-lecture videos will help tutors to understand learners' learning process. In order to do this, the Tobii X120 eye tracking system was used to record and visualize the real video-watching process of 14 online learners. Based on the data of pupil movement, learners' watching process was recoded and the following results were found through data analysis: (1) although the video content was exactly the same, learner gazed at different areas of the screen to get the information they needed; (2) common areas for all learners were subtitles and facial expressions as they can give them a quick way of getting information and help them to understand the content; and (3) there were various frequencies of learners' eye movement while watching the videos.

A Comparison of Staff Professional Development Programmes at the First Sino-foreign University in Mainland China and the Largest Vocational and Professional Education and Training (VPET) Institution in Hong Kong

James Walker and Dave Towey

University of Nottingham Ningbo China
Ningbo, China

Ricky Yuk-kwan Ng

Vocational Training Council
Hong Kong SAR, China

It is critical that the management of tertiary level educators is not compromised by the use of uncalibrated practices. Continuing professional development (CPD) requires staff motivation to be effective. This study investigates the influence of two professional development programmes; one operates at a Sino-foreign university in mainland China and the other at a vocational and professional education and training (VPET) institution in Hong Kong Special Administration Region, China. The professional development programme at the university in mainland China has both voluntary and mandatory components and is accredited by the UK Higher Educational Academy. The professional development programme in the VPET institution in Hong Kong involves in-house mandatory training that is not externally accredited. This study is unique in that it investigates the effectiveness of a British professional development intervention in an Asian environment by comparing it to a staff capability-building programme developed by a VPET institution in Hong Kong. Through feedback from semi-structured interviews and questionnaires, staff opinions on both the professional development interventions yielded insights that can be useful for future proactive professional development strategies in institutions expanding their global outreach.

* Corresponding author

A Survey on the Link between College and High School Physics Teaching in the New College Entrance Examination

Yanwen Yang and Helan Wu

Tongji University
Shanghai, China

In the new college entrance examination in Zhejiang Province and Shanghai, the number of candidates who take physics as one of the college entrance examination subjects has dropped sharply, while some of the students who select physics as a subject for this examination and obtain good grades at their first attempt tend to give up continuing to study physics — a situation which leads to some problems. We found that students' foundation in physics was weak overall and uneven after entering the university, and many students lacked interest and confidence in studying college physics. In addition, many students have difficulty in adapting to the differences between high school and college physics courses which have major differences in teaching content, pace, and teaching methods. Linking these two contexts effectively faces many difficulties. In the new college entrance examination, this problem of the link between college and high school physics teaching has become more serious. This article analyzes the current situation, and then puts forward suggestions and strategies aimed at promoting an effective link between college and high school physics teaching, as well as improving the teaching effects of college physics courses from the perspective of colleges.

Marketing Strategy for Distance Learning Programmes at Universitas Terbuka Open University (UPBJJ-UT) in the Jambi Region

Milde Wahyu and Iis Solihat
Universitas Terbuka-UPBJJ Jambi
Jambi City, Indonesia

Iis Solihat
Universitas Terbuka-UPBJJ Serang
Serang, Indonesia

Universities are facing stiff competition in promotional activities, and thus require marketing communication strategies to attract prospective students. This study aims to find out how marketing communication strategy is carried out in the Open University UPBJJ Jambi through interviews with its officials related to promotion. In looking at the marketing strategy at UPBJJ Jambi, this qualitative research focuses on determining promotion targets; market segmentation, competitor analysis, the marketing communication approach, marketing communication activity, and consumer response analysis.

Buddy Programme: An Educational Way for Supporting Academics

**Amy KS Lee, Windy WM Lee and Irene YF Wong,
Veronica SK Lai and Linda YK Lee**
The Open University of Hong Kong
Hong Kong SAR, China

The Buddy programme offers support by experienced academics to new academics to help them adjust to the earliest phase in their new posts. Launching a Buddy programme in an institution is beneficial not just for new academics, but can be used for further enhancement of current academic staff. The Buddy programme aims to orientate and support the growth of new academics in a smooth transition process, and indeed it is advantageous for all those involved. In the light of the rapid expansion of the School of Nursing and Health Studies in the Open University of Hong Kong, 18 new academics have been employed since the end of 2015. A brand new Buddy programme was initiated at the start of 2016 to facilitate new academics' integration and adaptation into the School. By considering the clinical background and teaching experience of the new academics, the most appropriate pairs were matched. There are no fixed rules, but rather an open, flexible and mutually agreeable approach to maximize their communication is encouraged, thereby enhancing the exchange of knowledge. The relationship of the pairs starts on the arrival of the new academics and lasts for about a year. Twenty Buddy pairs have been matched under the new programme over the last two years. Each matched pair was asked to evaluate the programme six months after they arrived. Among the 19 questions, with a five-point Likert scale, sent out to them, over 74% responded 'Agree' or 'Strongly agree' on 18 questions, while over 77% responded 'Agree' or 'Strongly agree' on 14 questions for new academics. Both parties commented that the Buddy programme helped them to grow and strengthened their capacities, which reflect that it can be a valuable way for supporting both new and current academics.

An Extended Use of Technology-supported and Triangulated Writing Tasks to Examine the Integration of Generic Competencies at Subject Level in Higher Education

Roy Kam, S K Tang and Lydia Lee
The Hong Kong Polytechnic University
Hong Kong SAR, China

This study reports on a mixed-methods approach featuring the use of technology-supported and triangulated writing tasks to examine the integration of generic competencies such as critical thinking, problem-solving and creativity into the curriculum at an individual subject level in higher education. The writing tasks were a series of technology-supported and writing-intensive activities that assessed and developed students' generic competencies in disciplinary contexts. The curriculum into which these writing tasks were incorporated was a 14-week pilot interdisciplinary subject for construction disciplines in a Hong Kong university. The directed content analysis of the 257 writing tasks done by 53 students provided qualitative data on the extent to which individual students had attained the intended generic competencies in the subject. Both the end-of-course survey with items focusing on the attainment of the intended generic competencies plus the individual performance scores in the writing tasks gave quantitative data to cross-check the qualitative data. The findings showed that the data gathered from the technology-supported and triangulated writing tasks did not necessarily align with the self-reported quantitative data from the end-of-course survey. Such alignment and misalignment point to quadrant analysis similar to the CLASSE surveys (e.g. NSSE 2018) or the importance-performance analysis studies (e.g. O'Neill 2004) that can shed light on how well the intended generic competencies were attained by students at a subject level. The mixed methods approach adopted here can serve as an easy-to-use framework in any subject providing that the technology-supported and triangulated writing tasks can apply for investigating the horizontal integration of generic competences across subjects.

The Development of a Big Data Platform for Matching Vocational Education Programmes with Job Requirements

Weiyuan Zhang
Beijing Normal University
Beijing, China

Fangxia Hu and Qingsong Xie
Chongqing Radio and Television University
Chongqing, China

Vocational education aims to cultivate students' knowledge and skills in order to meet the requirements of specific job areas. The purpose of this study was to develop a big data platform to understand the extent of matching between vocational education programmes and job requirements. The Web Crawler technology was used for the development of a big data platform. Forty-six programmes from seven Faculties in one vocational education college located in southwest China were selected as cases, viz. Urban Construction and Engineering, Media Arts, Management, Electronic Information Engineering, Accounting and Finance, Intelligent Manufacturing and Transportation, and Innovation Colleges. The data on knowledge and skills for jobs were chosen from five major locally-based recruitment websites on job information advertised in the most recent 30 days. It was found that there were big differences in programme matching with job requirements, ranging from 72% to 95%, on the aspects of professional knowledge and general skills. It is hoped that the outcome of this study will be helpful for vocational education colleges to adjust the course offering in order to match the changing requirements of the job market.

The Learning Support Services Model in the Open University of China

Naipeng Cui

Open University of China
Beijing, China

The Open University of China (hereafter referred to as the OUC) is a new-style university without walls, open to all members of society. Since it was formally established on the basis of the former China Central Radio and TV University (CCRTVU) and local radio and TV universities (RTVUs) in 2012, it has been exploring the reconstruction of the new university system and the construction of a new model of learning support services. The core of the system reconstruction and learning support services model is quality assurance, so the OUC launched a series of research projects to study quality assurance from different perspectives in June 2013.

This article is about one of the series of research projects which focused on OUC's support services for learners. The research problem are: the kind of support services to be provided; the rights and responsibilities of the people who provide the services; and the processes, standards and requirements of each support service. The research goal of this paper is to form a learning support service model for the OUC, including the types of support services; their personnel composition; the service processes; the division of responsibilities; and the related standards. The OUC's learning support services system is complex and large, and this article explains the services briefly, and then focuses on the part of the teaching process which is most closely related to 'quality assurance'.

The Predicaments and Possible Solutions of Initial Teacher Training — based on Shanghai

Yuxuan Lu

Shanghai International Studies University
Shanghai, China

China has developed relevant policies for promoting initial teacher training (ITT). However, many problems still exist. Based on a literature review, the author is going to use in-depth interviews (with at least five relevant people, including new and experienced teachers) and observation as methodologies to analyze the current situation of ITT in Shanghai. Then the deficiencies of ITT in Shanghai will be evaluated which include, for instance, that (i) little information and communication technology is used in ITT; (ii) the interaction between new teachers and their mentors is quite low; and (iii) the feedback given is monotonous. Suggestions for helping to solve these problems will be made accordingly. It is intended to design the framework of an online platform for teachers to have related trainings, which includes, for example, a post bar and interactive forums. The post bar will contain posts in various forms with information given by professionals on how to deal with different emergencies in class and improve the teaching outcomes. Interactive forums are like WeChat discussion groups where teachers can comment, ask and answer questions, and share experience, as well as give timely feedback to increase interaction. Teachers' login and logout time will be recorded to make sure they spend an adequate time learning from this platform. The results of this study may help to provide useful information to the authorities, improve the organization of ITT in Shanghai, and later catch up with the standard of ITT in developed countries. Meanwhile, it is hoped that this research will provide a useful reference for other scholars working on this subject.

Effects of Head-mounted Display on Reading a Drawing: A Case Study of Orthographic Projection

Hsi-Hsun Yang and Jia-Hao Chen

National Yunlin University of Science and Technology
Yunlin, Taiwan

Although orthographic projection is a fundamental and most important module in a graphics course, 23% of surveyed students expressed frustration at learning orthographic projection. This study made use of a head-mounted virtual reality (VR) display to develop a set of virtual teaching materials that observed three-dimensional objects from different angles in VR, thereby helping learners to switch between two-dimensional and three-dimensional graphs to improve their ability to read orthographic projections. The experiments in this study were based on a single-subject A-B-M reversal design, divided into three phases: a baseline phase (A), an intervention phase (B), and a maintenance phase (M). The head-mounted display was adopted to investigate the changes in the students' ability to read a drawing with regard to orthographic projections. Two design school students who had completed a graphics course and had low spatial abilities were enrolled as the research subjects. The experiments entailed 16 learning sessions that spanned eight weeks. The results demonstrated that the correct answers given by Student 1 (S1) increased after entering the intervention phase — a difference which was shown by C-statistic analysis to be statistically significant. The experimental outcomes of Student 2 (S2) failed to reach a statistically significant level. However, she believed that continuous VR training would increase her learning efficacy because it helped her to give correct answers to questions that she did not even understand during the pre-test.

Exploring the Use of Multimedia As Assessment Tools in E-learning

Luisa Gelisan

University of the Philippines Open University
Los Baños, Laguna, the Philippines

Assessment is an essential component in the teaching and learning process. The Scottish Qualifications Authority (2000) emphasized that assessment and feedback are the most important roles of teachers, as these influence 'students for the rest of their lives and careers' New assessment practices and techniques have been adopted in the light of changes in teaching pedagogies, the teaching and learning environment, and the use of information and communication technologies for education. The faculty members of an open and distance e-learning institution in the Philippines are implementing different assessment tools, one of which is the use of multimedia. This study explored the use of multimedia in assessment. Selected faculty staff in the university were interviewed to find out their aims in using multimedia as assessment tools; identify the types of multimedia they used; and the challenges they experienced and lessons they learned. Recommendations and/or best practices for using multimedia as an assessment tool were also gathered. The results of this study showed that multimedia materials were effective tools for assessing students' understanding of the concepts discussed in class. It is recommended that the use of multimedia materials as assessment tools should be further explored and developed.

A Study on the Effectiveness of a Spherical Video-based Virtual Reality (SVVR) System on Promoting Teaching

Xingyue Qiu, Pengfei Liu and Wenjing Feng
Wenzhou University
Wenzhou, China

Micro-teaching has become much more convenient through technologies such as video-recording and networking. The reality of the teaching environment has been ignored, with its technical attributes becoming increasingly prominent. Virtual reality can build a virtual situation with a high degree of immersion and presence, and reproduce real classroom situations. This study focuses on the instructional functions of micro-teaching, as well as its technical functions. A micro-teaching system was developed which reproduced the real classroom environment to meet the training needs of normal students, using spherical video-based virtual reality (SVVR). To explore the effectiveness of SVVR in improving the school students' performance, an SVVR group and a micro-classroom group were selected to conduct a comparative experiment. The experimental results showed that the anxiety, self-efficacy and presence of the SVVR group were clearly higher than in the micro-classroom group. This study includes further reflection and exploration in a preliminary attempt to apply virtual reality in teaching, and provide an effective and feasible strategy for the improvement of micro-teaching.

Safety Awareness and Firefighting Skills Training through Virtual Reality

Yujia Tian, Chiu Yin Fan, Yu Ho Leung and Sin-Chun Ng
The Open University of Hong Kong
Hong Kong SAR, China

This project introduces a new solution for enhancing the safety awareness and firefighting skills of the general public through the use of virtual reality (VR) technology. Thousands of fire disasters happen every year in Hong Kong because of carelessness and lack of safety awareness. Everyone needs training to improve his/her safety awareness and firefighting skills. Our solution has two parts. The first part focuses on improving safety awareness. It involves a mobile application coupled with a VR helmet to provide risk prevention training, such as 'removing tinderboxes from stoves' and 'replacing broken wires'. The second part is called 'Firefighting Skill', which is a small firefighting skill trainer based on VR with the HTC Vive. There are two simulated environments: a subdivided flat and an industrial building, which most people are familiar with. Users learn various firefighting skills and methods of escaping fire. The use of VR can simulate a fire situation with different causes such as 'Stove overcooking' and 'Careless handling of cigarette ends'. Users can watch their surroundings and use what they get to extinguish the fire or find ways to escape. This solution can improve the general public's safety awareness and reduce the possibility of causing an accident. Twenty people from different age groups were involved in the user evaluation. The whole evaluation process included two questionnaires, scene simulation and face-to-face interviews conducted with the participants. The results of the evaluation showed that learning through virtual reality can enhance users' firefighting skills and safety awareness. Most participants agreed that the new solution was helpful and useful. In conclusion, the use of VR technology can provide a new teaching method which improves the level of interactions with users and the learning efficiency.

Acknowledgement: The authors would like to thank the Institute for Research in Open and Innovative Education, established with the substantial support of a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15) for its inspiration for the work reported in the paper.

Enhancing Visitors' Experience of Revitalized Historic Buildings with Augmented Reality

Ivan C. K. Chan, Jasmine H. Y. Ng, Alex L. Y. Ip, S.C. Ng and Andrew Lui

The Open University of Hong Kong
Hong Kong SAR, China

The revitalizing of historic buildings scheme was launched by the Hong Kong Government over ten years ago. Its purpose is to preserve the outlook of historic buildings, and revitalize them by transforming their usages to promote public participation in the conservation of historic buildings. For example, the former Lai Chi Kok Hospital was revitalized as Jao Tsung-I Academy. Although the building's structure and outlook can be conserved, members of the public have had difficulty in understanding its history and imagining the lives of the people who used to be there.

This paper presents a mobile application integrated with augmented reality, iBeacon positioning and object recognition for enhancing the experience of visitors by enabling them to learn about the history of Hong Kong heritage. This application provides an interactive guiding system to let visitors follow the route to explore the history of historic buildings. When they approach the designated 'hot spots', the augmented reality service is launched by its unique features. At the same time, it also provides object recognition to precisely recognize the predefined objects and initiate interaction with the visitors. As the object recognition framework has a high level of recognition rate, it provides the visitors with guidance through multimedia information, such as animation, video, text and audio. It replaces the traditional methods such as text boards, television and audio players as a visitor's guide.

For evaluation, we invited both visitors and the manager of Jao Tsung-I Academy who were interested in this topic to try our application and take a short interview. The results showed that most of the users thought that this application could enhance the visitors' experience in learning about the history of the building — and that using the mobile device interacting with the historic building was much more interesting than reading text boards and listening to an audio player.

Acknowledgement: The authors would like to thank the Institute for Research in Open and Innovative Education, established with the substantial support of a grant from the Research Grants Council of the Hong Kong Special Administrative Region, China (UGC/IDS16/15) for its inspiration for the work reported in the paper.

A Design and Evaluation Framework for Mixed Reality Learning Environments in Sports Education

Jonathan Foo

Nanyang Technological University
Singapore

June Tay

Singapore University of Social Sciences
Singapore

The shortage of sports educators is a global phenomenon. With dwindling resources in most classrooms, schools and sporting fields, efforts to teach sports effectively are limited by a shortage of time and human resources. This paper proposes that an immersive mixed reality learning system (MRLS) can simulate an authentic learning environment suitable for instruction, practice and assessment, and be a tool to complement the limited number of teacher and facility resources. A proposed experimental research in the context of sports fencing is offered a basis for discussion. A multidimensional framework for the design and evaluation has been developed to measure the effectiveness of mixed reality learning environments in three dimensions: tactual quality, didactic quality and autodidactic quality. The models developed for this study are designed specifically for fencing, but have a potential impact across all sports and technical classroom education.

Does Augmented Reality Really Improve Learning Achievement? A Meta-analysis of 23 Experimental and Quasi-Experimental Studies

Huiwen Ni and Yongbin Hu
Jiangsu Normal University
Xuzhou, China

Augmented reality (AR) integrates the virtual world and the real world, which provides the possibility of smart learning. Domestic and foreign scholars have carried out a large number of studies to explore the effects of AR on learning achievement. However, these results differ from one another. Therefore, this paper employed a meta-analysis method, which is very popular around the world, to analyse 23 experiments and quasi-experimental studies to find out how AR affects students' learning. This study found the following results.

- (1) On the whole, the overall size of the AR effects on learning achievement was 0.58, which indicates that AR has a moderate positive effect on learning achievement.
- (2) The order of AR effects on different school levels was: senior high school (1.54) > primary school (0.64) > college (0.48) > junior middle school (0.11).
- (3) AR has a similar effect on classes of different sizes, but for the specific effect size, the order of AR effects on the class size was: small-scale class (0.64) > large-scale class (0.42) > middle-scale class (0.56).
- (4) AR has a significant effect on subjects such as physics, science, and biomedical science.

Acknowledgements

The Conference Organizing Committee would like to acknowledge the following organizations for their generous donations and contributions towards the Conference:

- Hong Kong Pei Hua Education Foundation
- Wu Jieh Yee Charitable Foundation

INVITATION

*One of the University's 30th anniversary
celebration events*

International Conference on **Open and Innovative Education**

ICOIE 2019

10–12 July 2019

The Open University of Hong Kong
Hong Kong SAR

Organizer:



香港公開大學
THE OPEN UNIVERSITY
OF HONG KONG

Go 高飛 創未來
FURTHER



開放及創新教育研究所
Institute for Research in
Open and Innovative Education

Sponsors:



香港培華教育基金會
Hong Kong Pei Hua Education Foundation

Wu Jieh Yee
Charitable Foundation
伍潔宜慈善基金

icoie2018.ouhk.edu.hk