eLearning Forum Asia

香港浸會大學
HONG KONG BAPTIST UNIVERSITY

EMPOWER & EMBRACE:
Innovating Higher Education with Edtech

eLEARNING FORUM ASIA 2024

4-5 DECEMBER, 2024

Programme

Hong Kong Baptist University
Hong Kong

全人教育教與學中心
Centre for Holistic Teaching and Learning

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About eLFA 2024

EMPOWER & EMBRACE

Innovating Higher Education with EdTech

Higher education is undergoing a profound transition in the dynamic landscape of the 21st century, driven by innovative technology in education and the transformative potential of edtech. "Empower & Embrace: Innovating Higher Education with EdTech" perfectly portrays this movement, emphasising technology's crucial role in shaping future-ready educational institutions. This conference is not merely an exploration of tools and technologies but a deep dive into the ethos of education in the 21st century. As borders dissolve—whether geographical, disciplinary, or pedagogical—the promise of edtech emerges as a beacon of opportunity and a catalyst for change.

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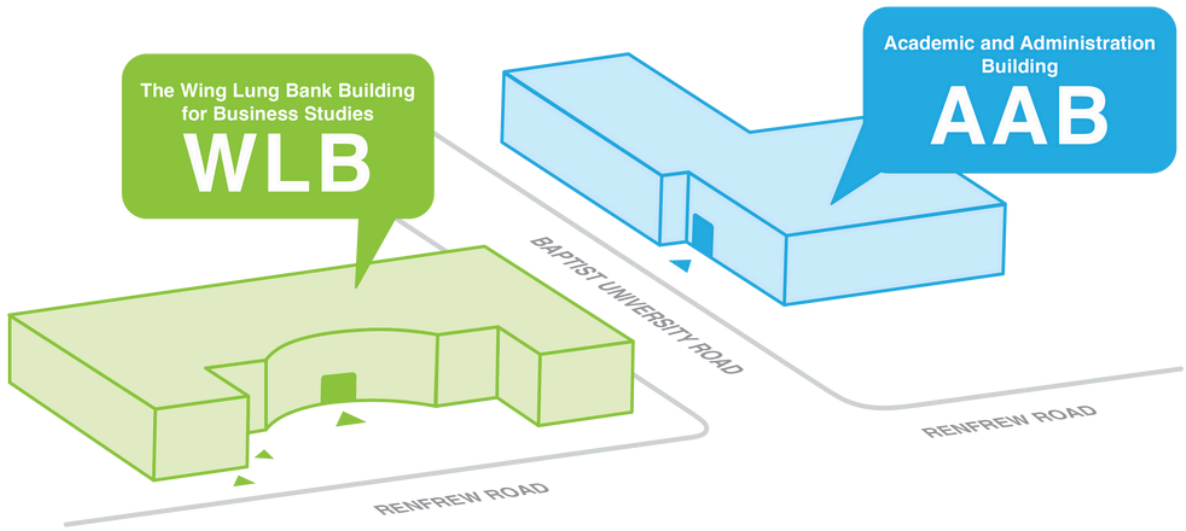
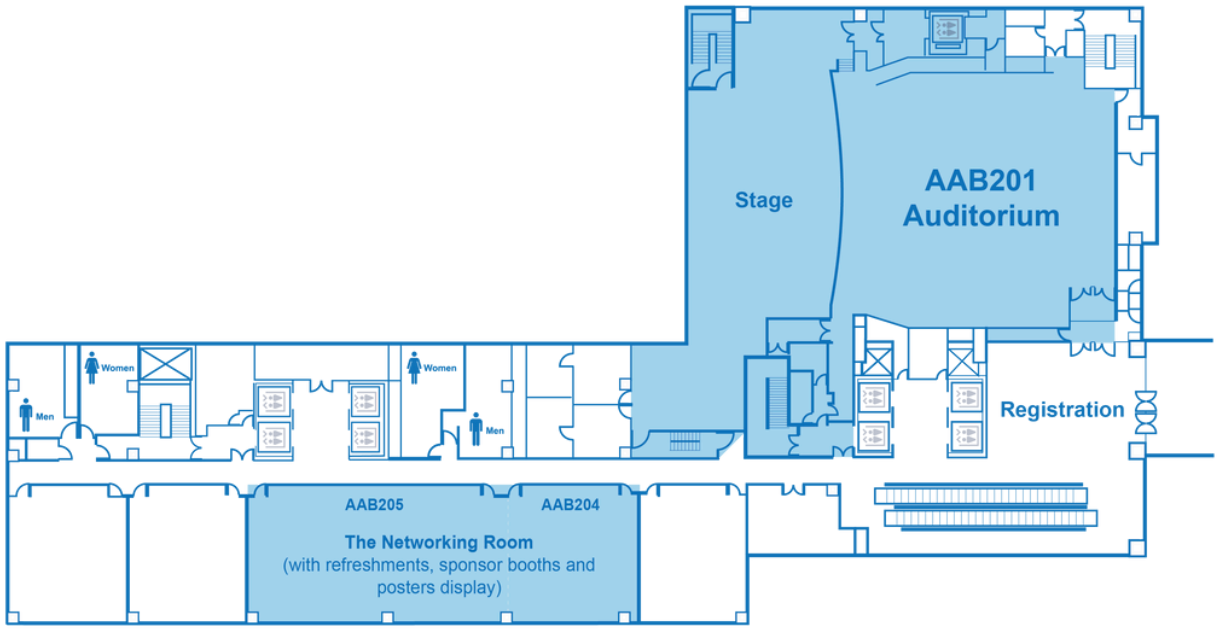
Forum Venue & Floor Plan



Floor Plan on AAB 2/F



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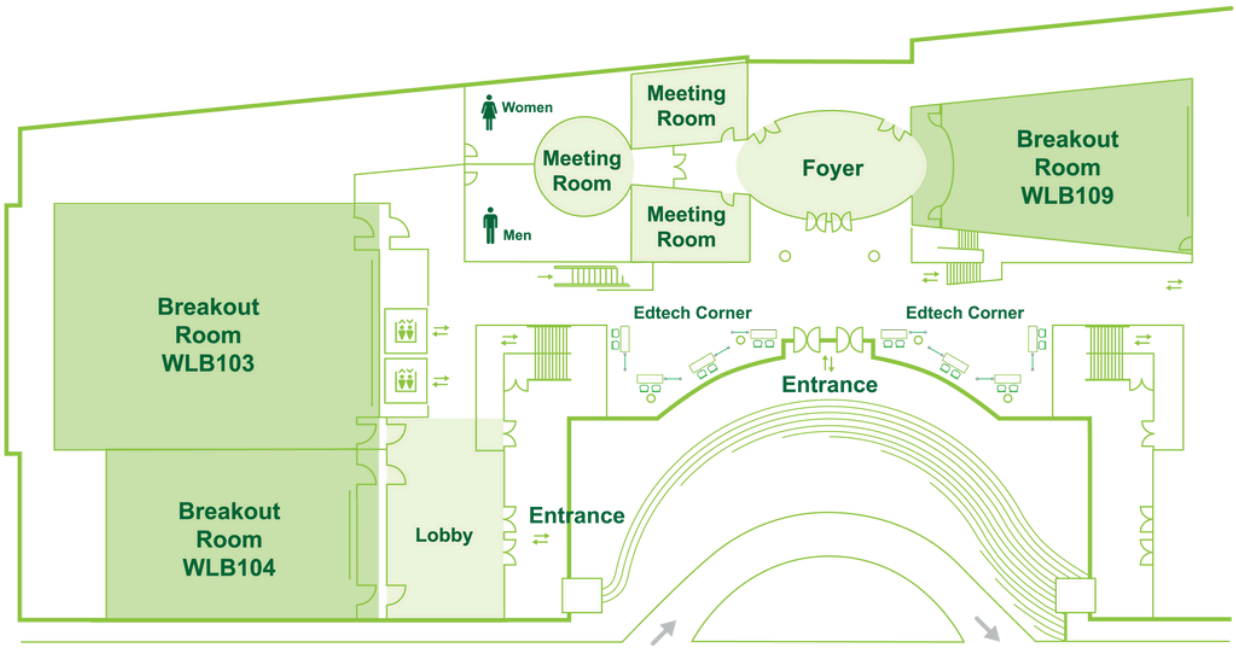

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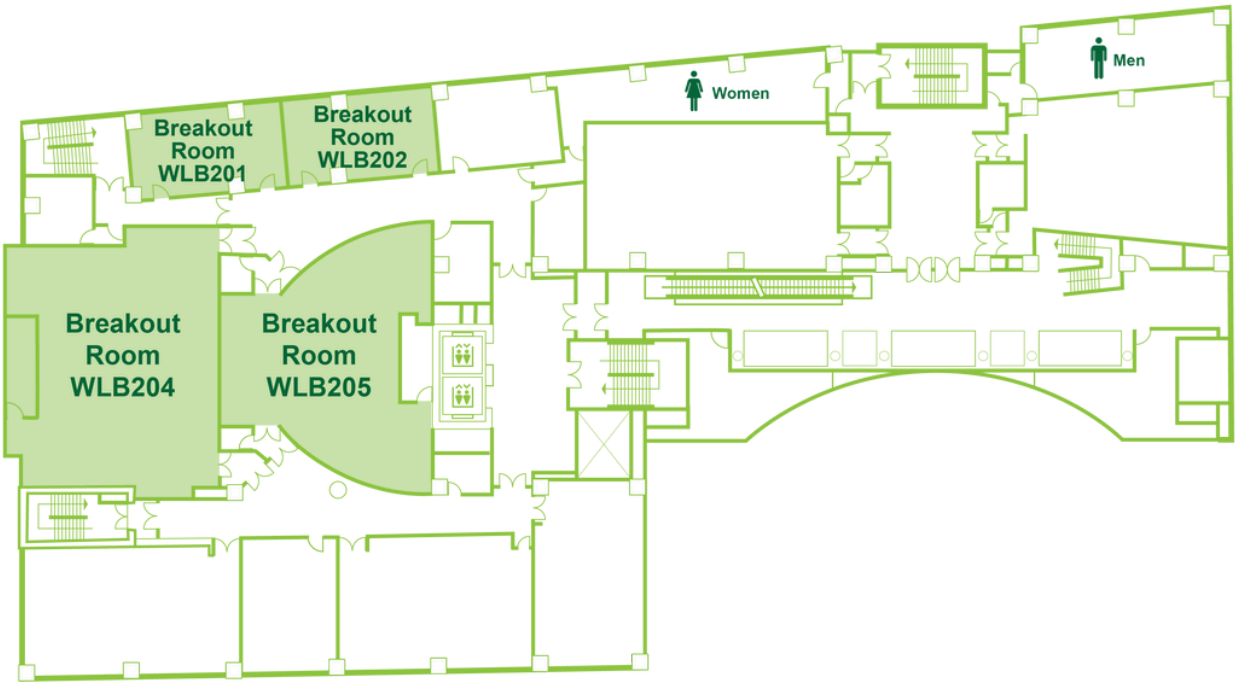

Session at a Glance

Day 1 | 4 December 2024 | Wednesday

Time	Programme	Location
9:00	**Registration**	AAB 201
9:30	**Welcoming** **Dr. Patrachart KOMOLKITI** Chairman of eLearning Forum Asia CEO of Knowledge Xchange King Mongkut's University of Technology Thonburi **Dr. Theresa KWONG** Conference Convenor of eLearning Forum Asia 2024 Director of Centre for Holistic Teaching and Learning Hong Kong Baptist University	AAB 201
9:40	**Opening Remarks** **Prof. James TANG** Secretary-General University Grants Committee	AAB 201
9:45	**Opening Remarks** **Prof. Alexander Ping-kong WAI** President and Vice-Chancellor Hong Kong Baptist University	AAB 201
9:50	**Opening Remarks** **Prof. Patrick CHAU** Provost Chair Professor in Information Systems and Business Analytics Beijing Normal University-Hong Kong Baptist University United International College	AAB 201
9:55	**Kick-off Ceremony & Group Photo**	AAB 201
10:00	**Keynote Speech** **Dr. Albert CHAU** Vice-President (Teaching and Learning) Hong Kong Baptist University	AAB 201

10:45	**Morning Tea Break**	AAB 204 - 205
11:15	**Breakout Session 1**	WLB 1/F & 2/F
12:45	**Lunch & Poster Session** **Edtech Corner**	AAB 204 – 205 WLB 1/F Foyer
14:15	**Breakout Session 2**	WLB 1/F & 2/F
15:45	**Afternoon Tea Break**	AAB 204 - 205
16:15	**Keynote Speech** **Prof. Robert K. KAMEI, M.D.** Professor, Duke-NUS Medical School Yong Loo Lin, School of Medicine, Department of Paediatrics, Adjunct Professor, Department of Physiology, National University of Singapore Duke University School of Medicine, Department of Pediatrics	AAB 201
17:00	**Round Table Discussion** **Prof. Eugene CH'NG** Dean of School of Culture and Creativity Beijing Normal University – Hong Kong Baptist University United International College **Prof. Robert K. KAMEI, M.D.** Professor, Duke-NUS Medical School Yong Loo Lin, School of Medicine, Department of Paediatrics, Adjunct Professor, Department of Physiology, National University of Singapore Duke University School of Medicine, Department of Pediatrics **Prof. Wai-luen KWOK** Associate Vice-President (Curriculum and Pedagogies) Director of the General Education Office Associate Director of the Centre for Sino-Christian Studies Hong Kong Baptist University **Dr. Krittika TANPRASERT** Director, Learning Institute Assistant Professor, Department of Printing and Packaging Technology King Mongkut's University of Technology Thonburi	AAB 201
17:30	**End of Day 1**	AAB 201
18:30	**Conference Dinner**	Cordis, Hong Kong

Session at a Glance

Day 2 | 5 December 2024 | Thursday

Time	Programme	Location
9:00	**Registration**	AAB 201
9:30	**Welcoming**	AAB 201
9:40	**Keynote Speech** **Prof. Eugene CH'NG** Dean of School of Culture and Creativity Beijing Normal University – Hong Kong Baptist University United International College	AAB 201
10:25	**Keynote Speech** **Prof. Rosemary LUCKIN** UCL Knowledge Lab Founder of Educate Venture Research University College London *(Pre-recorded session)*	AAB 201
11:00	**Morning Tea Break**	AAB 204 - 205
11:30	**Breakout Session 3**	WLB 1/F & 2/F
13:00	**Lunch & Poster Session** **Edtech Corner**	AAB 204 – 205 WLB 1/F Foyer
14:30	**Breakout Session 4**	WLB 1/F & 2/F
16:00	**Afternoon Tea Break**	AAB 204 - 205
16:30	**Keynote Speech** **Dr. Krittika TANPRASERT** Director, Learning Institute Assistant Professor, Department of Printing and Packaging Technology King Mongkut's University of Technology Thonburi	AAB 201

17:15	**Handover to eLFA2025 Committee and Closing** **Dr. Theresa KWONG** Conference Convenor of eLearning Forum Asia 2024 Director of Centre for Holistic Teaching and Learning Hong Kong Baptist University **Dr. Krittika TANPRASERT** Director, Learning Institute Assistant Professor, Department of Printing and Packaging Technology King Mongkut's University of Technology Thonburi	AAB 201
17:30	**End of Day 2**	AAB 201

Keynote Sessions

Keynote Session 1

Dr. Albert Chau

Vice-President (Teaching and Learning)
Hong Kong Baptist University

Technologies in Transdisciplinary Education: Opportunities and Challenges

Abstract

(Abstract will be available soon.)

Biography

Dr. Albert Chau is Vice-President (Teaching and Learning) (2016-now). He is responsible for the University's teaching and learning to achieve best student experience and for the nurturing of caring, creative and ethical global citizens. He leads the development of curriculum and academic programmes, quality assurance, diverse pedagogies such as experiential and virtual learning, student recruitment and placement, and globalisation of teaching and learning.

Dr. Chau received his BSc in Industrial Engineering and Postgraduate Certificate in Psychology at The University of Hong Kong (HKU), and MSc and PhD in psychology at the University of Wisconsin, Madison, USA. He then taught at the Department of Psychology at HKU and was appointed as Warden of University Hall (1996-2006), Associate Dean of the Faculty of Social Sciences (2000-2002), Director of General Education (2002-2015), and Dean of Student Affairs (2005-2015). He is an elected fellow of the Hong Kong Psychological Society.

Dr. Chau has served on committees and panels related to secondary and tertiary education. He was appointed to the Council of Hong Kong Metropolitan University (2017-now), and several Government committees or advisory panels related to education, elderly affairs, and environment; and provided voluntary service to a few charities and NGOs on youth development, heritage preservation and arts and culture.

Keynote Session 2

Prof. Robert K. Kamei, M.D.

Professor, Duke-NUS Medical School
Yong Loo Lin, School of Medicine, Department of Paediatrics,
Adjunct Professor, Department of Physiology,
National University of Singapore
Duke University School of Medicine, Department of Pediatrics

Strategic Teaching based on the Science of Learning

Abstract

Our modern classrooms have implemented very few lessons gained from the considerable research done on how people best learn. One of the main reasons for this is that many of these findings are counterintuitive. Educators who understand the truth behind these myths can help their students learn better.

Using my unique perspective as an educator and physician, I will provide insights on learning and provide examples of how you can help your students use this knowledge for optimal learning.

Robert will help you:

- Identify examples of the counter-intuitive nature of how people best learn, and why we often employ the wrong strategies to learning optimally
- Illustrate the many influences on how we learn and understand why a holistic approach to learning is needed
- Summarize the differences between knowing about strategies for learning versus knowing how to implement these strategies

Biography

Robert K. Kamei, MD, is a Professor, National University of Singapore (NUS), Duke-NUS Medical School and Yong Loo Lin School of Medicine. He has devoted his career to helping students learn optimally. A pediatrician by training, he has first-hand knowledge that students must be healthy to learn at their best.

In 2006 he moved to Singapore as the first physician hired to help start Duke-NUS Medical School. In 2014, he was a recipient of the Outstanding Educator in Residence Award given by the Singapore Ministry of Education. He served as Associate Provost and founding Director, Institute for Application of Learning Science and Educational Technology (ALSET) at NUS from July 2016 to 2019. ALSET focuses on the rigorous study of educational best practices in the classroom.

His course on the science and practice of learning has been one of the most popular general undergraduate electives at NUS. He wrote his book, Strategic Learning: A Holistic Approach to Studying, to give more students a chance to learn how to optimize their learning.

He holds an undergraduate degree from Stanford University and a medical degree from the University of California, San Francisco.

Keynote Session 3

Prof. Eugene Ch'ng

Dean of School of Culture and Creativity
Beijing Normal University – Hong Kong Baptist University
United International College

Empowering Student Creativity Through Metaverse Technologies

Abstract

Creativity is one of the most widely discussed topics in recent times, particularly in light of revolutionary technologies that are reshaping teaching and learning paradigms. These technologies include the Metaverse and Generative AI. Such innovations bring both opportunities and challenges, particularly in student learning, assessments, and curriculum development. Given their potential, our approach to these technologies should be one of embrace, but with caution—looking for new ways to design curricula that cultivate student creativity. It is projected that, due to significant investments by Big Tech, these technologies will become ubiquitous, evolving into environments for both work and leisure, rather than just tools. Learning to work with these technologies requires interdisciplinary approaches, balancing the concept of dimensionality for creative development, student-led experimentation, the timed release of course content, and diverse teaching strategies. This research explores the challenges of teaching art and design students the full process of VR design, coding, and development. We argue that an interdisciplinary approach to 21st-century teaching and learning will empower students and, if implemented effectively, help us discover the optimal balance between design and development. This, in turn, will better prepare students for a future where interdisciplinary skills are essential.

Biography

Professor Eugene Ch'ng is Dean of the School of Culture and Creativity, at BNU-HKBU UIC. He is a distinguished scholar in the interdisciplinary domain of digital culture and heritage, and a recognised expert in XR technologies. He presently serves as the Editor-in-Chief for PRESENCE: Virtual and Augmented Reality, MIT Press. He has led pioneering centres such as the IBM Visual and Spatial Technology Centre and the Digital Humanities Hub at the University of Birmingham (2011-2013), and the NVIDIA Joint-Lab on Mixed Reality at the University of Nottingham Ningbo China from 2016 to 2023 as founding director. His contributions have been instrumental in advancing digital technologies for cultural heritage, which garnered funding awards from the UK, Europe, and China. He has published over 135 articles, among which were two significant volumes of work 'Visual Heritage in the Digital Age' and 'Visual Heritage: Digital Approaches in Heritage Science' that have contributed to the global discourse on the application of scientific and digital methodologies in cultural heritage.

Professor Ch'ng has been invited twice to the Royal Society, presenting research at the Summer Science Exhibition, and was organiser and speaker at the Royal Society Theo Murphy Scientific meeting in 2017. He has held over 40 international exhibitions on art, computational media, and XR technology research showcase in the digital heritage space, and has also appeared in National Geographic Television and Channel Four's Time Team Special. Prof. Ch'ng was awarded the Ningbo Municipal Individual 3315 Talent award in 2015, and the Minjiang Scholar in 2022. He was named among the top 2% most-cited scientists in the world by Stanford University in 2023.

Keynote Session 4

Prof. Rosemary Luckin

Professor of UCL Knowledge Lab
Founder of Educate Ventures Research
University College London

Empower and Embrace: Innovating Higher Education with Artificial Intelligence

Abstract **(Pre-recorded session)**

This talk explores the integration of artificial intelligence in higher education, examining both opportunities and challenges. Professor Rose Luckin presents a framework for understanding AI's role in educational transformation, from its historical development to current applications of generative AI. The presentation outlines three key approaches: implementing AI tools to address educational challenges, adapting education to enhance human intelligence in an AI-driven world, and educating people about AI for safe and effective use. A structured implementation framework is proposed, encompassing governance, ethics, staff capability, technology infrastructure, and iterative applications. The talk emphasises the importance of purpose-driven AI development aligned with educational objectives, whilst addressing practical considerations including data management, staff development, and evaluation methodologies. Particular attention is given to the distinction between artificial and human intelligence, highlighting the need for balanced integration that maintains educational integrity whilst leveraging AI's transformative potential.

Biography

Rose Luckin is an internationally respected academic and influential communicator across multiple stakeholders about the future of education and technology, particularly Artificial Intelligence (AI). With over 25 years of experience, she is a recognized expert on AI in education, serving as an advisor to policymakers, governments, and industry globally.

Professor is Emerita at University College London and Founder and CEO of Educate Ventures Research Limited (EVR), a company that provides training and consultancy to the education sector to help them leverage AI ethically and effectively.

Throughout her career, Rose has held key leadership roles in academia, including serving on the Director's Strategy Group at the UCL Institute of Education from 2011-2015 and as Pro-Vice-Chancellor, Director of Undergraduate Studies for Science and Technology, and Co-Founding Director of the Human Centred Technology research group at the University of Sussex from 2003-2006.

In recognition of her contributions, Rose was honoured as a Leading Woman in AI EDU at the ASU-GSV AIR Show in 2024 and received the 2023 ISTE Impact Award, becoming the first person outside North America to receive their top honour. She was also awarded the International Francqui Chair in 2018 by the Francqui Foundation in Belgium and named one of the 20 most influential people in education in the 2017 Seldon List.

A prolific author, Rose has published extensively in academic journals, books, and conference proceedings. Her 2018 book, "Machine Learning and Human Intelligence: The Future of Education for the 21st Century," available in English and Mandarin, describes how AI can be eMectively used to support teaching and learning. Her most recent book, "AI for Schoolteachers," published in 2022, is an essential and accessible guide to AI for anyone involved in education.

As a highly sought-after speaker, Rose regularly delivers keynotes and public lectures across the globe on AI, ethics, and the future of education. She engages with the public through a monthly column in the Times Educational Supplement and op-eds in the Financial Times, Guardian, and China Daily. Rose has also appeared on various media outlets, including BBC Radio 4, ITV News, and CNBC.

In addition to her academic and entrepreneurial roles, Rose serves as an advisor to Cambridge University Press and Assessment and is co-founder of the Institute for Ethical AI in Education. She is also President of The Self-Managed Learning Centre in Brighton and sits on a range of advisory boards within the education and training sector.

Rose holds a PhD in Cognitive and Computing Sciences and a First Class Bachelor's degree in AI and Computer Science, both from the University of Sussex. Prior to her academic career, she achieved Associateship of the Chartered Institute of Bankers.

Keynote Session 5

Dr. Krittika Tanprasert

Director of the Learning Institute
Assistant Professor at the
Department of Printing and Packaging Technology
King Mongkut's University of Technology Thonburi

Alternative Credentials: Learning Innovation for Learner of All Ages in Digital Era

Abstract

The situation of an aging society and the fast pace of technological development leads to a change in our education. The workforce will have to support more people.They need to start working sooner and work more effectively, and they also need new skills for jobs that may have yet to exist while learning to be in the world of working. Traditional credentials such as degree programs are insufficient for our workforce development as it is usually rigid and lengthy to ensure graduates' competence for a particular job. Alternative credentials are becoming popular around the world as they are more flexible and focus mainly on being able to perform the job.The scope of alternative credentials and their use cases will be presented. The presentation will dive deeper into alternative credentials in the Thai context for developing workforce competence. Learning preference toward alternative credentials of people about to be trained for a career or those already in the workforce will also be presented.

Biography

Dr. Krittika Tanprasert is the Director of the Learning Institute, King Mongkut's University of Technology Thonburi (KMUTT). She also serves as an assistant professor in the Department of Printing and Packaging Technology. Her mission at the Learning Institute is to improve learning in higher education through faculty development and research. She also oversees KMUTT's strategic theme of Creative and Learning Society. Her main research interest in about learning strategies and the use of alternative credentials for human capital development.

Oral Presentations

BREAKOUT SESSION 1

Day 1 | 4 December 2024 | Time: 11:15 | WLB 1/F & 2/F

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Enhancing Interactivity and Engagement with H5P at Temple University, Japan Campus

Roland Sherwood, Leslie Tirapelle and May May Ho
Temple University, Japan Campus

Abstract

Temple University, Japan Campus (TUJ) is the oldest and largest foreign university in Japan. Founded in 1982, TUJ has developed into a nationally and internationally recognized institution offering an extensive range of educational programs. In addition to its core undergraduate program, TUJ offers graduate programs in law, business, and education; an English-language preparation program; continuing education courses; and corporate education classes.

This paper will discuss TUJ's recent adoption and use of H5P, an innovative technology and software-as-a-service (SaaS) designed to make it easy for educators to develop highly interactive and engaging digital teaching and learning content for use online as well as in the classroom. A range of topics will be addressed, including institutional factors which provided the impetus for H5P's adoption, TUJ's approach to implementation including the development and provision of associated training and user support resources, H5P's feature set and capabilities, examples of TUJ faculty developed H5P content, issues encountered during implementation and lessons learned, and TUJ's plans for future development and use of the technology.

Particular attention will be given to the role H5P's AI-powered Smart Import functionality has played in enabling TUJ faculty to rapidly develop digital teaching and learning content as well as significantly helping reduce the barriers to entry otherwise typically associated with this activity, such as investment of time or the need for a certain level of technological expertise.

In addition, a range of feedback from TUJ faculty concerning their use of H5P – as well as that of their students – will be shared and discussed.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Learners' Usage of Generative Artificial Intelligence in Education: An Analysis Based on the Technology Acceptance Model

Hui Ting Evelyn Gay and Gabriel Gervais
Singapore University of Social Sciences

Abstract

Generative Artificial Intelligence (GenAI) has emerged as a transformative force in education, offering capabilities such as personalised learning, automated feedback, AI tutoring, and creative content generation. These advancements have the potential not only to enhance student learning experiences but also to revolutionise teaching methodologies. However, given that GenAI is relatively new and complex, understanding students' acceptance of this technology is crucial for its effective integration into educational settings.

This study employs the Technology Acceptance Model (TAM) to investigate students' usage of GenAI, providing insights into factors that influence their acceptance and adoption of the technology. TAM posits that two primary factors—perceived usefulness (PU) and perceived ease of use (PEOU)—are significant determinants of user acceptance. According to Davis (1989), perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance," while perceived ease of use is "the degree to which a person believes that using a particular system would be free of effort."

We conducted a survey involving participants enrolled in part-time or full-time degree programs across various disciplines at a university in Singapore. To assess perceived usefulness, participants were asked how useful they found AI tools in different academic contexts, such as complementing course material, acting as a virtual tutor, and summarising content. Factor analysis was performed to summarise this construct. For perceived ease of use, we inquired how many times participants needed to rephrase a question to receive a satisfactory answer from the GenAI tool.

To measure actual usage, participants reported the frequency with which they utilised GenAI tools in various study contexts. Through regression analysis, we found that perceived usefulness had a highly significant relationship with the frequency of GenAI tool usage. This indicates that students who perceived GenAI tools as more useful were more likely to use it frequently. Perceived ease of use showed a marginally significant relationship with usage frequency.

These findings suggest that while both perceived usefulness and ease of use influence students' acceptance of GenAI, perceived usefulness plays a more substantial role. The results underscore the importance of highlighting the practical benefits of GenAI in educational contexts to promote its adoption among students. Educators and institutions should focus on demonstrating how GenAI can enhance learning outcomes to encourage students' adoption of such tools.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Exemplary T&L Award-shortlisted Project:

Advancing Advertising Education through AI and Experiential Learning: Insights from a Campaign Planning Course for Caregivers in Hong Kong

Vivienne Leung
Hong Kong Baptist University

Abstract

Purpose:
This project outlines the design of a research-led teaching and learning approach used in a Service-Learning Campaign Course. The course focuses on understanding the challenges and needs of caregivers in Hong Kong by integrating AI tools and conducting first-hand interviews. The experiential service-learning component in a campaign planning course allows students to engage with real-world problems and gain a comprehensive understanding of the complexities surrounding caregivers in Hong Kong.

Methods:
The AI consumer intelligence tool BrandWatch is used in the course design to analyze online data, providing quantitative insights into caregivers' experiences. First-hand interviews with caregivers in Hong Kong are conducted to gather qualitative insights and understand contextual factors influencing their challenges and needs. The qualitative findings are then compared with the quantitative data from BrandWatch to validate trends observed in the online data, providing deeper context and meaning. This validation process reassures about the accuracy of the findings and allows students to develop innovative solutions that directly address caregivers' challenges and needs for a real client named 60-60. Working on real-world issues helps students develop a sense of social responsibility and recognize their potential to positively impact the lives of caregivers in the community.

Results:
The project's tangible outcomes include creating reflective videos, student reflections, client feedback, project documentation, and conducting pre- and post-tests to assess the impact of AI-integrated campaign planning courses. The results of the pre- and post-test show that using the AI tool BrandWatch positively impacts students' personal and social growth, development, and engagement in learning.

Conclusions:
According to the findings, it is evident that this year's predominant focus is on mental health and well-being. Caregivers face limited support systems, high stress, and workload, along with cultural factors. They advocate for increased support service availability, government backing for work-life balance policies, more public awareness, and partnerships with community organizations for targeted support programs.

Implications to Advertising Education:
Implementing an AI-enhanced, experiential learning model in advertising education faces several challenges. Ensuring all students are proficient with AI tools requires extensive training and resources. Accessing high-quality data for AI analysis and balancing it with qualitative insights complicates curriculum integration. Ethical considerations around data privacy and algorithmic bias demand rigorous training. Additionally, effectively engaging with external stakeholders requires careful coordination, and keeping the curriculum current with rapid AI advancements necessitates continuous updates and faculty development. These issues require strategic planning and interdisciplinary collaboration for successful implementation.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Enhancing Kinesthetic Learning in Pharmacy Education through Clinical Pharmacist Menu Software

Muhammad Tahir Aziz[1] and Sadia Qureshi[2]
[1]Shaukat Khanum Memorial Cancer Hospital & Research Centre,
[2]Rashid Latif Medical College & Rashid Latif Khan University

Abstract

Purpose:
A key learning area for pharmacy students is the use of appropriate medicines and the application of knowledge to optimize patient care via medication therapy. Case-based learning, often involving paper-based care plans, helps students identify, resolve, and prevent drug-related problems. However, students often lack real-world experience and face challenges in decision-making, such as identifying drug-related problems, selecting appropriate medications, and determining appropriate dosages, resulting in low performance. This study aimed to enhance the students learning through Clinical Pharmacist Menu Software and to evaluate its acceptability, usability, and effectiveness.

Methods:
The CPM software was designed to incorporate CDS tools, utilizing a product from Oracle Co., USA. A prospective, questionnaire-based comparative study was conducted among 20 undergraduate pharmacy students. To measure the changes in students' knowledge and decision-making skills for appropriate medication use, the students were initially asked to formulate a care plan using traditional paper-based methods. Later, they were asked to formulate a care plan using the CPM software. The feedback of all students was recorded after each activity through a validated questionnaire. CDS systems were analyzed for their potential to improve student learning and their effectiveness in identifying and resolving medication errors.

Results:
The findings of the study indicated that CPM was able to support student learning in optimizing the medication therapy, showing 48% improvement in response to questionnaire $p<0.0001$ and that the students found using CPM was clear, usable, easy to follow, and helps in enhancing knowledge. The number of clinical pharmacy interventions using the CPM software was higher compared with that using the PCP (7% vs. 4.5%).

Conclusion:
CPM has the potential to significantly improve student kinesthetic learning, knowledge, and decision-making skills in medication therapy. CPM could be a valuable tool for enhancing pharmacy students' ability to optimize medication therapy.

Recommendations/Future directions:
Web-based CPM software can be an asset for pharmacy students, offering a variety of features that can make learning more efficient and effective.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 104

Technology Innovation Award-shortlisted Project:

An Inclusive World of Emotions

Kelvin Lee
Hong Kong Baptist University

Abstract

An Inclusive World of Emotions' is an innovative HKBU service-learning project combining advanced technology with empathy development. Students use MetaHuman and Unreal Engine to create realistic 3D facial animations portraying ethnic minority students' emotions to understand and share their emotional experiences. The project applies Scherer's appraisal theory and leverages AI tools for monologue design, episodic visual memory creation, and facial performance preparation. Students interview ethnic minority students from the Islamic Kasim Tuet Memorial College HK, create fictional characters, and produce empathetic animations. This approach enhances students' technical skills, emotional understanding, and sensitivity towards diverse social and ethnic groups, bridging technology and psychology in animation education.

All the animations are hosted on the YouTube Project Channel at: https://www.youtube.com/@SLFacialAnimProj.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 104

Community Outreach Award-shortlisted Project:

Going Beyond: Localizing the United Nations Sustainable Development Goals through Lasallian Social Entrepreneurship

Norby Salonga
Paula Nicole Zaldivar, Mary Ann Santiago, John Mark Calves, Christian Gawaran, and Ofelia Villanueva
De La Salle University

Abstract

Going Beyond: Localizing the United Nations Sustainable Development Goals through Lasallian Social Entrepreneurship highlights the case of De La Salle University's Lasallian Social Enterprise for Economic Development Center. The Center which localizes SDGs by developing a model of social entrepreneurship that provides students and community partners to work together in developing, operationalizing, and sustaining social enterprises that address economic, societal, and environmental challenges in the community. The Center is the first institution in the country and in the region to fully operationalize the full-cycle integration of social entrepreneurship into the curricular, research, and social engagement programs with the use of technology (capacity building and monitoring) from senior high school up to the graduate level. At present, completion, retention, and pilot success rate is 100 % across SE development programs, while income generating social enterprises is 85%. The Center now implements 12 programs and 35 initiatives local and international.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 104

Community Outreach Award-shortlisted Project:

#Digitalino: Digital Literacy Outreach Program

Ana Mae Cantel
Centrai Philippine University

Abstract

The #Digitalino: ASEAN Digital Literacy Program tackles the rising challenge of misinformation and disinformation in the Philippines, intensified by the COVID-19 pandemic and the 2022 elections. Developed in collaboration with the ASEAN Foundation, Google.org, and Limitless Lab—with Central Philippine University faculty as certified Master Trainers—the program aims to improve digital literacy among diverse groups, including youth, educators, parents, the elderly, PWDs, PDLs, and indigenous communities. Interactive workshops focus on identifying credible sources, understanding digital information's impact, recognizing biases, and fostering responsible digital citizenship. Outreach efforts across educational institutions and community organizations have reached over 11,000 participants, with 16 percent personally trained by the researcher. Participants commended the program for enhancing awareness and promoting responsible online behavior. Many have replicated the workshops, reflecting strong belief in the advocacy. Future plans include expanding outreach and integrating digital literacy into educational curricula as a service-learning component to widen the reach.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 104

Exemplary Teaching and Learning Award-shortlisted Project:

The TIMS Pedagogy: A Holistic Approach to technology-enhanced Teaching and Learning

Rodney Chu
Hilda Hiu-dan Cheung, Jeffrey Chun-fai Ho, Pauli Po-yan Lai and Kai-pan Mark
The Hong Kong Polytechnic University

Abstract

In response to three challenges that we are facing in Hong Kong higher education, namely the reserved motivation and engagement of students, digital divide between teachers (digital migrants) and students (digital natives), and the shortage of physical learning space, we have iteratively derived the "TIMS" model: Technology Integration, Interdisciplinary Collaboration, Multimodal Assessment, and Student-Staff Partnership. The TIMS model extends beyond technology to incorporate students' changing learning habits, addresses external constraints, and enhances student-teacher interaction. The spirit of TIMS is to embrace change in learning behaviors and technology, acting as a serial innovator to create and deliver ed-tech solutions. Exemplary cases have emerged from online discussions using Padlet in the earlier days, to the co-creation of immersive learning content with students, and currently a GenAI solution, Virtual Assistant TIMS (VAT), in providing instant feedback on student work for continuous improvement, and to consolidate a ubiquitous learning life for 21st century education.

UGC-funded Universities Sharing Session

Location: WLB 109

Empowering Digital Citizens through Immersive AR Learning Trails among Diverse Freshmen

Lisa Law, Grace Ng, Pakho Huang and Ivan Leung
Hong Kong Baptist University

Abstract

The rapid advancements in technology allow educators to develop innovative learning approaches that cater to the evolving needs of students. This case study aims to evaluate a number (n=4,254) of diverse freshmen's critical thinking skills by providing them with realistic challenges for an immersive augmented reality (AR) learning trail through a mobile app called "AR Trails". The study was conducted during two consecutive years of a University Orientation Workshop (UOW) at a leading liberal arts university in Hong Kong, to provide students with useful insights into the University's 7 Graduate Attributes (GAs) with the highlight of the first GA i.e. Citizenship, and to strengthen their awareness of the University's principles on using AI tools.

To effectively engage students and promote meaningful learning experiences, participating students were encouraged to go through a scenario-based checkpoint of "Ethical Use of Generative AI Tools on Assignment" designed in an AR learning trail based on the concept of a 3C model, which stands for Challenges, Choices, and Consequences. Aggregated data showed that 2,413 out of 4,254 (56.7%) students completed the checkpoint successfully. By providing students with realistic challenges, the model encourages them to think critically about the choices they made, thereby fostering a deeper understanding of the material and its relevance to real-world situations. Quantitative data analysis revealed a notable 22.2% increase in participating students' correct decision-making after understanding the consequences of different options. Qualitative feedback indicated that participating students found authentic case studies intriguing and comprehensible, and they recognized the importance of using AI technology effectively and ethically, which echoed one of the nine elements of a popular Digital Citizenship Framework i.e. Digital Integrity.

Incorporating the 3C model into the design of immersive AR learning trails has been shown to positively impact student engagement and achieve the expected learning outcomes of the study. This model facilitates a deeper level of cognitive processing by challenging students to confront real-world scenarios and make decisions that require their critical thinking skills, thereby enhancing both their procedural and semantic knowledge acquisition in comparison to traditional learning approaches.

The findings in this study provide insights for educators and institutions seeking innovative approaches to develop students' ethical awareness and responsible use of technology in this digital era. More real-life scenarios/challenges with the latest app features can be further developed to inspire learners' ethical engagement in future studies.

UGC-funded Universities Sharing Session

Location: WLB 109

AI-Powered Video for Disaster Education in Nursing Curriculum

Joanna Wing Yan Yeung, Fiona Tang and Ho Yu Cheng
The Chinese University of Hong Kong

Abstract

Introduction and purpose:
This project aims to equip nursing students with the basic concepts in disaster management, which incorporated with the innovative teaching methodologies. Throughout the curriculum, five animation videos accompanied by game-based short quizzes will be provided to engage learning in a relaxing learning environment.

Methods & Results:
The micro- module (MM) will be used in a course over 2024-25 academic year, for 89 nursing students in final year. The videos will be designed for around 10 minutes to act as a starting point for self-learning. Further reading will be provided. The content will be based on the local context so that the students would be more engaged. After viewing the videos, the students will be invited to voluntarily fill in an online questionnaire, which includes questions that evaluate various aspects of the MM design. The results will be ready at the end of November. Pre and post-tests will be conducted to measure knowledge acquisition. Also, evaluation on learning perception in three areas: 1) self-learning (i.e. active learning, usefulness, understanding); 2) mode of delivery (structure, time, animation) and 3) satisfaction and confidence will be evaluated. Pilot study was done with positive results. The author will share the workflow experience with different parties (e.g. students, IT department and teaching team) throughout the preparatory phase of this project.

Conclusion and suggestion:
This project is applicable to the nursing curriculum. To the Principal Investigator's best knowledge, it is the first animation video to provide knowledge on disaster management, including the impact of climate change, in local nursing curriculum. This project will generate knowledge on the effectiveness and learning perception of AI-powered animation in disaster education. For future direction, adjustment to the AI-powered animation will be made after the evaluation from the students. More alternative self-learning methods will be explored such as interactive game, to compare the knowledge retention, learning perception and cost-effectiveness.

UGC-funded Universities Sharing Session

Location: WLB 109

Technology Innovation Award-shortlisted Project:
Enhancing Educational Decision-Making through AI-Driven Dashboards and Learning Analytics

See Ki Ada Tse
Chan Chun Sang, Julia Chen, Raymond Sze, Helen Law, Bruce Li, Rodney Chu, YM Tang and Albert Chan
The Hong Kong Polytechnic University

Abstract

In response to the growing demand for a centralised platform to access meaningful educational data, our team embarked on a project to develop AI-driven dashboards. Our previous studies indicated a strong preference among educators for a one-stop shop platform that could streamline the retrieval and analysis of educational data. Consequently, two years ago, our team launched the Learning Analytics Platform (LAP) with the primary objective of empowering various stakeholders—including university management, committees, academics, and administrators—to make data-driven decisions both effectively and efficiently.

Recently, our team has integrated different Large Language Models (LLMs) into the LAP to enhance the generation of insightful reports. Descriptive insights are generated using online learning behaviour data from, providing a detailed understanding of student engagement and performance patterns. These insights help identify areas where students may need additional support or resources. Auto-generated recommendations by the LLMs are provided to teachers, offering actionable suggestions to enhance teaching strategies and improve learning outcomes. Additionally, LLMs are employed to analyse open-ended survey comments, extracting valuable feedback and identifying common themes. This analysis offers useful and meaningful insights to academics, enabling them to address student concerns more effectively and tailor their teaching methods to better meet the needs of their students.

The integration of LLMs has yielded excellent results, as reported by the academics, demonstrating significant improvements in the quality and utility of the insights generated.

However, the integration of LLMs also presented several common challenges, such as ensuring managing accuracy and maintaining the interpretability of the generated insights. To address these challenges, our team employed a range of strategies to ensure the platform remains efficient, secure, and user-friendly.

Our presentation will delve into the development process of the LAP, the integration of LLMs for report insight generation and the positive feedback received from academics. We will also discuss the challenges encountered during the integration process and the innovative solutions implemented to overcome them. Additionally, we will explore the implications of these advancements for future educational decision-making and the potential for further enhancements in learning analytics platforms.

UGC-funded Universities Sharing Session

Location: WLB 109

Blending Boundaries: Redefining Learning Environments through Digital Team-Based Learning

William Man Yin Cheung, Leon Chi-Un Lei, Kenneth Kam-Wing Lo and
Ray Chak Chung Cheung
City University of Hong Kong

Abstract

Team-based Learning (TBL), during which learners collaborate in teams to explore various class activities, can be an effective way to enhance learners' learning efficiency. In metropolises such as Hong Kong, however, educators often face challenges in securing adequate learning spaces appropriate for this kind of learner-centric learning activities. In response to such challenges, this project shares some cases regarding the flexible use of physical and virtual spaces for TBL at City University of Hong Kong (CityUHK). In particular, we investigate how customised AI chatbots and interactive classrooms can be used for digital TBL beyond a single classroom's physical boundaries.

Learner-learner and learner-AI interactions are crucial components of TBL, so it is essential to have a learning environment that encourages learners to actively discuss and collaborate during face-to-face sessions. The first case study centres around a newly established TBL classroom, which features facilities in the form of modular team islands, wireless collaboration tools, advanced audio-visual (AV) systems, and digital AV over IP technology. A course leader from the Department of Electrical Engineering extended the use of this classroom to establish a real-time connection with audiences in two other separate classrooms via telecommunication technology, thus facilitating a TBL lesson for a large class across several locations. This foreshadowed future learner-centric learning activities conducted among different campuses, regions, or even countries.

In another case study, teachers from the Jockey Club College of Veterinary Medicine and Life Sciences used AI chatbots to stimulate learner interactions in the virtual space. The chatbots simulated horse owners or veterinary assistants, giving learners medical information about sick horses. Learners took on the role of veterinarians, considering how to interact with the virtual clients and make diagnoses. This approach allowed learners to practise their clinical reasoning skills interactively and innovatively. Learners praised this method, sharing that it provided authentic experiences and enhanced their critical thinking abilities. Teachers were also enthusiastic about using AI chatbots to improve learners' case-solving skills.

Our findings demonstrate the successful implementation of TBL across various courses as facilitated by digital tools and interactive classrooms. By blending physical and virtual spaces, CityUHK strives to create an innovative and dynamic learning environment for cross-classroom and cross-campus TBL. The innovative use of these "spaces" fosters collaborative, interactive, and inspirational learning beyond the boundaries of a single classroom.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

Innovation Ability through Self-Efficacy and Case Action Learning: A Comprehensive Review

Yang Ke[1] and Dave Marcial[2]
[1]Chongqing Technology and Business University,
[2]Silliman University

Abstract

The purpose of this paper is to examine the factors that influence innovation ability in students, focusing on the roles of innovation self-efficacy, innovation role identity, and innovation support. The review aims to synthesize existing research on how these factors interact to foster or hinder innovation, particularly in educational contexts. By exploring critical psychological and environmental elements, this review seeks to provide a comprehensive understanding of how innovation skills can be developed and supported through structured teaching methods.

The methods used for this review involved an in-depth analysis of studies, focusing on empirical research that investigates the mediating and moderating effects of innovation self-efficacy, role identification, and perceptions of innovation support. The review draws on quantitative studies utilizing structural equation modeling, hierarchical regression analysis, and case-based learning interventions. Additionally, qualitative studies that explore the experiential aspects of innovation, such as teacher-student interactions and classroom climate, are included to provide a holistic understanding.

Results from the reviewed studies indicate that innovation self-efficacy plays a pivotal role in mediating the relationship between external influences (such as teacher support or organizational culture) and students' creative output. Students with high levels of self-efficacy are more likely to engage in creative thinking, demonstrate innovative behaviors, and persist in problem-solving tasks. Innovation role identity also emerges as a significant predictor of creative behavior, as students who identify strongly with their innovation role are more proactive in generating and implementing new ideas. However, excessive identification with this role can sometimes lead to counterproductive behaviors, such as rule-breaking, when students feel pressured to succeed. The sense of innovation support, particularly in a conducive classroom environment, positively impacted students' willingness to participate in creative activities and pursue innovative solutions.

It is concluded that fostering innovation requires individual psychological readiness and a supportive external environment. Effective teaching methods, such as case action learning involving real-world problem-solving in collaborative settings, are essential in nurturing these abilities. Case action learning promotes innovation and self-efficacy, strengthens role identification, and cultivates an atmosphere of support conducive to creative development. The review underscores the importance of a multifaceted approach to enhancing innovation ability, combining personal psychological factors with environmental support systems.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

Enhancing Students' Research Capabilities in Chemistry Laboratory Courses With AI-Supported Experimental Design

King-Him Yim and Matthew Y.-Y. Lui
Hong Kong Baptist University

Abstract

Among the local universities offering B.Sc. and/or M.Sc. programmes in the field of chemical science, HKBU's Department of Chemistry has prided with our strength on analytical sciences in both teaching and research. Our Department has proudly established a niche as the center of excellence in analytical sciences in the Asia-Pacific region. As a drive to enhance the teaching and learning quality and the outcomes of our taught (as well as research) programmes, we aim to study the impact and efficiency of utilizing artificial intelligence (AI) in enhancing our students' research capabilities in analytical sciences. The integration of AI chatbots, such as ChatGPT, has shown promise in enhancing educational experiences across various disciplines.1 However, its potential in chemical education remains underexplored. This project aims to explore the role of ChatGPT by integrating AI into an authentic pedagogical approach. ChatGPT can serve as a tool to assist students in designing laboratory manuals. These manuals will focus on the chemical analysis of everyday substances, effectively connecting AI with practical chemistry applications. Students will first design the laboratory manual and then engage in conducting the experiments to validate the reliability of the manual they have developed with the use of ChatGPT. Through the integration of AI and experimental learning, the project aims to enhance students' analytical skills and promote the ethical use of AI in education.

References

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Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

Impact of an Online Teacher Professional Development Program on Classroom Teaching Practice in Indonesia

Adrian Rodgers[1] and Tryanti Abdulrahman[2]
[1]*The Ohio State University,*
[2]*Universitas Negeri Gorontalo*

Abstract

The aim of this study is to explore the experiences of teachers who have participated in the online Teacher Professional Development Program Pendidikan Guru (PPG) in Indonesia and investigate the impact of the PPG program. A review of existing literature on Teacher Professional Development (PD), the connection between teacher learning and practice, and the complexities of literacy as a practice has been conducted to support this research.

Using a case study approach, this research was conducted online through Zoom, WhatsApp video calls, zoom meeting recordings and the PPG program's Learning Management System (LMS). The participants in this study were five elementary school teachers who taught at five different schools in Indonesia. This study utilizes various data collection methods, including interviews, observation, and documents or artifacts. Using Stake's (2006) multiple case analysis framework, an individual case report was created, which is structured partly to align with the research question alongside cross-case analysis implementation.

The results show that the PPG program offered a mix of lectures, interactive workshops, and hands-on field experiences with a strong emphasis on technology, pedagogy, and learning innovation. Teachers participated in activities that allowed them to apply their learning in classroom settings. After the program, teachers demonstrated improvements in integrating technology, adopted various instructional methods, showed increased adaptability in implementing the curriculum, and shifted towards student-centered teaching approaches. using the framework of multicase analysis, six assertions emerged from participants' diverse educational experiences. These six thematic assertions identified from the cross-case analysis illustrate the transformative impact of professional development on educational practices while also acknowledging the complexity and diversity of teaching contexts.

The six assertions are:

- Adoption and integration of technology.
- Resilience and adaptability in diverse educational contexts.
- Diverse approaches to teaching and classroom management.
- Shift toward student center learning approaches.
- Various degrees of literacy teaching.
- Challenges in implementing effective teaching practices.

In conclusion, this research significantly contributes to understanding how professional development programs can improve teaching practices. The study acknowledges limitations in generalizing its findings beyond the specific group of Indonesian teachers studied. Practical recommendations are proposed to improve teacher professional development initiatives, targeting key stakeholders like government bodies, universities, teachers, schools, and educational researchers. These suggestions address the distinct roles and contributions of each group in advancing teacher development in Indonesia.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

Digital Ethics and Responsibilities (DEAR): A Society-Wide Approach

Kimmy Cheng, Maggie Choy and Theresa Kwong
Hong Kong Baptist University

Abstract

As has been discussed widely on leveraging AI tools in teaching, learning, and assessments, the critical issues of digital ethics and responsibilities should not be downplayed. As AI and other emerging technologies reshape education, it is essential that all stakeholders consider the implications of using them. The DEAR (Digital Ethics and Responsibilities) Project is a comprehensive initiative designed to empower students, teachers, and society to make informed, responsible decisions in the digital age.

Guided by insights from the kick-off study on perceptions of digital ethics and responsibilities, the DEAR Project aims to raise awareness of digital ethics and responsibilities in society. While it significantly contributes to higher education, the campaign will extend beyond universities, benefiting secondary and primary schools, as well as other community sectors, making it a society-wide educational effort. It is believed that only through such a wide-reaching approach can foster a culture of ethical responsibility in the digital age.

Key initiatives of the DEAR Project include establishing a global network of digital ethics experts to foster collaboration and resource sharing and developing a digital ethics microcredential that offers targeted learning on digital ethics fundamentals, data and AI ethics, digital well-being, etc. The project also organises events like webinars and workshops to engage educators, students, and experts in discussions on digital ethics and creates educational materials such as videos and online resources to promote awareness across society.

The DEAR Project is a work-in-progress initiative, continuously evolving as it addresses the need for digital ethics and responsibilities in the rapidly changing world. This presentation will share key insights from the kick-off study and how the findings have informed the subsequent development of the project – to guide the project as it expands its reach, ensuring that the initiative remains relevant and impactful for students, teachers and society at large.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces

Location: WLB 205

Enhancing Science Education through Virtual Simulations: The Quest2Learn Development Journey

Chinat Yu[1], Jeffery Zhou[2], Siam Mohammed[2], Yat Yin Cheung[3], Donald K. L. Chan[3] and Eric Johnson[2]
[1]*Stanford University,*
[2]*Johns Hopkins University,*
[3]*The Chinese University of Hong Kong*

Abstract

As education evolves, integrating innovative technologies to support teaching and learning is increasingly essential. Quest2Learn (Q2L) is an educational technology platform that leverages virtual simulations to provide immersive, hands-on science labs for students. This poster chronicles the platform's development journey from initial Augmented Reality (AR) prototypes to its current web-based simulations using Three.js, highlighting the challenges, iterations, and technical evolution involved in creating a scalable virtual lab solution.

The development began with AR-based experiences, providing interactive 3D simulations. However, logistical and accessibility challenges prompted the team to explore other solutions. After experimenting with Unity and Microsoft HoloLens to enhance interactivity and immersion, the platform transitioned to a web-based model using Three.js, ensuring accessibility without requiring specialized hardware. This web-based approach allowed for broader adoption potential, enabling students to perform virtual lab experiments across diverse educational environments.

Pilot testing with over 400 students at Johns Hopkins University and the Chinese University of Hong Kong provided critical insights into the platform's effectiveness. Data collected from pre- and post-experiment surveys measured student engagement, comprehension, and overall satisfaction. The results indicated significant improvements in both engagement and learning outcomes, with students reporting increased confidence in conducting science experiments.

This presentation presents the key stages of development, including collaboration with educators, feedback loops, and technical challenges involved throughout the project. It also outlines future directions, such as expanding the platform to cover additional scientific disciplines and refining usability based on ongoing feedback. The findings suggest that virtual simulations can democratize access to science education, offering scalable, flexible, and inclusive solutions for schools with limited physical lab resources.

In conclusion, Quest2Learn demonstrates how virtual simulations can bridge the gap between theoretical learning and practical application, making complex scientific concepts more accessible and tangible for students. This development journey showcases the power of virtual simulations to enhance science education and points toward the future of blended physical and virtual learning spaces.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces

Location: WLB 205

Engaging Non-Science Students Learn AI by Integrating Gamified Metaverse and Self-Paced Modular Online Learning

Paolo Mengoni
Hong Kong Baptist University

Abstract

Learning Artificial Intelligence (AI) poses significant challenges for students without a computer science background. However, AI literacy is essential for future readiness. To address this and to support the individual students' learning needs, in teaching a course on AI to Arts students, I developed and implemented a self-paced blended learning module leveraging the metaverse to improve the learning experience and learning outcomes. Traditional 2-hour AI programming lab sessions, where all students follow the same real-time tutorial and complete assignments, were found to be overwhelming. This lab format did not accommodate the varied attention spans of students learning abstract programming. Considering the individual learning needs, I designed modular online video tutorials for self-paced learning, augmented by metaverse consultations. The real-time lab sessions were re-designed into short, practical online video series to guide students learn visual programming tools, each lasting around ten minutes, with a module comprising two to four tutorials. Each short video allowed students to achieve small tasks, building learning confidence and satisfaction. After completing a module, students tackled more challenging, comprehensive tasks, reinforcing learning-by-doing and active problem-based hands-on approaches. Self-paced learning enabled students to learn at their own speed and replay confusing parts. Video analytics helped identify areas where students needed more support, allowing for adjustments in in-class explanations. The lab Q&A sessions were moved to a metaverse space, where students could ask questions to the teacher during scheduled consultations or exchange ideas with classmates. This gamified environment, where students could move around using videogame controls and interact via audio/video or text chat, encouraged higher-skilled students to help their peers, providing flexibility and openness to ask questions. Feedback collected via the Course Feedback Questionnaire (CFQ) and focus group interviews indicated high student satisfaction. Increased participation rates, improved lab assignment and project grades confirmed the engagement and achievement of learning outcomes. Students appreciated the self-paced video tutorials and found the metaverse consultations enjoyable and effective, meeting their demands for personalized study and maximizing their understanding of new knowledge. In conclusion, the strategy of self-paced modular online tutorials and gamified metaverse consultations significantly enhanced the learning experience and outcomes for Arts students in AI education. Future research should explore the adaptability of this approach to other subjects and its long-term impact on student learning outcomes.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces

Location: WLB 205

German Culture and Language Learning in the Metaverse

Alexander Markus Kling
The Chinese University of Hong Kong

Abstract

This paper presents the Teaching Development and Language Enhancement Grant (TDLEG) initiative aimed at creating an immersive online classroom experience for German language learners through the Metaverse. The project seeks to enhance students' understanding of German culture and language by providing a virtual environment for interactive learning.

Utilizing a platform like Rec Room, we have developed a virtual world that includes a German-style marketplace, train station, hotel, and café. These settings, designed to complement the instructional materials used in the German program, foster experiential learning and authentic engagement with the language. Interactive tasks are integrated into both content and language courses, allowing students to navigate real-world contexts and deepen their understanding of course materials.

During the summer session of the 2022/23 academic year, the virtual environment was successfully implemented across most Level 1 and 2 German language courses. Student feedback has been overwhelmingly positive, indicating that the interactive elements and immersive scenarios significantly enhance their language learning experience, particularly in oral fluency. However, some challenges were identified, highlighting areas for further development.

As we move forward, we plan to integrate more advanced teaching scenarios for Levels 3 and 4 in the upcoming 2024/25 term. Continuous updates and expansions of the virtual environments are underway, with new learning materials being developed to ensure a robust educational experience.

The findings suggest that while the virtual learning environment has proven effective, ongoing refinement is necessary to maximize its potential. This paper will discuss the methodologies employed, key results from student evaluations, and recommendations for future directions in integrating immersive technologies into language education.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces

Location: WLB 205

Exploring the Impact of Augmented Reality (AR) Technology on Motivation, Creativity, and Stress Management in Education

Ka Po Lee, Joanne Yip, Tsaichun Huang, Ruixin Liang and Pak Yiu Liu
The Hong Kong Polytechnic University

Abstract

Despite extensive research on the incorporation of diverse reality technologies into educational environments, most studies have primarily focused on learners' academic performance. The importance of motivation, specifically the interest in learning has often been overlooked. Motivation plays a crucial role in promoting self-directed learning and fostering creativity. This suggests that while researchers and academia prioritize the fundamental objectives of study, broader implications of learning, such as nurturing intellectual curiosity, enjoyment, and critical thinking, are frequently omitted. This research explores the integration of augmented reality (AR) technology into fashion and textile education, with the aim of enhancing student engagement and creativity while reducing stress. The primary objective is to transition from traditional teacher-centric pedagogies to a more student-centric approach that fosters active participation and critical thinking. Ultimately, the goal is to improve the overall learning experience for students, thereby promoting quality teaching and learning, as well as fostering students 'holistic development and positive values.

To achieve this, this project will employ the mobile application, Artiviva, to enhance AR-assisted learning by providing interactive access to virtual materials. The platform allows registered users to upload videos and 3D images to its content management system, thereby enriching traditional teaching materials with a digital overlay. By scanning static images with smartphones or tablets, users can transform these images into dynamic videos or 3D models, facilitating immersive exploration and interaction from multiple perspectives. A comparative analysis will be conducted between control and experimental groups, with pre- and post-tests assessing motivation, stress levels, and creativity through portfolio assessments. Statistical techniques such as t-tests and ANOVA will determine the significance of observed differences, offering insights into the effectiveness of AR technology in educational settings, particularly in fashion and activewear design.

The anticipated outcomes include deeper student engagement and a shift towards a student-centric approach, benefiting various stakeholders. For example, students will experience increased motivation and reduced stress, while teachers will gain innovative tools for diverse learning styles. Educational institutions will enhance their reputation by embracing innovative, technology-driven teaching methods, and companies can tap into a talent pool that is well-equipped to adapt to evolving technological trends. Overall, AR-assisted education fosters a culture of lifelong learning and prepares students for industry demands.

Educational institutions will enhance their reputation by embracing innovative, technology-driven teaching methods, and companies can tap into a talent pool that is well-equipped to adapt to evolving technological trends. Overall, AR-assisted education fosters a culture of lifelong learning and prepares students for industry demands.

Oral Presentations

BREAKOUT SESSION 2

Day 1 | 4 December 2024 | Time: 14:15 | WLB 1/F & 2/F

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Integrating Generative AI in History Education

Xiaolong Diao
Beijing Normal University-Hong Kong Baptist University United International College

Abstract

History-related courses are significant in number and importance in undergraduate-level education. However, they face practical challenges such as large disparities in students' foundational knowledge, lack of interest, and insufficient engagement, leading to suboptimal teaching outcomes. These issues hinder the primary goals of critical engagement with historical materials and enhancement of humanistic literacy. This study aims to address these challenges by integrating Generative AI—technologies capable of producing a wide range of text, images, and other data formats—at various stages of education. I propose reforms in three phases:

1. Course Content Design: Generative AI is capable of curating diverse historical sources, generating thought-provoking discussion questions, suggesting intertextual connections and contemporary relevance, and creating case studies that help connect historical trends with current social issues. For example, Generative AI might curate multimedia content. The use of Generative AI allows course instructors to diversify different forms of course materials and align content with students' interests and current events.

2. Classroom Activity and Data Visualization: Incorporating Generative AI into the classroom facilitates real-time discussions by providing instantaneous feedback, which the instructor and students can react to. Moreover, benefiting historical classes, it transforms historical data into charts and graphs with identifiable patterns, which can be easily engaged by students. Students benefit from these tangible analyses that highlight relationships between historical data.

3. Assignment Design: Generative AI can create scaffolding questions for complex topics, suggest innovative assignment ideas, and ensure alignment with learning objectives. For instance, Generative AI can easily propose new project-based assignments that inspire creativity.

These methods of leveraging Generative AI are not limited to courses in history but can be adapted by other disciplines in the humanities, such as sociology and media studies. By leveraging Generative AI, we seek to increase student engagement in class, enhance critical thinking, and develop digital literacy that is crucial in today's world. The importance of digital literacy for us today is like the importance of email literacy in the 1990s. By incorporating Generative AI, we address current educational challenges as it promises significant improvements in pedagogy and, hence, in students' learning. Finally, as we leverage this technology, we will explore ethical considerations and data privacy mechanisms to ensure responsible use of the technology.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Integration of GenAI-Empowered Tutorial Materials in Disciplinary Science Curriculum

Kim Hung Joe Lam, Xiafeng Huang, Chui Pang Mok, Chun Sang Chan, Ada Tse, Patel Mitesh, Anthony Ho and Kai-Pan Mark
The Hong Kong Polytechnic University

Abstract

Generative Artificial Intelligence (GenAI) becomes more common and impactful in education. We observed that university students' habitually reply on AI for immediate feedback and assistance. To align with contemporary technological advancements, we have also investigated the incorporation of GenAI in the development of educational content and supporting our current teaching. We present the use of GenAI-empowered tutorial materials in our disciplinary science courses, which have shown improvements in students' learning experiences. This study shares our current practices about the effectiveness of GenAI-supported flipped learning activities in enhancing student engagement and motivation in our disciplinary science subjects: ABCT/FSN3415 Food Analysis and ABCT/FSN3416 Food Analysis Laboratory.

Method:
Two selected science subjects, ABCT/FSN3415 Food Analysis and ABCT/FSN3416 Food Analysis Laboratory, were selected for this study. A total of 38 full-time undergraduate students who participated in this study. The effectiveness was evaluated based on students' volunteer feedbacks gathered from the online questionnaire survey. For both subjects, GenAI-empowered videos were prepared for flipped learning support and students' own revision.

Results:
The data collected from the selected courses in the 2023/2024 Semester 2, showing students' responses to virtual tutorial materials. Our preliminary results include the percentage of students who agreed or strongly agreed with statements and the average scores with standard deviations. In this survey, 12 return feedbacks (31.5%) in the Food Analysis and the corresponding laboratory course, majority (over 80%) agreed/strongly agreed that the GenAI subject materials improved their overall learning experience and can assist their revision for test and examination. Further results are required in future to confirm our findings.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Cloud Recording Sequencing for Online Learning with AI and Non-AI

Sze Kiu Yeung
Singapore University of Social Sciences

Abstract

Introduction and purpose:
This project aims to equip nursing students with the basic concepts in disaster management, which incorporated with the innovative teaching methodologies. Throughout the curriculum, five animation videos accompanied by game-based short quizzes will be provided to engage learning in a relaxing learning environment.

Online learning at the Singapore University for Social Sciences (SUSS) was started before the Pandemic. However, since 2020 (i.e. during the Pandemic), this method of learning was essential given that isolation was required while students learnt online before face-to-face learning could return several years later. Online learning now complements students' face-to-face learning while they learn at SUSS.

Purpose:
The purpose of this study is to learn the potential of artificial intelligence (AI) in shaping online learning. An online-learning platform used in our university is the Zoom system. Since the Pandemic, using Zoom for online learning is the default form of learning before the return of face-to-face learning. A key feature of this system is the cloud recordings (i.e. online videos). If students are not available to attend an online seminar in real-time, they can learn from the seminar's cloud recording session.

Methodology:
Now that AI is available in the Zoom system, sequencing a cloud recording according to topics can now be performed by AI. Furthermore, AI also provides a summary and comments on the syllabus covered. These features are useful, but they may not be complete when the sequencing is applied by AI. Alternatively, the sequence of a cloud recording can be done using a video editor. This latter approach is performed by humans (i.e. non-AI). The methodology proposed in this abstract is to compare the sequencing of a cloud recording between AI and non-AI.

Results:
This comparison is relevant as the input from AI is seamless and efficient, but it may not be complete when compared to the input from non-AI. A demonstration from an online presentation on Generative AI as recorded by Zoom's cloud recording and sequenced by its AI function is compared to the sequencing by non-AI. Results, in qualitative form, will be shown through a demonstration.

Conclusion:
Discussion of the results will be of interest for knowledge-sharing given that the application of AI is now prevalent in all industries including in higher education. A cloud recording sequenced by AI and non-AI is relevant to the eLFA2024's theme of "innovative technology in learning and teaching."

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Mentor's Perspectives on AI-Empowered Peer Mentoring: A Case Study in Hong Kong for University Admission Success

Tsz Yeung Fung[1] and Zhiyi Shen[2]
[1]*Hong Kong Baptist University,*
[2]*Nanjing Normal University*

Abstract

The integration of artificial intelligence (AI) in education is reshaping learning paradigms, enabling personalized instruction and dynamic assessment. While substantial research has highlighted the cognitive benefits of AI in education, its potential to enhance social interaction skills is less documented. This study aims to fill this research gap by exploring an AI-enhanced peer mentoring program tailored for secondary school students preparing for university admission interviews in Hong Kong.

Referencing the Community of Inquiry (CoI) framework, this service-learning initiative integrates AI tools to augment the efficacy of peer mentoring activities. Specifically, 34 university students mentored 81 secondary students by utilizing AI technologies to refine their interview preparation techniques. The study focuses on evaluating mentors' perceptions of AI's effectiveness in enhancing preparation and their roles in facilitating AI technologies during the mentoring process.

To address the research inquiries, the authors employed a mixed-methods approach by conducting content analysis of mentors' reflective journals and executing a focus group interview with participating mentors. The findings indicate that AI tools, including ChatGPT, noticeably bolster interview readiness by delivering personalized feedback and promoting critical thinking skills. Mentors noted that these tools not only expedited the preparation process but also increased mentees' confidence through customized content and enhanced strategic preparation. Nevertheless, they also faced challenges, such as addressing misinformation from AI tools and overcoming mentees' unfamiliarity with the technology.

Despite these hurdles, the findings affirm the valuable role of AI tools as enduring educational partners, enriching peer support dimensions. This study contributes to the academic dialogue concerning AI in education by shedding light on its capability to boost cognitive and social learning outcomes. These findings have implications for the design of future AI-integrated mentoring programs, bridging theoretical and practical knowledge gaps in educational technology and peer mentoring.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Capacity Building in Research-Informed Teaching and Learning through a Community of Practice

Kara Chan and Archimedes David Guerra
Hong Kong Baptist University

Abstract

Engaging undergraduate students in research has proven to be an effective pedagogical approach that fosters active learning and authentic assessment. Through the research process, students gain an appreciation for how knowledge within their discipline is developed. However, there remains to be a need for teachers in the higher educational sector who have sufficient experience in engaging students in course-based research. Moreover, there is a lack of empirical evidence on the benefits of research-informed teaching and learning pedagogies in the non-science disciplines.

Funding was secured to form a Community of Practice (CoP) titled "Building a Community of Practice in Research-Informed Teaching and Learning". This CoP consists of an initial group of thirteen faculty members and three senior year PhD students from four higher education institutions in Australia, Hong Kong, and the Philippines. The project aims to enhance research-informed teaching and learning in non-science disciplines, specifically in social sciences, business, and communication, while also deepening the community's knowledge and expertise in designing and implementing assignments and projects with research elements.

This Community of Practice is unique in two respects. First, it aims to promote undergraduate course-based research. Second, it engages senior and junior academic/teaching members and PhD students from the communication, social sciences, and business disciplines. The group will meet three to four times per semester over the course of a year to develop assignments with research elements using different research methodologies, share teaching experiences, and evaluate students' learning outcomes as well as their impact on student engagement.

Twelve CoP members have pledged to design and implement an assignment which incorporates research elements in the 2024/25 academic year, contingent upon prevailing conditions. Meetings are scheduled on Saturday mornings, allowing for both online and face-to-face participation. Three meetings were conducted to discuss assignments with research elements using qualitative and quantitative methods, as well as secondary data analysis. During these meetings, CoP members shared assignments and discussed strategies for improvement. The group also explored variables related to the research system and culture, such as ethical clearance procedures, student research panels, and the use of generative AI in teaching and learning.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 104

D2L-sponsored presentation*:

Beyond the Hype: Student Voices on AI in Higher Education - A Large-Scale Australian Study

Trish McCluskey
Deakin University

Abstract

While universities scramble to integrate AI tools and grapple with ethical dilemmas, one critical perspective is often missing: the student voice.

This paper will report on a groundbreaking collaborative study across four major Australian universities.

Recent widespread adoption of Generative Artificial Intelligence (GenAI) in higher education has sparked numerous questions about student usage and perceptions. While existing research often focuses on specific disciplines or contexts, this study presents a comprehensive, multi-institutional investigation into student experiences with GenAI across four Australian universities.

Our research adopts a relational epistemology framework, viewing AI technologies not in isolation but as part of a broader sociotechnical ensemble. This approach acknowledges that student interactions with GenAI are deeply embedded within their educational contexts, personal backgrounds, and learning conditions. The study is distinguished by its intentionally broad focus across disciplines, levels of study, and modes of learning, as well as its innovative cross-institutional collaborative foundation.

The project employs a mixed-methods design, beginning with 20 focus groups involving 79 students from diverse academic backgrounds. These discussions explored key themes including AI platform usage, student-AI interactions, trust, emotions, and future implications for education. Following thematic analysis using Braun and Clarke's six-phase process, the research progressed to a large-scale survey investigating student use, perceived usefulness, AI literacy, and trust in generative AI. The survey has gathered over 7,000 responses, representing one of the largest studies of its kind in the Higher Education sector.

Initial findings reveal that students approach GenAI use with careful deliberation, seriously weighing both benefits and risks in their learning journey. The research shows that students don't make choices about GenAI lightly, demonstrating complex decision-making processes in determining how, when, and why to incorporate AI into their learning practices.

This research contributes valuable insights into how students across different demographics and academic contexts engage with GenAI. The presentation will reflect on the innovative collaborative research model employed across the four universities, discussing how this approach has enhanced our understanding of AI in higher education and opened new pathways for cross-institutional research partnerships.

* This presentation, sponsored by D2L, will feature a 30-minute sharing session (including Q&A).

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 104

Traditional Innovation: Implementing Authentic Assessment in a Digital Learning Environment

Vivienne Leung and Kimmy Cheng
Hong Kong Baptist University

Abstract

The upheaval in the education system brought forth by the unparalleled growth of digital technologies and AI also extends to assessment. However, the challenge remains to ensure that these innovations complement and enhance rather than replace or overshadow the importance of the learning process, learning outcomes, and assessment practices. This presentation provides ways to conduct authentic assessments within a digital age, emphasising pedagogical strategies and outcomes yet discussing how technology can add value to students' learning when implemented thoughtfully.

Drawing from case studies and real-world examples, we show how authentic assessments—tasks that mirror real-world applications—can be seamlessly threaded into the fabric of current learning environments. This presentation will discuss overcoming the existing difficulties and what advantages may be derived from the introduced and implemented authentic assessment in digital presence education.

We will also explore possibilities for using digital tools, including AI, to promote authentic assessment and effective student learning and engagement. Specifically, the presentation will share teaching practices with the service learning element, enabling students to engage in campaign and event planning. These courses apply consumer intelligence platforms and digital portfolios for knowledge enhancement and closing the gap between theory and practice. We will highlight how modern technologies such as AI-powered analytics, digital forums, and continuous feedback platforms drive peer collaboration and facilitate efficient formative assessment processes.

It is important to conclude this presentation by striking a harmonious balance of tradition and innovation in technology. When appropriately integrated into authentic assessment frameworks, digital tools promise great enhancements to the learning experience and development of critical skills that would better prepare students for an increasingly complex professional environment. By blending tradition with innovation, we aim to provide practical insights for teachers seeking to enrich their assessment practices in today's tech-savvy world.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 104

Generating Personalized Assessments and Feedback: The Applications of GPTs for Enhancing Prompt Writing Skills

Hou-Yi Ting
Da-Yeh University

Abstract

Given the critical role that Generative Artificial intelligence (AI) tool is now widely accepted in several fields, it is of growing importance for educators to make thoughtful decisions as to how and in what capacity generative AI tools should be leveraged to assist in the development of students' learning. Although AI has already demonstrated promise in significantly improving human productivity, several scholars have argued Generative AI may harm learning (Iskender, 2023; Bastani et al., 2024)

This study adopts an action research approach to investigate an AI prompt writing workshop that consisted of 15 participants, including 7 industry professionals and 8 teachers from elementary to university educational level. Participants used GPT-based tools provided by the instructor to conduct a summative assessment in which The GPTs generated assessment tasks also offered scores and feedback based on the learners' responses, enabling them to enhance their prompt-writing skills. In addition, learners were encouraged to continue using the GPTs as AI tutor for self-directed practice after the course, ensuring that their prompt-writing skills aligned with real practical demands. To monitor participants' learning outcomes, this study utilized a LINE group for continuous post-course follow-up and progress tracking.

The research data includes both quantitative and qualitative components, consisting of post-course satisfaction surveys, open-ended questions from the post-course questionnaire and participant interviews conducted during the ongoing follow-up process. The results indicate that, according to the quantitative data from the post-course satisfaction survey, approximately 98% of participants found the AI tools significantly beneficial to their learning experience. Additionally, GPTs not only provided valuable feedbacks during the assessment process but also helped participants better benefits to improve their prompt writing skills while reinforcing key course concepts. In the follow-up interviews, 6 participants reported having applied GPTs in their professional work, expressing strong approval of the tools' ability to enhance the accuracy and efficiency of prompt writing.

Although some studies concerned that AI may weaken students' critical thinking and creativity, this study suggests that educators may adopt a student-centered approach when integrating AI into the teaching process and carefully manage the timing and methods of AI use, AI-assisted teaching, therefore, benefits in offering personalized supports and feedbacks to students, ultimately enhancing the overall learning experience.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 104

FeedbackFruits-sponsored presentation:

How to Assess Student Performance in the Age of AI? Utilising the Peer Review and Group Member Evaluation Tools in Feedback Fruits for Performance Review

Paul Whitla
Lingnan University

Abstract

The rapid emergence of artificial intelligence (AI) technology and the widespread availability of generative AI tools such as ChatGPT has caused widespread concern amongst academics with respect to the impact on student assessment. Traditional forms of measuring student achievement, such as through individual essays and written group projects have become all too easy to complete for students with access to the newly available tools. In many cases, ChatGPT has become adept at delivering answers to traditional essay type questions at a standard that matches or even exceeds the answers of a typical college level student.

In response, some colleges and universities have taken to banning the use of AI or have employed technologies to indicate when students make use of generative tools. Other academics, recognising the reality of AI's availability, have striven to develop assessment methods which allow AI's usage only to struggle to find alternative tools to assess relative student achievement. This paper puts forward the idea that tasking students with critiquing the work of others in the form of peer review and assessing the performance of their peers through group member evaluation provides an ideal means of assessing important evaluative and comparative competencies.With the assistance of the integrated instruments available within Feedback Fruits, academics can swiftly and easily prepare a range of assessment methods which requires students to work on tasks which AI tools cannot currently complete on their behalf.

The paper begins with a discussion of the difficulties of using long-established assessment methods in the AI era. It then discusses the types of competencies which AI can to an extent replace and those which it cannot; peer review and group member evaluation are put forward as an ideal form of alternative assessment methods. The paper concludes with some examples of how Feedback Fruits has been used to develop and automate such assessments.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Technology Innovation Award-shortlisted Project:

Developing an In-house gen AI Chatbot Customization Platform to Empower Teaching and Learning

Simon Wang
Hong Kong Baptist University

Abstract

In this informative workshop, participants will explore ByteWise, an innovative Gen AI chatbot customization platform created through a collaboration between the Language Centre and the Department of Computer Science at Hong Kong Baptist University (HKBU). ByteWise is designed to enhance educational interactions by allowing teachers to create custom chatbot prompts in natural language, thereby facilitating dynamic student engagement. A significant feature of the platform is the ability for teachers to access students' chat histories with prior consent, ensuring transparency and ethical use of data. Additionally, the costs associated with using premium Large Language Models are subsidized by university-funded projects, making this technology accessible at an affordable rate. Attendees are encouraged to register for both a teacher and a student account at https://chat.hkbu.life/#/register before the session and to familiarize themselves with the platform's extensive capabilities at http://llm.hkbu.life. This session is ideal for educational professionals seeking to integrate advanced AI tools into their teaching practices. This session will be co-presented by Dr Simon Wang and his digital twin (a customised chatbot-empowered avatar).

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Technology Innovation Award-shortlisted Project:

Swetha Margaret TA and Renuka Devi.D
Stella Maris College (Autonomous)

(Abstract will be available soon)

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Exemplary Teaching and Learning Award-shortlisted Project:

AI Integrated Teaching & Learning: From real-life scenarios to real-life applications

Ruixin Yang and Zhenzhi Yang
Beijing Normal University-Hong Kong Baptist University United International College

Abstract

This project is dedicated to filling the gap between static psychological theories to practical application for college learners. Firstly, we have developed an AI agent that can offer knowledge and vivid materials for class preparation, eliminating the need for repeated pre-use training and easy to share. With the help of AI and customized intelligent agent, situational teaching materials and authentic assessment. were generated. For example, by utilizing the AI, we have generated stories and videos to craft a child-rearing simulation game, incorporating the Hamburger methodology: presenting a practical phenomenon, explaining theories behind this phenomenon, and posing another relative practical question, such as solving infants' separation anxiety using Piaget's theory. Also, formulas were provided for AI beginners to assist with feedback, along with emotional and academic support. Looking ahead, we plan to refine our AI agent and implement this teaching method across various courses, to test their effectiveness in transforming psychological knowledge transformation into the real-world scenarios.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Exemplary Teaching and Learning Award-shortlisted Project:

Towards Accurate and Real-Time Assessment in Large, Multidisciplinary Classes

Hongyan Geng
Xiaopeng Tang, Pui Yun Paulina Wong, Chi Ho Ip, Ronnie Homi Shroff and King Sun Frankie Lam
Lingnan University

Abstract

Traditional assessments often struggle to accurately and instantly evaluate student learning on project-based assignments in large, multidisciplinary classes. The ARTS addresses this challenge by encouraging students to integrate their discipline-specific knowledge with course materials, thereby mitigating discrepancies from varied academic backgrounds. ARTS' in-house formative assessment system enables real-time evaluations. Implemented among 1,200 students across 33 different majors—including arts, science, social science, and business—the ARTS demonstrated a 30% increase in accuracy and an 11% improvement in students' performance. The project's data-driven methodology and its adaptability to versatile educational contexts position it as a transformative initiative in the educational landscape.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces *(Note: This session will feature five presentations.)*

Location: WLB 205

The Massively Multiplayer Online Games: Peer-to-Peer Architectural Design for Metaverse Simulation of Skill Learning

Florence Mei Kuen Tang[1], Ray Mau Fung Lee[1], Tsz Kin Cheng[1], Rocky Hui[1], Chun Yin Fok[1], Long Hin Ng[1], Charis Yuk Man Li[1] and Olivia Miu Yung Ngan[2]
[1]The Chinese University of Hong Kong,
[2]The University of Hong Kong

Abstract

Introduction and objective:
Interprofessional peer-to-peer collaboration with different principal approaches is innovative in broadening various views of critical thinking and enabling a synergistic influence of knowledge application.Currently, massively multiplayer online games (MMOGs) apply the metaverse concept in the learning process to connect multiplayer in the immersive virtual world, which facilitates social interaction, knowledge retention, and interactive engagement.

Biomedical Sciences students contribute their deep understanding of human biology, physiology, and possibly pathology, which can be used to develop realistic health systems, character biology, or in-game medical scenarios. Meanwhile, Computer & Engineering students focus on the technical aspects, such as programming, software architecture, and game mechanics, ensuring that the game functions smoothly and effectively. This project aims to create an innovative idea to combine the strengths of two distinct fields, providing them with a unique experience highly relevant to their future career path.

Methods and Results:
The project presents the development of a MMOG focused on animal handling technique, which is one of the essential techniques for biomedical research. The development process involved both program students with different stages, including concept design, 3D modelling, programming, and network implementation. Using Unity as the primary game engine allowed for the integration of Netcode For GameObjects, which facilitated smooth multiplayer interactions and real-time communication among players. Additionally, 3D Studio Max created realistic animal models and environments, enhancing the immersive experience. Such engaging MMOG of simulated learning technique entitled 'Multiplayer Animal Handling Simulations (MASS)' includes animal husbandry care and management of drug administration within a laboratory environment.

The MASS prototype of the trial run has been performed for the students of the biomedical sciences, who are required to train the animal handling related to biomedical research. The findings from this project highlight the potential of multiplayer gaming as an effective educational tool for animal handling, offering insights into both the technical and pedagogical aspects of game design. The outcome of the development of MASS, the course promises more sophisticated simulation-based training tools that provide real-time feedback and integrate ethical considerations, ensuring that students learn the importance of both technical skill and animal welfare.

Discussion and conclusion:
Experiential learning played a crucial role throughout the project, as team members engaged in problem-solving, iterative testing, and user feedback sessions. This collaborative process not only improved technical proficiency but also fostered essential skills in teamwork and project management. Additionally, the outcome of the MASS was excellent for virtual skill training, particularly in animal handling to prevent accidental hazards.

Justifications and Future Directions:
The future directions involve enhancing interprofessional collaboration through cross-disciplinary projects and virtual platforms, expanding peer-to-peer interaction into global networks, and advancing MMO technology to create even more immersive and personalized learning experiences.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces *(Note: This session will feature five presentations.)*

Location: WLB 205

Fostering Digital Citizenship Skills through Scenario-based AR Learning Trails: A Case Study

Kwan Wong, Maggie Choy and Lisa Law
Hong Kong Baptist University

Abstract

In this fast-evolving digital world, especially with the increasing prevalence of generative AI tools, fostering digital citizenship skills among university students is paramount for their academic success. A leading liberal arts university in Hong Kong investigated the impact of using augmented reality (AR) technology, particularly in the realm of Digital Citizenship education. This initiative has led to the creation of scenario-based AR learning trails designed to immerse students in dynamic learning experiences that foster the skills necessary for ethical digital engagement and the scenarios simulated real-world challenges. Involving 16 out of 2,045 students from 7 Faculties/Schools who participated in an AR learning trail activity, the study has undertaken five focus group interviews, utilizing a qualitative approach to gauge the effectiveness of AR integration in educational settings. Focus group interviews were employed to capture the rich, qualitative insights of participants as they navigated immersive AR scenarios. By leveraging the AR technology, participants found authentic case studies more intriguing and easier to comprehend abstract concepts like ethical use of AI tools in their assignments. They are aware of the importance of behaving with digital integrity when using AI technology in their assignments. This hands-on approach not only makes the learning process enjoyable but also reinforces the importance of ethical conduct and integrity in digital learning. Participants expressed appreciation for the storytelling and real-life scenarios within the AR content, which they find effective for understanding ethical principles. This collaboration between educators and technologists has been essential in refining AR platforms to be more user-friendly and convenient to comprehensively grasp Digital Citizenship concepts. The study shows that participants' desire for enhanced communication tools, such as a discussion forum, emphasizes the importance of collaboration in creating platforms for more effective understanding of Digital Citizenship. The study indicates a positive effect on equipping learners with the competencies to navigate the digital world ethically. Future studies will seek a larger sample size for a more accurate result and will build on these findings to further enhance AR's educational applications, with the aim of moulding responsible global digital citizens.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces *(Note: This session will feature five presentations.)*

Location: WLB 205

Exploring the Development of XR Digital Co-Learning Mechanisms and Teaching Applications

Shu-Ping Chang, Chun-Jung Ma, Yu-Hsiu Weng, Sheng-Hsin Yu, Chien-Chun Lin and Ya-Chuan Chiang
Chihlee University of Technology

Abstract

This research focuses on promoting Taiwan's XR digital co-learning mechanism and teaching applications. It first explains the methods of technical analysis and teaching application models, formulating five levels of live broadcasting modes and five levels of receiving modes. After 18 months of promotion, the teaching hours reached 155.5 hours. The researcher conducted interviews to analyze the project executors in 14 counties and cities in Taiwan, and surveys were distributed to 15 broadcasting team teachers, 70 receiving teachers, and 956 students on the Receiving team to investigate the implementation and teaching situations. The research results and discussions are presented.

Theme 4 - The Future Campus: Blending Physical and Virtual Spaces *(Note: This session will feature five presentations.)*

Location: WLB 205

Artificial Intelligence-Based Robotic Technology in Vocational Education, A Literature Review: A Promising Strategy for Enhancing Student Performance?

Chi Keung Martin Tsui
Hong Kong Baptist University

Abstract

Artificial Intelligence-based Robotic Education (AIRE) has emerged as a transformative approach applied across various disciplines, merging the realms of Arts and Science. Central to AIRE research is the learning performance of students, which remains a primary focus (Chen, Park, & Breazeal, 2020; Raj & Seamans, 2019; Timms, 2016). Additionally, valuable aspects explored in connection with student performance include learners' attitudes, perceptions, and behaviors regarding their educational experiences. As artificial intelligence technology advances rapidly, its integration into robotics—facilitating more interactive educational tools—has been notably significant.

Traditionally, conventional robots, like LEGO models, were primarily designed to assist students in assembling tasks and programming commands. In contrast, AI-integrated robots possess advanced capabilities, enabling them to interact seamlessly with learners through voice and image recognition, as well as natural language processing. These sophisticated interactions diversify learning scenarios, allowing for personalized guidance, immediate feedback (Chan & Zary, 2019), and engaging interactions with students (Papadopoulos et al., 2020). They serve as intelligent tutoring systems, fostering an environment where learners can acquire knowledge and skills independently (Yang & Zhang, 2019), reshaping the traditional educational framework.

Numerous studies attest to the effectiveness of AI in enhancing educational outcomes in various fields, such as in the areas of engineering (García et al., 2007), mathematics (Tang et al., 2021, pp. 1–19), languages (Liu et al., 2021), online learning (Hwang et al., 2022), and nursing education (Chang et al., 2022). As AI and robotics continue to evolve within educational contexts, it becomes crucial for vocational education researchers and educators to identify trends and applications of AI-robots.

The objective of this study is to assess the effectiveness of robotic technology on enhancing the learning process for vocational school students. The methodology employed is a review and analysis by using 49 studies and taken from Google Scholar, ScienceDirect, and Proquest databases from 2014 to 2023. The effect size data analysis technique was used to find the impact on each study. The study's conclusions showed that there was no publication bias in the random effects hedging model. At a 95% confidence level, the average effect size of incorporating robotic technology into the learning process was > 0.90, findings illustrate a robust correlation between the incorporation of robotic technology into educational practices

and improved student outcomes. The use of robotic technology in vocational education not only enriches learning experiences but also develops essential skills such as computational thinking, creativity, and teamwork. These competencies are foundational as students navigate the complexities of the fourth stage of industrialization, emphasizing the urgent relevance and potential impact of AI-based robotic technologies in modern education.

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Theme 4 - The Future Campus: Blending Physical and Virtual Spaces *(Note: This session will feature five presentations.)*

Location: WLB 205

Generative Artificial Intelligence Application in Metaverse for Creative Personalized Learning in Preclinical Medical Training

Florence Mei Kuen Tang[1], Terrence Ching Ping Kwok[2], Kenneth Chung Hin Lai[1], Francis Kee[1], Wang Ngai Choi[1], Cheuk Hang Siu[1], Yat Shun Mak[1], Wang Tsun Chow[1] and Dr Ann Sin Nga Lau[1]
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Abstract

Background and Objectives:
Anatomy is crucial in medical education, particularly for developing the clinical competencies of future surgeons. Many students found studying anatomy challenging and often perceived it as tedious and primarily focused on memorization. However, technologies like the metaverse and artificial intelligence (AI) offer promising opportunities to transform medical education by creating immersive and personalized learning experiences, enhancing both theoretical knowledge and practical skills. Nonetheless, challenges such as technological disparities and data privacy must be addressed to ensure equitable access and maintain academic integrity. This study aims to investigate whether a metaverse environment, enhanced by an interactive speech-to-text AI tutor, can facilitate personalized learning and improve cognitive retention.

Methods and Results:
Our research team concentrated on the Head and Neck anatomy curriculum to develop a personalised learning environment. We trained a deep learning AI tutor using a diverse array of text data from textbooks and lecture notes, enabling it to generate tailored multiple-choice questions. The metaverse platform was designed to replicate the dissecting lab in The Chinese University of Hong Kong using Unity software, and provides an engaging 3D environment with a chatbot and test-to-speech functionality. This design fosters a sense of belonging among students, enhancing their immersive study experience.

The courseware, titled "AI Tutor: Gross Anatomy of Head and Neck (AIT)," engages students by presenting multiple-choice questions related to the subject. When a student answers incorrectly, the AI tutor provides explanations to reinforce learning, which allows students to assess their understanding and adjust their study strategies.

Data from a quantitative study using a 5-point Likert scale electronic questionnaire indicated positive perceptions, particularly regarding the statement, “I felt that I could express my knowledge thoroughly with the avatar character” with 100% of respondents strongly agreeing with the statement.

Discussion and Conclusions:
The integration of generative AI tools within the metaverse offers significant advantages for problem-solving, creative thinking, and interactive engagement. This aligns with Bloom's Digital Taxonomy, promoting active learning. Moreover, the by leveraging the unique capabilities of the metaverse, students can better understand, communicate, and advocate for ethical AI practices in education, ultimately leading to more informed and sustainability outcomes for creative learning of the AI world in the next cyber generation.

Justifications and Future Directions
Our team recognizes that training AI models can be resource-intensive, requiring considerable computational power and time, which may not be accessible to all institutions. Additionally, while speech-to-text technology enhances simulation, it may not fully replicate real-life conversational dynamics. Embracing innovative technologies requires a willingness to adapt to new methodologies. Key considerations, including ethical implications, privacy, security, and continuous professional development for educators, are vital in establishing policies for integrating generative AI into personalized learning environments in preclinical medical training. To justify the future direction of the project, it is essential to address the critical issues of equity and responsible data use, which are fundamental to the ethical implementation of AI in education.

Oral Presentations

BREAKOUT SESSION 3

Day 2 | 5 December 2024 | Time: 11:30 | WLB 1/F & 2/F

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Artificial Intelligence-Empowered Pedagogy for BIM: A Multi-Group Analysis of Learning Effectiveness and Technology Acceptance in Tertiary AEC Education

Minxin Yang[1], Zhaorong Feng[2], Hung-Lin Chi[1] and Yiwei Weng[1]
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Abstract

The digital transformation of the construction sector in Hong Kong is pressingly needed. Building Information Modeling (BIM) is a crucial platform to facilitate digital transformation in architecture, engineering, and construction (AEC) of Hong Kong. However, conventional methods to equip students with BIM knowledge are inefficient with a steep learning curve, because of inherent compatibility and complexity.

Artificial intelligence (AI) has been reshaping the education sector through its ability to implement real-time scientific guidance and adaptive teaching strategies. This work aims to develop an AI-empowered learning platform in Dynamo, an open-source BIM software plug-in. This developed AI platform can generate real-time visual and text based guidance, provide personalized educational materials, and implement adaptive learning strategies, thereby effectively empowering the efficiency of BIM education. Experimental works with 111 participants were conducted to quantify how the developed AI platform can enhance teaching effectiveness and to identify potential factors influencing learners' acceptance of the developed AI platform. The effectiveness of AI-empowered learning platform was quantified through a designed BIM test. Acceptance and perceived differences of learners were evaluated based on an extended technology acceptance model (TAM).

Results showed that the performance of beginners and intermediate learners was improved by 103.2% and 22.7%, respectively, compared to the participants without using the AI-empowered learning platform. The statistical analysis of the TAM test showed an average rating of 5.04 out of 7. The results implied a high level of acceptance of the developed AI platform. Hypothesis testing analysis was conducted and validated the positive role of output quality and enjoyment as external motivators.

The findings in this work reveal that the AI-empowered learning platform has significant effectiveness and positive acceptance in empowering BIM education, providing practical implications for AI innovation in education sector, and facilitating the design and development of teaching modules based on AI-empowered learning platform in AEC education.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Partnership with a Media Company in Developing a Course-Based Research Project for Measuring Audience Engagement

Kara Chan
Hong Kong Baptist University

Abstract

In teaching a course on audience measurement and engagement in Hong Kong, it was found that the industry did not have reliable audience analytics for the less popular out-of-home medium, such as bus advertising. Bus advertising accounted for There are on average 1.1 million passenger trips made by bus every day, making it a promising media with high media coverage. However, there is no systematic audience engagement for this medium. A study was designed with Bravo Media, a media company to discuss research data that would enlighten advertisers in designing creative advertisements and effective media placement. Research objectives were mutually agreed on. An online survey was conducted to measure advertising awareness as well as brand identification. Students taking the course collected the data through their social network based on quota sampling. In their weeks of the course, students learned how to execute a research project, from questionnaire development to data analysis using SPSS software. Students presented the research findings and media insights to the class in the presence of industry professionals from the media agency. Student assessment includes accuracy in data collection and data analysis, peer evaluation, oral presentation of the results, and media insights for advertisers. Student evaluation found that they showed appreciation for the research experience provided by this project. They learned the research ethics consideratons in conducting a survey. They felt more confident in presenting research findings. Future directions can make the experience programmatic by making it a longitudinal study where time-series data will be available. Students can also be involved in the negotiation process with the media agency on research objectives and result dissemination.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

The Impact of Gaze-Contingent Highlighting on L2 Collocation Learning from Reading

Jookyoung Jung[1], Andrea Révész[2], Matt Stainer[3], Ana Pellicer-Sánchez[2], Yoojin Chung[4] and Danni Shi[5]
[1]The Chinese University of Hong Kong,
[2]University College London,
[3]Griffith University,
[4]University of Reading,
[5]Georgetown University

Abstract

Eye-tracking technology has become a useful tool in second language acquisition (SLA) research, offering insights into learners' cognitive processes when they interact with visual stimuli on computer screens (Godfroid, 2020). Recently, eye-tracking has evolved to not only record attention but also to attract it, particularly through the gaze-contingency paradigm (Reder, 1973). This paradigm operates on the principle that learners' eye movements trigger and respond to real-time visual inputs, aligning with the cognitive-interactionist perspective on second language (L2) learning (Révész et al., 2023). This research highlights the dual roles of eye-tracking technology in both recording and triggering attention in computer-mediated language learning.

Against this background, the present study explored the educational potential of the gaze-contingent paradigm in L2 learning through computer-mediated reading. In this study, 75 Chinese ESL learners participated in tasks simulating the role of a magazine editor, evaluating three article drafts for possible inclusion in a future issue. Each draft contained twelve target collocations (e.g., cold wallet), presented under three conditions: no highlighting, proactive highlighting (pre-highlighted target collocations), and gaze-contingent highlighting (collocations highlighted upon participants' fixation). Participants' eye movements were tracked using an eye-tracker as they read the texts. Following the reading tasks, a collocation form recall test and a recognition test were administered immediately and after a two-week interval. Additionally, a stimulated recall session was conducted with five participants from each group, using recordings of their eye movements as prompts.

The results from mixed-effects modeling showed that both highlighting methods increased the total fixation durations on the target collocations, leading to significant improvements in recall and recognition scores in the posttests. Notably, gaze-contingent highlighting had a more lasting effect on collocation recall in the delayed posttest. Insights from the stimulated recall sessions revealed that gaze-contingent highlighting promoted attentive reading that closely followed the narrative. These findings underscore the potential of using gaze-contingent focus-on-form strategies to enhance incidental L2 collocation learning in computer-mediated environments.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 103

Leveraging Digital Learning Tools, Generative AI and Design Thinking for an Impact-driven Nursing Informatics Curriculum

April Joy Gascon
University of Santo Tomas

Abstract

Alarmingly, health-related safety issues, health misconceptions, and misinformation abound in third-world countries like the Philippines. To contribute to reducing such problems, training students on active learning and how to also be active citizens of the country and the world, lessons were designed so that students are able to practice informatics and initiate solutions to real-world problems. As informatics and its technologies are fast evolving across the world, it can still be considered relatively young in the Philippine nursing practice, thus, actual related learning experience for students and on-the-job exposure is little to none.

Using the design thinking approach, the teaching and learning activities for the nursing informatics course last AY 2023-2024 and the digital resources used targeted outcomes that hoped to demonstrate meaningful use of Nursing Informatics and technology in healthcare related to the management of individuals, families, and groups in the community; and, construct relevant responses, and instructional scenarios to exemplify strategies guided by trends, issues, problems and the future essentials of appropriate health information schemes and technology to communicate data, information, knowledge, and wisdom in nursing care management. Course lessons were carefully selected and threaded to ensure a systems approach to lesson design and the series of formative activities has allowed them to collaboratively advocate and propel a student nurses-led health management advocacy project that promotes individual/community health safety practices in hopes of preventing related problems that may arise.

The instructional designs used in the course not only target several areas in the spectrum of student development but also ensure that course resources are available and up-to-date; the course activities help contribute to developing the informatics and the 21st-century competencies not only of the students but of their target advocacy project recipients in hopes of later on helping the society at large. The students' course output and portfolios have returned interesting feedback, and their capstones have somehow contributed to individual and community education, and have jumpstarted safety practices from among the recipients. The mindful use of technological tools, especially generative AI, was also integrated with designing the lessons. This undertaking is a bold step to start the students early with purposeful technology exposure and adoption as they find solutions to contemporary problems assisted by digital tools and resources.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 104

Enhancing Writing Skills through Mobile-Assisted Language Learning (MALL) and Online Collaboration: A Study on Postgraduate English Students

Paul Jayakar Jayapandian
The American College

Abstract

This paper studies the impact of Mobile Assisted Language Learning (MALL) and collaborative online platforms on the writing skills of postgraduate English students. The research demonstrates significant improvement in advanced academic writing by leveraging MALL's "anytime, anywhere learning" capabilities, as outlined by Kukulska-Hulme. The study involves real-time communication, peer reviews, and collaborative exercises, analysing how these components can encounter challenges such as "White Paper Paralysis Syndrome" and "Red-ink Phobia." As an effective teaching-learning paradigm, MALL is touted to be transformative in enhancing writing proficiency by incorporating personalised learning experiences and immediate feedback to overcome the obstacles mentioned earlier. The proposed methodology aligns with Stockwell's findings, which emphasise the benefits of tailored feedback. Despite challenges, including the digital divide and the learning curve associated with MALL integration, the study supports Burston's assertion that MALL can constructively revolutionise language education. The findings suggest that combining MALL with AI chatbots and collaborative online platforms offers a promising approach to enhancing writing instruction and overall language education for postgraduate students.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 104

The Implementation of Generative AI T&L Activities for Media Writing and Media Design Course

Florin Serban
Hong Kong Baptist University

Abstract

The advent of Generative AI (Gen AI) tools in education has prompted instructors to implement these tools into their Teaching & Learning (T&L) activities. In the "Writing for Professional Communication" and "Media Design for Corporate Communication" courses I teach, I worked with students on generating AI output that follows the principles set up by our home university:

Empowering students to use AI.

Being critical when it comes to the role of AI in our society.

Using AI tools in ethical ways and building and maintaining the unicity of human beings in the process.

Therefore, students worked with Gen AI to create text and images for these two courses during the T&L activities. Although, at first, students believed the use of Gen AI would make their work much easier, they soon understood that there was much work to be done. Therefore, students were encouraged to compare the output among themselves, to look for patterns that indicate Gen AI creates the output, to refine their prompts, and to compare the results with those of their colleagues. In the media design course, students used Gen AI software like Midjourney to create visual content for their newsletters. The students described the experience as "eye-opening" as it allowed them to go beyond the classic photos they would normally find online and include them in their projects. One takeaway from this experience of integrating Gen AI into the T&L activities is that students need to work more than before to have their creativity stimulated. They expect Gen AI to provide an output without knowing how that output looks. This disadvantage can be tackled by better explaining how the Gen AI tools work and highlighting how prompt engineering will lead to particular outputs.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 104

Data with a First-Hand Story: Designing a Blended Learning Course for Cross-Cultural Economic and Financial Data Literacy Education

Ming Hang So[1] and Bintan Humeira[2]
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[2]*Syarif Hidayatullah State Islamic University of Jakarta*

Abstract

Research has shown that university students, especially those not majoring in finance or business, often demonstrate medium to low levels of financial literacy (Mändmaa, 2019). The proper use and accurate understanding of economic and financial data, a crucial component of numeracy, is considered an essential dimension of financial literacy education (OECD, 2023).For journalism and communication students, insufficient financial literacy can hinder their ability to report on economic issues effectively, potentially affecting the quality of their future work in media. Furthermore, journalism students often lack exposure to global perspectives, limiting their ability to comprehend issues beyond their local context.

This paper proposes an innovative blended learning approach to enhance students' understanding of economic and financial situations in their home countries/regions and globally. The course, co-taught by instructors from Hong Kong and Indonesia, incorporates three modes of teaching to address different learning objectives. First, students participate in synchronous opening and closing sessions held in physical classrooms at their respective universities, connected via Zoom to facilitate real-time, cross-cultural interaction. This synchronous mode fosters a sense of community, which research suggests is more effective than asynchronous engagement in building interpersonal connections. Between these sessions, students complete asynchronous online modules on the KEEP learning platform (an online course management system), which integrates video content and interactive exercises such as discussion forums. These activities aim to develop students' competencies in evaluating economic data, discerning credible sources, and understanding global economic contexts. Thirdly, students from Hong Kong and Indonesia will be paired up in groups to conduct virtual interviews about each other's economic environments. This component allows students to contextualize economic data through personal narratives.

This blended learning approach, combining physical and virtual interactions, distinguishes this course from traditional data literacy programs. Moreover, the intercultural dimension offers students a unique opportunity to engage with global economic data through firsthand storytelling. This paper argues that combining data analysis with narrative skills is crucial for journalism students to effectively cover financial and economic topics. While critical data analysis is fundamental in the era of big data, stories provide a more accessible and memorable way to communicate complex information such as numbers. The paper recommends that future data literacy education should integrate both analytical and storytelling components.

Reference:
Mändmaa, S. (2019). Financial literacy–what and why should we improve. Eurasian Journal of Social Sciences, 7(2), 12-28.

OECD. (2023). OECD/INFE 2023 International Survey of Adult Financial Literacy, OECD Business and Finance Policy Papers, No. 39, Paris: OECD Publishing.

Theme 1 - Edtech & AI in Learning and Teaching

Location: WLB 104

Digital Innovations in Future Health Professional Training: New Teaching Methods and Spaces to Enhance Learning Engagement

Provides Tsing Yin Ng, Florence Mei Kuen Tang, Evan Wu Yu Tseng and
Kenneth Chung Hin Lai
The Chinese University of Hong Kong

Abstract

Introduction:
Increasing digitalisation poses both challenges and new opportunities in our education systems and methods, especially with the rise of generative artificial intelligence (AI) and metaverse tools. The impact of these technologies and the best practices in leveraging them to enhance learning performance and experience requires careful research. This shift is particularly crucial in medical training, where comprehensive technology education must equip the future generation of health professionals with both technical skills and ethical considerations, as well as creative problem-solving and collaborative abilities. This urgency provokes us to reflect on traditional learning methods that emphasize rote memorization and standard testing, to more active and experiential learning approaches. Using Hong Kong as a case study, the goal of this research is to investigate the perceived gaps between pedagogy, engagement, and technology in current health professional education, drawing insights from both educators and students.

Method and Results:
Our qualitative research involved in-depth interviews with eight participants—three teachers and five students—from diverse health professional programs, including biomedical engineering, biomedical sciences, Chinese medicine, food and nutritional sciences, and medicine. Through thematic content analysis, we identified several key challenges within health professional education. Firstly, the large class sizes limit opportunities for hands-on and practical learning, which are essential for developing clinical skills. Secondly, the passive didactic lecture format hinders student engagement, resulting in low attendance and diminished learning outcomes. Thirdly, the lack of technology education emphasizing soft skills training facilitates students to gain the knowledge for real-world challenges in their fields. Lastly, the need for personalized learning necessitates adaptable educational approaches that cater to individual learning styles.

Discussion and Conclusion:
In response to these challenges, our team reflected on the opportunities for change. First, how a sense of belonging in the classroom may enhance engagement and wellbeing for both teachers and students. Second, ways in which active learning methods may be used to re-structure professional training through a human-centric approach. Third, the role of

technology in fostering interaction and collaboration amongst teachers and students, facilitating two-way communication and opportunities to learn from one another. Finally, how these approaches may be integrated as a set of new learning methods and spaces that may uphold the quality of health professional training through increased motivation and cultivate higher-order thinking.

Justifications and Future Directions:
In the next steps, we will experiment with the potential of metaverse and generative AI tools in helping teachers and students to collaboratively design new learning methods and spaces that can enhance engagement. According to the interview outcomes, the co-design will involve the development of four distinct prototypes within health professional programs: interactive learning center, gamified experiential learning, community outreach initiatives, and interest-based learning. The co-created prototypes will reflect the diverse needs of the educational community and can be used as a reference to guide the design of future learning spaces and programs. Also, we will implement the outcomes in the classroom to test its feasibility and effectiveness in reshaping health professional training for a more inclusive future. Lessons learnt will contribute to the development of future strategies for sustainable development in quality education.

UGC-funded Universities Sharing Session

Location: WLB 109

Exploring Engagement and Perception in Academic Integrity and Ethical Use of AI through Generative AI-powered

Jiaoyang Ding, Hong Fu and Winnie Wong
The Education University of Hong Kong

Abstract

In recent years, education has experienced profound changes driven by swift advancements in digital technologies. The expanding capabilities of generative AI enhance teaching and learning processes, and offer new insights into maintaining academic integrity. A crucial challenge arising from these developments is the ethical utilisation of AI in alignment with academic integrity principles. One innovative approach involves integrating gamification with generative AI interactions within the metaverse to provide immersive and interactive learning experiences to boost student engagement and motivation, thereby improving learning outcomes. This study aims to design and develop 3D gamified scenarios in the metaverse with AI integration, thereby exploring the student's engagement and perception of technology acceptance. The development of the metaverse utilises Spatial.io with Unity engine, and the generative AI was integrated into the environment from the self-deployed server. To foster a deeper understanding and interactive experience, the design of this environment includes principles and university's policies of academic integrity and incorporating multiple gamified interactive elements such as rewards, challenges, collections, and progress tracking into the metaverse. Generative AI acts as an avatar standing into the metaverse with customised knowledge related to academic integrity, which users can interact with this avatar for consulting and learning. In the pilot study, participants (N = 26) were assigned to use the developed scenarios in the metaverse for learning. Data collection involved two post-questionnaires using a five-point Likert scale. First, we adopted the Technology Acceptance Model (TAM) model to investigate the effectiveness of perception for generative AI-powered digital gamification. Second, the behaviour, cognitive and emotional engagement were explored by learning in this environment. Results revealed that participants reported a high level of engagement, with a mean score of 4.41 (SD = 0.49). This indicates that participants were actively involved and consistently participated in course activities. Additionally, participants held favourable perceptions of these emerging technologies, as evidenced by a mean score of 4.38 (SD = 0.58). The relatively low standard deviations (SD) suggest that responses were consistently positive across the sample. Preliminary findings suggest that generative AI-powered gamification effectively fosters both active engagement and positive perceptions among users. This study implicates innovative educational practices via generative AI-powered gamification in learning academic integrity and the responsible usage of AI. Future directions will include explorations of the relationship and the impact of generative AI and gamification between different demographics and conditions of participants.

UGC-funded Universities Sharing Session

Location: WLB 109

Embracing Extended Reality into Marine Education

Cindy Lam and Sai Kit Yeung
The Hong Kong University of Science and Technology

Abstract

The marine VR game offers immersive learning environment to transport students into realistic underwater scenarios that would be impossible or impractical to experience in real life. The game framework is on level-based, the player must complete certain objectives, such as defeating enemies or solving scenario-based challenges in order to progress to the next level. The game has 4 levels in total, starting from intertidal habitats such as mangroves and mudflats, boulder shore (Level 1) to subtidal coral reefs (Level 2) in Hong Kong and then to the deep sea (Level 3) in South China Sea. After completion of Level 3, players will step into the next level to learn similar coastal marine habitats in Malaysia (Level 4). The game offers multi-learning objectives and highlights: (i) game interactivity - students can manipulate different marine habitats and ecosystems, observe the consequences of their actions (like marine pollution or conservation efforts), and learn through active participation rather than passive observation; (ii) adaptive learning paths – our game design and setting uses adaptive learning technologies to personalize the educational experience. It can adjust the difficulty of tasks and the information presented based on the user's performance and learning speed; (iii) collaborative features – students would work together with the VR environment, fostering teamwork and communication skills; (iv) sustainability and conservation focus – the game content and scenario-based challenges are focus on marine biodiversity and conservation, sustainable practices, aligning with growing educational trends towards environmental stewardship. The built-in assessment tools in the game would provide immediate feedback to students and teachers, helping to track progress and identify areas needs further assistance and improvement.

UGC-funded Universities Sharing Session

Location: WLB 109

Exemplary Teaching and Learning Award-shortlisted Project:

Modernising Curriculum with Student-Educator Partnership

Mei Li Khong
The University of Hong Kong

Abstract

Since 2019, University of Hong Kong's Medical Faculty (HKUMed) recognised challenges arising from a growing student cohort, diverse learning habits, information overload, and disruptive innovations. To modernise our instructional methods and prepare students for future practices, we embraced student-educator partnerships in teaching and learning (T&L). This initiative fostered formal collaboration between students and educators to develop a modernised curriculum that integrates educational technology (EdTech) and active learning in a systematic, interprofessional/interdisciplinary, and fit-for-practice manner. We successfully leveraged student-educator partnerships in co-designing technology-enhanced curriculum/pedagogy, whilst partnering with community and field experts across health professional disciplines.

UGC-funded Universities Sharing Session

Location: WLB 109

Digital Law in Higher Education-Challenges and Sharing Teaching Digital Citizenship through Scenario based AR Learning Trails

Han Peng
Lingnan University

Abstract

This conference paper explores the integration of digital law into higher education curricula, addressing the opportunities of teaching digital citizenship through scenario-based Augmented Reality (AR) learning trails in law courses. The study investigates how AR technology can be leveraged to create immersive and interactive learning experiences that enhance students' understanding of digital law and responsible online behavior. By employing scenario-based learning, students are placed in realistic digital environments where they must navigate complex legal and ethical issues. The paper highlights the benefits of this innovative approach, such as increased engagement, deeper comprehension, and the development of critical thinking skills. Through case studies and empirical data, the paper provides insights into best practices for designing and executing effective AR-based digital law education. The findings suggest that scenario-based AR learning trails offer a promising avenue for equipping students with the knowledge and skills necessary in the current digital era responsibly and ethically.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 202

Classification of Learning Behavior Patterns by Dynamic Visual Analysis of MOOCs Learning Data

Dar-Yeong Ju
National Ilan University

Abstract

Since 2012, Massive Open Online Courses (MOOCs) have become integral to higher education, offering diverse applications such as credit-bearing courses and blended learning models. Corporations also utilize MOOCs for employee training and professional development, leveraging the scalability and flexibility of these platforms. Despite their widespread use, MOOCs generally exhibit low completion rates. In Taiwan, the average completion rate surpasses 10%, exceeding international averages, but improving these rates remains a significant research focus. Recent studies have emphasized analyzing student learning behaviors to enhance course design and improve learning outcomes.

Our research team has utilized data visualization tools over the past few years to analyze three distinct MOOCs, identifying correlations between various learning behaviors and outcomes. We found that certain behaviors, such as viewing lecture notes, watching videos, and participating in discussion forums, serve as indicators for categorizing student learning patterns. These indicators can be used to identify students at risk of failing the course, allowing for early intervention.

This year, we applied our previous classification method to one of the three MOOCs and observed that while some students identified as high-risk successfully completed the course, others not flagged for intervention failed to finish. This observation led us to explore further refinements in our research. Building on earlier results, first we categorized students based on prior classification methods and then employed data visualization techniques to analyze the temporal dynamics of their learning behaviors. By examining these temporal patterns, we were able to classify students into five categories: stable participants, early participants, short-term participants, late participants, and random participants.

For each category of students, we can conduct an ongoing course analysis process and apply appropriate course management strategies to improve completion rates. For example, by continuously monitoring the dynamic changes in learning indicators, we could identify early participants and provide appropriate guidance. This dynamic analysis of student learning behaviors also has implications for improving course design. By recognizing different learner types, we can introduce more personalized learning activities that cater to various student needs, ultimately enhancing the overall learning experience.

This study finds that the dynamic analysis of students' learning data over time can enhance the classification of learning patterns. Future research will continue to analyze other MOOCs to apply the dynamic analysis method developed in this study and examine the learning characteristics of different types of students to improve course design.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 202

Assessment Framework for a Tripartite Collaborative Model in Creative Education: The Hong Kong Experience

Kara Chan and Maggie Fung
Hong Kong Baptist University

Abstract

The rapid changes in our environment have rendered creativity an essential skill in both society and the workplace. Global competition necessitates constant adaptation and innovation (Barabasch, 2019). The contemporary world is characterized by vulnerability, uncertainty, complexity, and ambiguity (Seameo Voctech, 2022). There is a growing emphasis on fostering creativity in education from both policymakers and scholars (OECD, 2024). In response to this need, The CLAP-TECH pathways (CLAP-TECH) launched the Multimedia Storytelling Applied Learning course in 2022, a collaborative initiative involving the creative industry, secondary schools, and a university. The curriculum is designed around student-centered, experiential learning and career adaptability, aiming to provide early exposure and foster aspirations related to career planning. To ensure the effectiveness of this innovative tripartite model in creative education, ongoing dialogue is essential for maintaining relationships and assessing program performance.

The programme assessment framework was designed to include both quantitative and qualitative data collection in several milestones. There are at least three waves of quantitative surveys, comprising 42 items that measure learning across six key areas related to the creative industry and life and career planning, along with 12 items from the short-form Career Adapt-Abilities Scales (CAAS) for each cohort. These surveys facilitate a comparison between students enrolled in the course and a control group with comparable demographic profiles. The findings will offer insights into the initiative's implementation of a creative and vocationally oriented program within an education system that has traditionally focused on academic education until the age of 18. Additionally, qualitative interviews will be conducted four times a year with industry professionals from Creative Media, as well as with principals, teachers, mentors, lecturers, and students.

The programme assessment framework not only provides evidence for the programme's effectiveness, manifest career adaptability details from different stakeholders' point of views, it also discuss the implementation plan and finally it aims to shed light on the future of creative education.

Theme 3 - Technology-empowered Assessment and Feedback

Location: WLB 202

Embracing AI, Assessment and Virtual Assistants

Peter Duffy[1] and Robert Wells[2]
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[2]MELD Institute

Abstract

The integrity of academic awards is essential in higher education. As institutions endeavour to adjust to swift technological change, artificial intelligence (AI) offers transformative potential for the evolution of assessment procedures and feedback systems. This presentation concurrently examines a micro-level specific case study on the utilisation of AI chatbot assistants for assessing learning, with macro considerations and institutional strategies for reimagining AI applications in assessment throughout an institution.

At a micro-level, as higher education institutions adopt digital transformation, artificial intelligence (AI), especially via virtual AI assistants, provide novel opportunities for improving assessment and personalised learning. This presentation examines the incorporation of a bespoke virtual AI chatbot in an online self-paced course and the application of AI in evaluating a formative assessment task. The use of virtual AI assistants in improving assessment and personalised learning includes adaptive learning paths, instant and tailored feedback, and increased engagement. AI assistants evaluate real-time student data to customise content delivery and assessment, and the use of AI in a self-paced online course to grade and provide feedback on a formative assessment task enhances student understanding and provides immediate feedback.

At a macro-level, institutional strategies for rethinking and implementing AI in assessment tasks include ethical utilisation, professional development for academics and staff, and considerations of scalability and sustainability. Institutions must establish policies to govern the ethical use of AI, ensuring it fosters transparency and integrity while protecting student privacy and autonomy. Effective integration of AI tools necessitates the provision of professional development, governance processes, and sufficient just-in-time support to ensure that the re-evaluation of assessments across all courses is supported by robust frameworks for long-term sustainability.

This paper asserts that institutional change related to rethinking assessment in the age of AI must incorporate small-scale case studies as pilots of good practice alongside a whole-of-institution rethink on the use of AI as a holistic endeavour. Virtual AI assistants can significantly transform higher education by providing personalised and engaging learning experiences and assisting institutions in developing more reliable and equitable evaluation methods. Concurrently, institutions must establish a strategic framework for AI integration, prioritising ethical considerations, professional development, and technology sustainability to fully leverage the benefits of AI in education.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

The Effects on the Critical Skills Using Innovative AI tools – Culture and Design Courses of UIC Students

Purrie Ng
Beijing Normal University-Hong Kong Baptist University United International College

Abstract

This paper explores the effects of artificial intelligence (AI) text generators on the critical skills of UIC students. In the recent decade, AI or machine learning has been emerged quickly in education sector which enables the process and outcomes of eLearning with many impacts – benefits and weaknesses. Since such application is emerging so rapidly; however, inadequate academic studies and research have been developed of how AI affect the high order of thinking. The purpose of the research is to investigate the potential of AI integration in university courses for enhancing student learning and creativity. The problem statement is to explore how AI can be effectively incorporated into e-learning education for improving student outcomes while maintaining the core principles of critical thinking. Regarding the methodology, quantitative research of using a comparison of pre-test and post-test to probe any differences in cognitive attributes based on the course materials provided. The theoretical framework is grounded in educational theory, namely, the 6 levels of Bloom's Taxonomy. A clustered sample of around 80 to 100 participants of the same sample group of UIC students are selected to investigate the influences of applying AI acquiring high-order of thinking with paired T-tests. The pre-test group will provide some basic course concepts whereas the post-test group provides with Generative AI as assisted and supportive tools for eLearning. The target groups are UIC students are selected from the courses offered during 1st sem 2024-25. A closed-ended semi-structured questionnaires of around 28 questions are set with 7 Likert-scale. The research reveals to what extent the significant impacts of AI integration on students' thinking processes, aligning with Bloom's Taxonomy levels. Significant findings include whether AI integration aligns with the related theory by ensuring that learning activities and assessments are coherently linked to intended learning outcomes in the course. The use of AI tools supports students' progression through the cognitive domains of Bloom's Taxonomy, from basic recall to complex creation and evaluation in learning processes. For justifications, the integration of AI in e-learning education has the potential to scaffold students' cognitive development across all levels of Bloom's Taxonomy, particularly in enhancing their critical thinking and transferable skills.

In terms of recommendations and future directions, the integration of AI in university culture and design courses show promising results in enhancing students' learning experiences and cognitive development. By aligning with established educational theories and leveraging the differential order of thinking processes, AI tools play very significantly contribute for students' learning in culture and art education.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

University Instructors' Discipline Specific Professional Generative Artificial Intelligence Competence

Benjamin Moorhouse[1], Beatrice Chu[2], Kendrew Mak[3] and Tsz Ying Ho[1]
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[3]The Chinese University of Hong Kong

Abstract

The emergence of Generative AI (GenAI) has sent shock waves throughout the global education communities. Adding to the emerging field of how Generative AI has impacted the various aspects in higher education, such as university guidelines (e.g., Moorhouse et al., 2023), instructors' changing roles (e.g., Chan & Tsi, 2024), and their readiness to use AI (e.g., Kohnke et al., 2023), this study explores the subject-discipline specific professional Generative AI competence (P-GenAI-C) of university instructors in Hong Kong. P-GenAI-C encompasses instructors' understanding of how AI works and the implications of AI on students' learning, possessing the pedagogical capability to teach with AI, demonstrating critical and ethical awareness of using these tools, and ability to prepare students to use the Gen AI tools to support their learning. The corresponding information is collected from 123 instructors across different disciplines through an online mixed-method survey and from 30 instructors through a self-nominated semi-structured interview. Findings suggest that there is no significant difference of P-GenAI-C between instructors from different subject disciplines. It is found that there is a discrepancy between instructors' knowledge of how to use the GenAI tools themselves and how to leverage these tools to enhance teaching and learning. It is therefore proposed that there should be more case sharing of how different instructors utilise these tools in their classrooms. Furthermore, while instructors from all disciplines perceived a high level of impacts that Generative AI posed to their disciplines and they perceived a high necessity for students to possess AI skills for their future jobs, instructors do not strongly encourage students to use AI for learning due to concerns regarding ethical issues of AI and students' development of critical thinking skills and core content knowledge. It is therefore proposed that one of the ways to enhance instructors' P-GenAI-C is to increase their confidence and develop their strategies in counteracting the ethical concerns and students' learning concerns brought by GenAI.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

What Do Teachers Know about Digital Literacy and Digital Citizenship? A Case in Indonesia

Theresia Dwi Hastuti, Cecilia Titiek Murniati and Ridwan Sanjaya
Soegijapranata Catholic University

Abstract

Digital literacy and digital citizenship are increasingly important in education. As technological advances shape the way courses are delivered and how students engage in the classroom, teachers are required to keep up with the latest developments to incorporate technology and educate students to become responsible users of technology. This study aims to examine high school teachers' understanding of digital literacy and digital citizenship. A mixed methods approach was adopted to examine teachers' digital literacy and their knowledge of digital citizenship. The instruments used were an online questionnaire and interviews with high school teachers. The research findings show that in Indonesia, most teachers have digital literacy although they still need many trainings to make them comfortable with technology. The results of the study showed that secondary school teachers have the highest understanding of digital ethics, achieving a very deep understanding. Understanding of Digital Wellbeing and Health, Digital Literacy and Digital Law have good values also, but still below the understanding of digital usage ethics. Digital access, Digital Rights and Responsibilities and Digital Commerce have average values that are still higher than the average standard, while digital communication and Digital Security and Safety seem to be high school teachers' Those who do not know in detail, they understand its existence, but many do not understand what it is like. Based on the findings above, the implication of this study is that it is expected that the leaders of institutions that oversee high schools in Indonesia need to formulate digital literacy policies with all their ethics and impacts as well as secondary education that provides strong ethical guidelines in the use of digital technology. Other implications for High school teachers are expected to improve themselves for a better understanding of digital literacy and its impacts, and to accompany students to be able to use it more wisely.

This blended learning approach, combining physical and virtual interactions, distinguishes this course from traditional data literacy programs. Moreover, the intercultural dimension offers students a unique opportunity to engage with global economic data through firsthand storytelling. This paper argues that combining data analysis with narrative skills is crucial for journalism students to effectively cover financial and economic topics. While critical data analysis is fundamental in the era of big data, stories provide a more accessible and memorable way to communicate complex information such as numbers. The paper recommends that future data literacy education should integrate both analytical and storytelling components.

Reference:
Mändmaa, S. (2019). Financial literacy–what and why should we improve. Eurasian Journal of Social Sciences, 7(2), 12-28.

OECD. (2023). OECD/INFE 2023 International Survey of Adult Financial Literacy, OECD Business and Finance Policy Papers, No. 39, Paris: OECD Publishing.

Theme 2 - Digital Citizenship: Inclusion, Accessibility, and Ethics in Edtech

Location: WLB 204

Enhancing Digital Literacy, Language Skills, and Digital Citizenship among Low-Proficiency Learners: A Case Study from the Hobby Course

Atipat Boonmoh
King Mongkut's University of Technology Thonburi

Abstract

Fostering practical English skills, digital literacy, and digital citizenship is crucial for student success in today's interconnected world. This study examines the "Hobby Course," an innovative approach that integrates technology to enhance these competencies among low-proficiency learners. Initially developed for international students in the LNG221 course with high English proficiency, the course was offered over six semesters to this group. Recently, the School of Liberal Arts at King Mongkut's University of Technology Thonburi (KMUTT) adapted the course for first-year Industrial Education students enrolled in LNG120. These students, primarily at the A1 English proficiency level, represent the lowest proficiency group among faculties such as Engineering, Science, and Information Technology.

The course employs a hobby-based theme to intrinsically motivate students and maintain engagement with English. It focuses on practical communication over linguistic accuracy, encouraging English use in real-world contexts, such as participating in Reddit discussions about hobbies and creating tutorial videos. These activities aim to enhance writing and speaking skills while simultaneously developing digital literacy. The curriculum incorporates digital tools like Google Search, Google Translate, and ChatGPT, emphasizing ethical use, privacy awareness, and critical thinking—key aspects of digital citizenship in education.

This study evaluates the effectiveness of the adapted "Hobby Course" in improving practical language skills and digital literacy among low-proficiency learners. It also explores how digital citizenship education influences students' attitudes towards digital tools and their confidence in using English. The research involves 32 students from one section of the 17 sections of first-year Industrial Education students enrolled in LNG120. A one-time survey will assess perceived improvements in language skills, digital literacy, and comfort with digital tools. Additionally, semi-structured interviews with six students will provide qualitative insights into their experiences, particularly concerning the use of digital tools and ethical considerations.

The analysis will examine student outputs from Reddit discussions and tutorial videos to assess writing and speaking skills. This targeted analysis will reveal how students apply digital literacy and language skills in both written and multimedia formats. Preliminary findings suggest that students are adapting well to the course, showing increased confidence and achievement in using digital tools and English, highlighting the potential of digital integration in enhancing language learning for low-proficiency learners.

This research offers insights into creating effective digital learning environments and inclusive educational practices that foster ethical digital behavior. Future research will refine digital tool integration and ethical practices to better support diverse learning needs and improve educational outcomes.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 205

Technology Innovation Award-shortlisted Project:

A Collaborative Reading System with Intelligent Technology

Lishan Zhang
Xu Min, Wu Han, Duan Tengfei and Wang Hongye
Central China Normal University / Beijing Institute of Technology

Abstract

The project is about using advanced technology to improve the effectiveness of classroom instruction on collaborative reading. In specific, we designed a pedagogy mode named IRIS, which is short for individual preparation(I), group reflection(R), intra-construction(I), and summarization(S). An interactive system empowered by advanced artificial intelligence technologies is developed to support the conduction of the four phases. Before the class, students make annotations in the system. The system then generate feedback on the aggregated students' annotations by using Large Language Model technologies and human expert code books. During the class, the teacher can distribute the feedback via the system to help with group reflection. Then, the student groups can use the chat function to discuss and complete in-class collaborative tasks. By tracing the group discussion states, the system can send alerts to teachers, so that the teachers can be aware of which group is inactive during discussion. At last, the teacher makes the summarization based on the group submissions. In addition to the classroom studies, we also setup lab study with the equipment such as eye tracker to understand how students used the system.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 205

Community Outreach Award-shortlisted Project:

The Language Learning Organisation Created by Refugees, for Refugees

Xinyao Liu
AILEM

Abstract

Poor language skills act as a barrier for refugees and asylum seekers in relation to integration, economic success, and progression into further learning. AILEM is the world's first language learning and integration app that is created by refugees for refugees. A winner of the European Parliament's prestigious European Charlemagne Youth Prize, WSA Young Innovators Award, etc. What started as a project by two high school students, the last three years, empowered a world-wide network of refugee coordinators from Belgium to Malawi, gained thousands of downloads worldwide, accompanied with in-person events and projects engaged with 1000+ individuals. AILEM demonstrates the implementation of EdTech as a platform that fosters a virtuous cycle of impact on the refugee and asylum seeker community worldwide.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 205

Community Outreach Award-shortlisted Project:

Breaking Language Barriers: Enter-Link's eLearning Innovation for Community Empowerment

Janice Jun Pan
Hong Kong Baptist University

Abstract

This project showcases Enter-Link, a pioneering digital platform that combines AI-facilitated language services with human expertise to serve marginalised communities. This innovative framework operates through a three-tiered apprenticeship system, integrating students, alumni, and professionals whilst leveraging cutting-edge technology. The platform employs self-developed Large Language Models and extensive multilingual corpora, ensuring efficient yet culturally sensitive language services. Its customisable interface particularly benefits groups including rare disease patients and sign language users, providing remote access to crucial information. The project's success stems from its hybrid approach: AI-enhanced efficiency coupled with human oversight, particularly valuable for complex content. Enter-Link's systematic progression from supervised service-learning to professional practice creates a sustainable cycle of knowledge transfer. This comprehensive approach not only develops qualified practitioners but also ensures continued accessibility to quality language services for disadvantaged communities, establishing a model for inclusive community engagement through technology-enhanced learning.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 205

Exemplary Teaching and Learning Award-shortlisted Project:

Future-Ready Educators: Reimagining Graduate Teaching Assistant Training Through AI, Blended Learning, and Gamification

Ka Hei Yuen, Tsz Hei Yeung and Beatrice Chu
The Hong Kong University of Science and Technology

Abstract

Purpose:
The "Future-Ready Educators" program at the Hong Kong University of Science and Technology (HKUST) aims to revolutionize Graduate Teaching Assistant (GTA) training by blending physical and virtual learning spaces. The program addresses two key challenges: equipping future educators with the skills needed for technology-enhanced classrooms and engaging research-focused students in a mandatory, pass/fail course.

Methods:
Our approach integrates educational technologies with research-backed pedagogies:

An experiential learning cycle based on Kolb's theory, where GTAs experience, reflect on, conceptualize, and actively experiment with modern teaching methods.

The "Engage-Earn-Enjoy" gamification strategy, incorporating virtual currency (mCoins) and non-grade-related rewards based on Self-Determination Theory.
A blended learning design combining self-paced online materials, interactive in-class sessions, and post-class challenges.

AI-powered chatbots ("Mr. Watson" and "The Secretary") providing 24/7 personalized support for both content and logistical needs

A narrative-driven learning journey where GTAs engage as Sherlock Holmes, fostering deep immersion and engagement.

Results:
Preliminary findings show: A 97.6% engagement rate among participants, a remarkable achievement for a mandatory course.

Improvements in GTAs' self-reported teaching capabilities, with the ability to implement active learning strategies increasing from 5.03 to 5.63 on a 7-point scale ($p<0.001$).

Enhanced collaboration and peer learning among GTAs from diverse academic backgrounds.

Conclusions:
Training over 800 GTAs annually, this program demonstrates how blending physical and virtual spaces can transform mandatory training into an engaging learning experience, setting a new standard for technology-enhanced GTA training at HKUST and beyond.

Justification:
The program addresses the critical need for innovative GTA training methods, particularly in engaging research-focused students in a non-graded, compulsory environment. It serves as a model for how higher education can adapt to the rapidly evolving digital learning landscape.

Future Directions:
Longitudinal studies are planned to assess the long-term impact on GTA teaching effectiveness. As educational technology and pedagogy continue to evolve, the program will undergo continuous iteration based on real-time feedback and emerging trends. We plan to integrate cutting-edge technologies such as AR/VR to offer immersive simulations, providing GTAs with a risk-free environment to practice teaching techniques in various classroom scenarios.

Oral Presentations

BREAKOUT SESSION 4

Day 2 | 5 December 2024 | Time: 14:30 | WLB 1/F & 2/F

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Implementing Personalized and Active Learning Using a Chatroom Integrated with Generative AI

Fridolin Ting
The Education University of Hong Kong

Abstract

This interactive workshop explores the potential of prompt engineering for personalized and active learning with generative AI in STEM related subjects and beyond. Participants will be introduced to YoChatGPT! (www.yochatgpt.io), a novel platform designed to facilitate collaborative learning activities with generative AI. We will also discuss how one may use YoChatGPT! to facilitate self-regulated learning via EdUHK's 6P pedagogical approach for diverse disciplines.Come join us and delve into how prompt engineering can enhance student engagement, critical-thinking and problem-solving skills and self-directed learning; and how to leverage YoChatGPT!'s multi-large language model (LLM) chatrooms to design engaging learning experiences, implement active learning strategies and conduct collaborative group work with AI.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Developing Clinical Mind AI: An AI-Driven Platform for Medical Training Simulations

Chinat Yu, Marcos Rojas, Thomas Caruso and Shima Salehi
Stanford University

Abstract

Purpose:
The development of Clinical Mind AI addresses the growing need for innovative medical education tools that bridge the gap between theoretical knowledge and clinical practice. Traditional medical simulations are resource-intensive and offer limited personalization. Clinical Mind AI aims to provide scalable, dynamic, and personalized medical simulations through AI-driven synthetic patient scenarios, enhancing the clinical reasoning skills of medical students.

Methods:
The platform leverages generative AI models, including Prompt Injection and Retrieval Augmented Generation (RAG), to create interactive and evolving patient scenarios. Medical instructors upload specific case data, which the AI adapts into a dynamic system that evolves based on student decisions. This enables a lifelike simulation where patients' conditions change, requiring students to diagnose and treat in real-time. The development process focuses on providing immediate AI-generated feedback, supporting adaptive learning.

Results:
Preliminary feasibility studies conducted at Stanford University have demonstrated the platform's effectiveness in enhancing clinical reasoning. Instructors have found the AI simulations to be accurate in representing clinical scenarios, engaging students in more immersive learning experiences. Additionally, the platform offers a scalable and cost-effective alternative to traditional, static simulations, reducing logistical challenges while maintaining high medical plausibility. Initial findings suggest that Clinical Mind AI has the potential to significantly improve student engagement and learning outcomes in clinical training.

Conclusions:
Clinical Mind AI presents a transformative approach to medical education, offering a flexible and personalized learning experience. By simulating dynamic patient scenarios, the platform enhances students' ability to develop clinical reasoning skills in a low-risk environment. Its scalable nature allows for broader adoption, especially in institutions facing resource constraints in delivering traditional medical simulations.

Justifications:
The need for more interactive and flexible patient simulations is evident in the limitations of current training methods, which restrict variation in patient interactions. Clinical Mind AI addresses these gaps by creating an adaptive system that tailors learning to individual student needs, making it a crucial tool in modern medical education.

Recommendations:
Further research should focus on refining the AI models to ensure greater accuracy across a wider range of medical specialties. Additionally, efforts should be made to integrate the platform into diverse educational settings to evaluate its impact on long-term clinical reasoning development.

Future Directions:
Ongoing feasibility studies will continue to optimize Clinical Mind AI's functionality, with a focus on expanding its use across different specialties and ensuring ethical considerations regarding AI-driven patient data. The platform's potential to become a staple in medical education will be further explored through collaborations with more institutions.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Digital Literacy and Co-Creation: A Student Partnership Approach

Beatrice Chu[1], Peter Lau[2] and Sung Nok Chiu[3]
[1]The Hong Kong University of Science and Technology,
[2]The University of Hong Kong,
[3]Hong Kong Baptist University

Abstract

In the evolving digital landscape of higher education, the Students as Partners (SaP) initiative has proven effective in enhancing digital literacy among students and faculty. Recognized for its positive impacts on various aspects of higher education, including student learning and faculty development, SaP operates under a principle described as a "transformational ethos and way of working within higher education" (Judd et al., 2021). This project is a joint effort among three higher education institutions in Hong Kong: the Hong Kong University of Science and Technology, the University of Hong Kong, and the Hong Kong Baptist University.

The SaP initiative included two student partnership co-creation programs in 2023 and 2024, where students and teachers work together to reimagine the educational experience. Some teams employed technology-assisted learning methods, incorporating tools such as game-based learning, AR/VR technologies, and GenAI to improve educational delivery. This approach, informed by the perspectives of the students, has guided updates in teaching strategies and allowed students and educators to jointly develop programs that respond to the current needs of higher education.

The initiative's approach ensures that participants learn digital skills and apply them in practical educational settings, enhancing teaching and learning outcomes. This project's results have been twofold: it has broadened faculty understanding and integration of technology in teaching and enriched students' educational experiences, empowering them as active contributors to their learning journeys. Furthermore, this project aligns with global educational trends emphasizing co-creation and digital fluency as essential elements of modern higher education.

Reference:
Judd, M., Spinelli, F., Szucs, B., Crisp, N., Groening, J., Collis, C., Batorowicz, B., Willox, D., & Richards, A. (2021). Learning from the pandemic: The impacts of moving student-staff partnership online, Student Success, 12(3), 73-83.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Enhancing Digital Literacy in Higher Education: The Impact of Digital Scenarios on Tertiary Students' Learning Outcomes

Vincent Leung1, Sheng Tan[1], Theresa Kwong[2] and Jialing Xiao[1]
[1]*The Hong Kong Polytechnic University,*
[2]*Hong Kong Baptist University*

Abstract

Recent years have witnessed growing research interests in the roles of digital literacy (DL) in tertiary students' sustainable development (e.g., Imjai et al., 2024), including (1) employers' understanding of the importance of DL in tertiary students' employability (e.g., Khalid et al., 2020), (2) tertiary students' perceptions of DL practices in social media (e.g., Gu et al., 2023), and (3) undergraduate pre-service teachers' understanding of the relationship between DL competence and DL practices (e.g., Zhang et al., 2024). However, little research attention has been paid to exploring effective pedagogical approaches to improving tertiary students' DL levels. With the increasing use of digital technologies in educational practices, more research needs to be conducted to examine the effects of digital instructional design on tertiary students' DL levels. To date, one of the most widely used digital technologies in educational settings is digital scenario content (Pedro et al., 2019). Digital scenarios in educational contexts, which refer to technology-enhanced interactive and simulated learning environments (Wouters et al., 2013), have been incorporated into pedagogical practices for cultivating students' problem-solving skills and creative thinking (Hou, 2011; Pedro et al., 2019). Nevertheless, few studies have investigated the usefulness of digital scenarios in developing students' DL skills. To fill these research gaps, we conducted digital scenario workshops at a university in Hong Kong to achieve two research objectives: (1) to examine whether and how tertiary students' DL levels can be improved through digital scenarios; (2) to explore tertiary students' perceptions of the roles of digital scenarios in promoting their understanding of DL. Data were collected through pre- and post-test Likert-scale questionnaires and an open-ended questionnaire. Quantitative and qualitative findings reveal that (1) the digital scenario workshops significantly enhanced the students' levels of all indicators of DL, namely, visual literacy, technological literacy, communication literacy, computer literacy, information literacy, and media literacy; (2) the participants mentioned advantages of digital scenarios in improving DL levels, including convenience, high efficiency, and promotion of interactions; (3) after the intervention, changes can be noted in the participants' understanding of DL. This study can contribute to the literature on DL by exploring the role of an innovative e-learning method (i.e., digital scenarios) in improving tertiary students' DL levels and updating their understanding of DL.

Theme 1 - Edtech & AI in Learning and Teaching

(Note: This session will feature five presentations.)

Location: WLB 103

Diversifying Personal Finance Education with Digital and Analog Game-Based Learning

Archimedes David Guerra and Chui Yan Tang
Hong Kong Baptist University

Abstract

Game-based learning (GBL) has emerged as a novel approach in teaching and learning for its potential to significantly improve academic performance across diverse subjects and educational levels. GBL has been shown to increase student motivation and engagement by making the learning process more enjoyable and interactive. It is also effective in fostering skills such as problem-solving, critical thinking, and collaboration.

In this project, we study the benefits and synergies between two distinct forms of game-based learning: digital game-based learning (DGBL), which integrates video games into the learning process; and analog game-based learning (AGBL), which involves the use of non-digital games, such as board games, tabletop games, and other physical game formats, as teaching tools. Specifically, we explore how DGBL and AGBL may enhance the achievement of learning outcomes, and provide complementary learning benefits, in an undergraduate personal finance course. To achieve our objectives, we incorporated a commercially-available stock market simulation video game (STONKS-9800), as well as a personal finance card game that our team developed (Diversification: The Card Game), into the course curriculum. We used these games to give students opportunities to have first-hand experience in making personal finance decisions in a simulated economic environment, formulate and execute strategies for achieving financial and career goals, and take risks and observe the possible consequences of their actions.

Student feedback from initial playtesting revealed that the games are a fun and interesting way to learn about finance, even for students who don't have a finance or business background. STONKS-9800, in particular, offers a good degree of realism that reflects the impact of financial decisions in the real world. Aside from traditional economic goals such as "profit maximization" that are taught in business schools, the games allow players to pursue other goals such as happiness, comfort, social connections, and career stability. Importantly, the games give students a chance to experience financial decision-making that would have a direct impact on their personal and professional well-being, so that even if they know they are "just" playing a game, they get to reflect on how these dynamics would translate to their real lives. Overall, early in the course, students have found the games to be useful tools in learning more about personal financial management. By the end of the course, we will have collected both qualitative and quantitative data to evaluate the merits of DGBL and AGBL in teaching and learning, as well as their limitations.

Theme 3 - Technology-empowered Assessment and Feedback

(Note: This session will feature five presentations.)

Location: WLB 104

Gamified Courseware in Foundation Course for Health Sciences – The DNA Wonderland I & II

Po Yeung
The Chinese University of Hong Kong

Abstract

Project objectives:
Our team developed an interactive game-based courseware – the DNA wonderland a custom-made for medicine faculty package to focus on the biological importance of DNA in inheritance, implications of DNA mismatch in genetic diseases, the control of DNA in cellular life cycle mechanism and cancer biology. Our project objectives are that students can build up their own knowledge by game-based learning experience and demonstrate an integrative understanding on the cellular biology and knowledge transfer of concepts to individuals and community.

Methodology:
There are six games in this project and students can access the games via CUHK Blackboard. The first three games are with storyline about the basis of DNA and its replication mechanism while the last three games are with storyline about the mechanisms of cell death. Students need to select the correct options during the games which the questions are related to topics delivered in lecture. The roles of different games provide general concepts for flipped classroom (pre-lecture learning) and recall students what they have learnt after lectures (post-lecture learning).

Results:
An electronic survey is incorporated at the end of games to obtain feedback from students on the core material, web interface and ease of use. The usefulness, impact and effectiveness of the courseware in the electronic survey are evaluated. The data collected from survey provide evidence that students gave very positive feedback on the game design, appropriate contents and enjoyable experience in game-based learning.

Conclusions and future directions:
This interactive courseware can motivate active engagement of students in teaching and learning of cellular biology among interdisciplinary courses. In advance the eLearning pedagogy research is going to launch about the development and implementation of courseware for flipped classroom teaching, and the consolidation of basic pre-clinical knowledge.

Acknowledgement:
CUHK Courseware Development Grant 2022-25
CUHK School of Biomedical Sciences
CUHK Information Technology Services Centre

Theme 3 - Technology-empowered Assessment and Feedback

(Note: This session will feature five presentations.)

Location: WLB 104

A Systematic Review on the Role of Artificial Intelligence in Developing Student Feedback Literacy

Jessica To[1] and Lan Yang[2]
[1]*The University of Hong Kong,*
[2]*The Education University of Hong Kong*

Abstract

The emergence of artificial intelligence (AI) facilitates the provision of timely and personalised feedback. However, despite the growing use of AI in feedback processes, little is known about how AI supports students' development of feedback literacy. To bridge the gap, this systematic review aims to explore the role of AI in developing student feedback literacy.

We searched for literature from Scopus, ERIC and two specialised journals in AI in education published between 2016 and 2024 because our preliminary search indicated that most studies were published within this period. Upon removing 16 duplicates and assessing the relevancy of 964 papers according to five inclusion criteria (empirical AI-assisted feedback studies; AI use for feedback provision; research in higher education; peer-reviewed publication; English as the publication language) and two exclusion criteria (evaluation of AI tools; irrelevance to feedback literacy), we finally selected 45 studies.

We drew on the personalised feedback frameworks of Maier and Klotz (2022) and Wongvorachan (2022) to extract and examine the design and delivery features of AI-assisted feedback respectively. We then referred to Molloy et al.'s (2020) feedback literacy framework to code students' feedback-related behaviour and classified the codes into feedback appreciation, judgement making, affect management, and feedback enactment (the four components of Carless and Boud's (2018) feedback literacy model). We juxtaposed the feedback characteristics with the codes to see the relationship between AI-assisted feedback and feedback literacy development.

Real-time feedback provision and detailed explanation of errors and suggestions were the shared features among all the selected studies. Over half of the feedback was adapted to individuals' knowledge state and given in task cycles over time. These characteristics helped students appreciate and enact feedback because they could recognise the value of feedback and use it monitor progress and enhance subsequent task performance. The positive tone of feedback and the high manageability of AI tools aided affect management as students were more motivated to seek academic assistance from AI and enjoyed autonomy to decide the next learning step. Their judgement making ability also developed when they judged the appropriacy of AI-generated suggestions and decided the acceptance or rejection of given feedback.

For significance, this review enlightens academics on AI-assisted feedback designs to develop student feedback literacy. For example, embedding AI-assisted feedback into iterative task cycles could support students' interpretation and uptake of feedback for academic regulation. Teacher guidance on evaluating the quality of AI-generated feedback would raise their judgement making capability.

Theme 3 - Technology-empowered Assessment and Feedback

(Note: This session will feature five presentations.)

Location: WLB 104

Leveraging Generative AI for Low-Stakes Assessment: A Case Study in Quiz Question Generation and Evaluation

Christopher Fulton
University of Macau

Abstract

This case study explores the effectiveness of generative AI in creating and evaluating multiple-choice questions (MCQs) for low-stakes assessments, focusing on an online training course for teaching assistants at the University of Macau.

The study reflects on the lessons learned by educators from revising a large, mandatory online training course with over 700 new postgraduate students. The revisions involved checking participants' understanding of key points with more quiz questions and fewer written assessments, aiming to reduce the workload for facilitators of the training course and increase the satisfaction of the students required to complete it.

First, the challenge of developing effective and relevant assessment questions with AI assistance led to the creation of several specialized prompts that were more effective in generating quiz questions from scripts and selected readings. The process of generating these prompts, which were used to create appropriate and relevant questions, is documented, and recommendations are provided.

The second aspect the study considers is the evaluation of the selected quiz questions, which was primarily done using Moodle's quiz statistics report and compared with an evaluation of selected questions using an AI-driven analysis. This AI-driven analysis uses specifically designed prompts and emerging research in the area, focusing on alignment with learning objectives and levels of cognitive understanding.

Lastly, the study compares student feedback and performance between two cohorts: one assessed primarily with AI-generated MCQs and another with traditional assessment methods. The study also aims to identify if questions with images that provide context to the assessment question had any effect on students' perceptions of the questions or the training course.

The results, findings, and conclusions of the study are forthcoming.

This case study aims to investigate whether the generation of low-stakes quiz questions using AI-assisted methods might offer a scalable solution that can positively impact assessment quality and student satisfaction while reducing instructor workload.

Theme 3 - Technology-empowered Assessment and Feedback

(Note: This session will feature five presentations.)

Location: WLB 104

An Analysis of Assessment Consistency in Integrating Engineering Subjects and General Education at King Mongkut's University of Technology Thonburi (Ratchaburi)

Banyat Lekprasert
King Mongkut's University of Technology Thonburi

Abstract

A combined outcome-based education module (OBEM) for first-year computer engineering students has been developed and implemented at King Mongkut's University of Technology Thonburi (KMUTT Ratchaburi). This module was designed by building a series of related learning tasks chosen from computer engineering, engineering drawing, general education and an extracurricular activity. The score collected from each task was finally recomputed and reported by the subject in the computer engineering curriculum. As the score mainly attributed to the group activities throughout the OBE module, individual competency, focusing on coding skills, was in concern. To confirm whether this reported score reflected the course learning outcomes, the consistency of the score for this OBE module was analysed. The module was implemented for 17 engineering students in the second semester of 2023. The analysis is carried out by comparing the scores obtained from the individual and group tasks. The individual scores were observed from an extracurricular activity in which students could perform with less stress while performing in group tasks was evaluated intensively as part of the final grade in a computer engineering subject. The preliminary results show that both scores are consistent to some extent. Grading by the activities in the combined OBEM designed for the computer engineering course could reflect students' competence in coding in the engineering course.

Theme 3 - Technology-empowered Assessment and Feedback

(Note: This session will feature five presentations.)

Location: WLB 104

Enhancement of Learning Effectiveness of Cardiac Electrophysiology Using a VR Platform

Philip Hung[1] and Hang Mee Yeung[2]
[1]The University of Hong Kong,
[2]The Chinese University of Hong Kong

Abstract

Cardiac electrophysiology is an essential component of medical, nursing and biomedical curricula. The main reason for learning this knowledge is to facilitate students in these curricula to interpret pathological electrocardiogram profiles and make timely clinical diagnosis, interventions and treatments.

Electrocardiogram (ECG) is a commonly used non-invasive diagnostic tool to access the heart function in the clinical setting. Basically, ECG assesses the electrical activity travelling throughout the entire structure of the heart. Through assessing cardiac electrical activity with ECG, the healthcare professionals can evaluate the heart function and identify abnormalities such as bundle branch block or myocardial infarction, for providing appropriate interventions and treatments accordingly. Thus the electrical activity of the heart and ECG are the important teaching topics for medical, nursing and biomedical students. Yet our students found the cardiac electrical activity and ECG very complicated to understand. Therefore, a virtual reality (VR) platform was developed to facilitate active learning in an immersive learning experience.

Practical sessions were conducted for medical, nursing and biomedical students. At the beginning of the sessions, these students used this VR platform to fully understand basic principles of electrocardiogram. Then they were presented clinical scenarios in which they need to identify the abnormal ECG profiles and make plans in interventions treatments.

A pre, post-test approach was used to test the learning effectiveness of the VR platform. A list of questions was disseminated to students before the use of the VR platform. After the use of the VR platform, the same questions were disseminated to the students. The pre-post test results reflected that the knowledge level of ECG was improved by the use of the VR platform.

Learning satisfaction surveys with 6 scale Likert were conducted. And the results reflected the students across different disciplines agreed this new approach of learning can enhance their learning interests. This results also reflected that they were well compliant to this new approach.

It is believed that this holistic approach combing principles of basic electrophysiology and clinical knowledge could make our students well equipped in their clinical careers.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Technology Innovation Award-shortlisted Project:

Manuel Garcia
Benson T. Tan, Rossana T. Adao, Clievenze Karl Quejado, Clark Raven B. Maranan and Owen N. Ualat
FEU Institute of Technology

(Title and abstract will be available soon.)

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Technology Innovation Award-shortlisted Project:

The AI Avatar for Every Teacher Programme: Bringing Human Dimensions to AI in Medical Education

Christopher See, Charlotte Tien Lan Lin, Jasmine Yee Lam Louie, Bernice Ya Rui Fong and Lauren Ya Wen Fong
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Abstract

Background
Current efforts in educational AI utilise highly promising underlying technology such as Large Language Models (LLM's), but real in-class usage centres around a chatbot on an individual's mobile device. Our faculty-wide project, the AI Avatar for Every Teacher Programme, has fundamentally changed how students interact with classroom educational AI's through the use of 2-metre tall interactive touchscreens to bring a physical presence into medical school classrooms. We aimed to take students away from their individual screens and siloed learning, to gather in small groups for peer-to-peer as well as student-AI dialogue.

Methods
Our teaching innovation was designed and delivered by our web-app as a narrow AI, providing learning task guidance, feedback and hinting branched-pathway system to give the students an immersive and personal classroom experience. We employed generative AI strategically to scale our teaching, such as text-to-voice-to-animation, whilst human design underlied our learning tasks which are crafted to stimulate discussion and divergent thinking. Through these uses of generative AI, we are able to centralise the AI Avatar learning pathways within a single team, and support 20 departments or schools within a large Faculty, providing teachers with a script-to-avatar production workflow. Three clinical departments have adopted our teaching approach in this calendar year.

Evaluation of AI-enhanced classroom teaching was undertaken via a mixed-methods study using quantitative survey data as well as qualitative interviews.

Results
In the calendar year of 2024, 158 students who used the AI Avatar participated in the study, revealing statistically significant increase in both their reported self-efficacy and pre-post MCQ performance vs an online-only self-learning control group. Qualitative responses reveal a high degree of acceptability by students and also the relief of teaching pressures for extremely busy clinical staff.

Discussion

Many educational AI tools are emerging in higher education, and our study aims to examine how to best deliver a human-computer interaction that follows quality pedagogical principles and promotes discursive, small group learning. The physical presence of human-like Avatars, combined with a narrow AI deployment supported by GenAI media achieves this aim in a scalable, faculty-wide manner with positive evidence for acceptability and learning efficacy.

Conclusion

Educators aim to nurture intelligent students, not intelligent AI models. By focussing on the human-computer interface and student learning behaviours of in-classroom AI tools, we can achieve excellent learning outcomes with AI tools of varying technical complexity.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Exemplary Teaching and Learning Award-shortlisted Project:

Transforming the Learning Experience: Leveraging Metaverse and AI

Paolo Mengoni[1]
Sandy Geng Ping[2], Rebecca Liang[2], Qin Wang[2], and Gibson Lam[3]
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Abstract

Traditional methods of teaching technical STEM subjects to Arts students lack engagement and fail to promote deep cognitive understanding. Existing solutions don't foster active participation. Faced with these challenges, we asked: How can we enhance engagement and learning in technical education? Our project developed an innovative, immersive platform enhanced with Generative AI, allowing educators to customize interactive scenarios aligned with learning objectives. Grounded in inquiry-based personalized learning, game-based learning, and embodied cognition theories, this approach actively engages students, improving understanding and intent to use interactive AI-enhanced metaverse for learning. The methodology has been successfully extended to other disciplines and institutions.

eLFA Awards 2024 Good Practice Showcase

Location: WLB 109

Community Outreach Award-shortlisted Project:

Centre of Excellence in Higher Education Teaching and Learning Innovations - Higher Education Improvement Project in Cambodia (World Bank)

Cher Ping Lim
Danlin Yang, Wai Tsz Ricci Fong, Ka-wai Leung, Pui Ho Patrick Yun, Huixuan Xu, Zi Yan and Ying Zhan
The Education University of Hong Kong

Abstract

The project "Centre of Excellence in Higher Education Teaching and Learning Innovations" is a collaborative partnership to enhance the equitable quality of higher education teaching and learning in Cambodia. It aims to achieve this by improving pedagogical approaches, nurturing teachers' abilities to design and deliver effective courses, and providing valuable human and pedagogical resources. The Education University of Hong Kong has collaborated with six Cambodian universities to drive inclusive and quality higher education in Cambodia through the scaling up of professional development for university teachers, supported by the World Bank and the Ministry of Education, Youth and Sport of Cambodia. The six partner universities in Cambodia are the Royal University of Phnom Penh, the Institute of Technology of Cambodia, the National University of Battambang, the Royal University of Agriculture, Svay Rieng University, and the University of Heng Samrin Thbongkhmum.

Poster Presentations

Day 1 - 2 | 4 - 5 December 2024 | AAB 204 - 205

Data-Oriented Exploration of the Coverage of UN Sustainable Development Goals in Taught Postgraduate Curricula in Four Universities in Hong Kong

Zi Zhe Wong (The University of Hong Kong) and
Chi-Un Lei (City University of Hong Kong)

Abstract

In recent years, there has been growing recognition of the importance of instilling values, knowledge, and skills related to sustainable development into education and training programs. In particular, universities in Hong Kong have introduced different taught postgraduate programs to empower students to assist society in the promotion and adoption of sustainable practices. However, it is unclear how topics for sustainability are currently covered in these programs. Meanwhile, the United Nations proposed a Sustainable Development Goals (SDGs) framework with 17 goals for creating a sustainable future for all.

This study aims to use data mining techniques to explore how four universities in Hong Kong (City University of Hong Kong, Hong Kong Baptist University, The Chinese University of Hong Kong, and The University of Hong Kong) address sustainable development in master's degree programs by identifying the SDG labels for corresponding courses based on the SDG framework. This study examines 155 courses in 10 taught master's programs in universities focused on imparting students with knowledge, theories, and skills for achieving social and environmental sustainability.

In the first stage, a classification model has to be trained. The public OSDG community dataset has been adopted as the training data set. Multilevel logistic regression is used for the modelling with the support of the Scikit-learn Python package. In the second stage, courses are classified based on the trained model. Course descriptions for each course have been extracted respectively. Through the course descriptions, 90 words on average, the algorithm could have a brief but clear understanding of the course focus. To be specific, the highest predicted probabilities of the SDG class were assigned for each course as its SDG label.

Classifications had been done for courses. Analyzed academic programs cover a range of 3 to 9 SDGs. Among SDGs, SDG 12, in which 30 courses have been classified, is the strongest emphasis among SDG-related courses offered to students. Additionally, SDGs 4, 7, 11, 13, and 16 also exhibited significant distribution. Meanwhile, with only one or even no courses teaching about SDGs 1, 3, 5, and 10, these goals have received minimal attention in sustainability-related teaching.
In conclusion, the imbalance distribution highlights the weaknesses of universities in providing comprehensive SDG education for postgraduates. In the future, we plan to analyse 136 courses from four other universities in Hong Kong to provide a holistic understanding of how green talents in Hong Kong could be incubated through postgraduate education.

Empowering Medical Education: Production Team Intervention with VR 360° Video Integration at Taipei Medical University

Hsu-Tien Wan, Ya-Chuan Huang, I-Shan Lin, Yi Han Huang, Po Hong Shih, Yu Chen Wu and Yu-Hung Huang (Taipei Medical University)

Abstract

Virtual Reality (VR) 360° video is transforming medical education, offering immersive experiences that enhance student engagement and understanding. At Taipei Medical University (TMU), the integration of VR into the medical training curriculum is supported by a dedicated team that plays a crucial role in bringing this technology to life. This paper examines how the Production team collaborates with educators to create and implement VR content using software, integrating it seamlessly into the university's Learning Management System (LMS).

The production team's involvement begins with assisting educators in developing VR content tailored to specific learning outcomes. Using AR2VR software, the team helps storyboard, script, and produce 360° videos that simulate real-life medical scenarios. Their expertise ensures the content is both pedagogically effective and technically sound, meeting the high standards required for medical education.

Once the VR content is conceptualized, the production team dedicates significant time to the 360° video shooting and editing process using AR2VR software. This involves capturing high-quality, immersive footage that accurately simulates medical scenarios and then meticulously editing the videos to ensure they meet the educational goals. After finalizing the VR content, the team ensures its smooth integration into the LMS platform. They work to make the content easily accessible for both students and educators, while also providing guidance and training on how to effectively utilize these VR resources within their courses.

In addition to technical support, the team offers ongoing assistance, troubleshooting issues, and gathering feedback to refine the VR experiences. This collaboration between the production team and educators at TMU ensures that VR 360° video technology is not only implemented successfully but also enhances the overall quality of medical training, providing students with a more engaging and realistic learning experience.

Evaluation of an Online Course Incorporating Virtual Reality into Dementia Care Education

Chia-Nien Liu (National Open University)

Abstract

Purpose: This study aims to design, implement, and evaluate an e-learning course on dementia care for college students across 13 learning centers in Taiwan. The course implements interactive strategies and uses virtual reality (VR) technology to enhance learning satisfaction and effective learning outcomes.

Methods: A 2-credit online course on "Dementia Care" was developed based on the ADDIE (Analysis, Design, Development, Implementation, Evaluation) instructional design framework. The course content included asynchronous pre-recorded digital materials covering topics such as dementia symptoms, diagnosis and treatment, non-pharmacological interventions, principles of care and communication, etc. The course was supplemented by video lectures, weekly online tests, assignments, and a final report to assess student learning. To enhance interaction, multiple online platforms such as Slido and Kahoot were utilized for real-time feedback and engagement, as well as Line groups for continuous communication between students and teachers. A VR experience activity was implemented, where learners used VR headsets which imported from Japan to engage with three scenarios depicting the spatial disorientation, loss of orientation, and hallucinations of dementia patients. Post-experience reflective discussions were conducted to deepen learners' understanding. Course evaluations were based on student satisfaction surveys and qualitative interviews.

Results: The e-learning course on dementia care resulted in the creation of 42 micro-learning units, totaling nine hours of video content. Sixty online quiz questions and two structured discussion sessions were also developed. Analysis of the course satisfaction survey from 56 students indicated high satisfaction levels across various dimensions with an average score exceeding 4.5 out of 5: course content, instructional strategies and interactivity, media quality, teaching support, the virtual reality experience, instructor performance, and overall course satisfaction.
Qualitative feedback demonstrated that the immersive, first-person perspective VR activity gives participants the chance to gain empathy and understanding of the daily challenges of people living with dementia. The scenarios of spatial disorientation and hallucinations related to dementia were particularly noted.

Conclusions: The adoption of the ADDIE model in developing an e-learning course on dementia care proved highly effective, as evidenced by strong student satisfaction. The use of interactive platforms such as Kahoot and Slido facilitated student-instructor interaction, while the incorporation of VR activity fostering deeper empathy and experiential understanding. These findings show the combining well-structured instructional design with immersive VR technology can improve learning satisfaction and affective learning outcomes in dementia care education.

Gamification in Teaching and Learning – Raising Students' Sustainability Awareness through a Sustainable Tourism Planning Game

Chung Shing Chan, Shing Yan Wong and Yuan Xu
(The Chinese University of Hong Kong)

Abstract

Teaching in tertiary education institutions, especially in tourism geography, still largely relies on traditional methods such as lectures, tutorials, and field trips. This presentation covers two gamification and pedagogical initiatives with a collective aim to showcase two games in urban and rural contexts for incorporation into undergraduate teaching of tourism and sustainable development. During the game development process, undergraduate students have been invited to provide their insights and feedback to refine the design and rules of the game, as well as to collect examples of tourism development. Through gamifying and simulating the real-world tourism environment with elements such as missions representing cases of tourism development in a sustainable manner, characters representing different stakeholders, competition for resources, and crises and events, this game seeks to enhance students' understanding of sustainable tourism development enjoyably and interactively.

Making use of the developed tourism planning game, a parallel project aims to evaluate the game's pedagogical effect by involving 24 student participants from Hong Kong and overseas. They participated in an online game workshop, during which their understanding of, attitude, and behavioural intention towards sustainable development was assessed through pre- and post-workshop surveys and a post-workshop focus-group discussion.

Future possible directions for the two projects include distributing the game to collaborating tertiary education institutions in Hong Kong, mainland China, and beyond, as well as engaging the community by promoting and disseminating the game to members of the public. With the advancement of educational technology, as demonstrated by the gamification initiative, it is envisaged that teaching and learning activities in tertiary education institutions can become more intellectually stimulating and equip students with the skills necessary to thrive in a more challenging tourism environment. This project can potentially innovate the teaching modes for educators and students to actively blend traditional classroom teaching and virtual interactions for sustainable tourism development.

A Cloud-Based Storage Platform for Course Materials: Tagging Files to Trace Unauthorized Sharing Among Students and Third-Party Websites

Kendrew Kin Wah Mak (The Chinese University of Hong Kong)

Abstract

Advancements in information technology have rendered cloud-based platforms like Blackboard, Google Drive, and web-based office tools essential to the educational landscape, enhancing both teaching and learning through increased convenience and efficiency. Despite their benefits, these platforms are susceptible to misuse.

This project aims to develop and refine a course material storage platform equipped with the capability to automatically insert unique electronic tags into files upon download. This feature is designed to deter the unauthorized distribution of course materials on third-party websites and prevent the sharing of assignment solutions among students, thus preserving academic integrity.

We have developed and integrated four distinct tagging strategies into the prototype of our system. These strategies include the insertion of both visible and invisible encrypted tags into course documents and assignments at the point of download. The tags can appear as visibly encrypted strings, be embedded invisibly within the file metadata, be inserted as invisible characters, or be subtly integrated into the document's background. The presence of these tags enables the identification of the file's original recipient if it appears on unauthorized platforms. Each tagging format is crafted to withstand routine file operations and format conversions, ensuring their persistence and functionality.

This system represents a proactive approach to safeguarding educational content and upholding the standards of academic integrity in digital learning environments.

Digital Competence in Higher Education: Insights from Taipei Medical University's Application of the EU DigCompEdu Framework

Hsu Tien Wan, Yu Fang Hsu and Pei Li Su (Taipei Medical University)

Abstract

Digital education in Taiwan began in the early 2000s, marking the government's recognition of the impact of digital technology on education. As technology has advanced, digital education has become a key tool for improving teaching quality and efficiency. However, challenges remain, particularly for middle-aged teachers and those slow to adapt to new technologies, as their lack of digital literacy affects the effectiveness and implementation of digital education.

To enhance teachers' digital teaching capabilities, Taipei Medical University (TMU) has adopted the Digital Competence Framework for Educators (DigCompEdu) established by the EU Science Hub. This framework encompasses 6 areas and 22 competences, including digital resource application, teaching and learning execution, and assessment design and feedback. TMU used this framework for self-assessment among teachers, collecting data via Google Forms and providing feedback to teachers to improve their digital competencies.

Last year, TMU collected 380 responses out of 707 full-time teachers, yielding a 53% response rate. The results showed that TMU teachers excelled in Digital Resources (Area 2), demonstrating strong abilities in selecting, creating, and sharing digital resources. However, their performance was relatively weaker in Teaching and Learning (Area 3) and Assessment (Area 4), indicating a need for improvement in classroom management, student guidance, and the use of digital tools for evaluation and feedback.

The DigCompEdu framework offers a comprehensive set of competences, including data processing, information security, and digital content creation, helping teachers choose appropriate digital tools and methods. By enhancing digital skills, teachers can explore new teaching methods, such as flipped classrooms and blended learning, significantly increasing student engagement and learning outcomes. Additionally, digital tools facilitate global teaching, broadening students' international perspectives.

Therefore, implementing the DigCompEdu framework in higher education is crucial for improving teaching quality and student digital literacy. Future educational policies should consider incorporating this framework into assessment systems to ensure that the education system evolves with the times and cultivates talented individuals who meet modern societal needs.

Using Online Learning Journal Sharing to Improve Students' Understanding of Course Content and Learning Motivation - Taking a Computer Course As an Example

Yuh-Jen Wu (Tzu Chi University), Chun-Min Lin (Tzu Chi University) and Agnes Rijstabel (The University of Edinburgh)

Abstract

Courses related to computer skills require a lot of practice. When proceeding with class-based teaching activities, the learning progress of different students and how well they understand the course content vary significantly. To help students regulate their learning and improve comprehension in class, this study adopted the Feynman Method and requested students to maintain online learning journals. After completing practical exercises, students were asked to write notes on the operational processes, key concepts, and their learning experience, and then demonstrate the operation using their notes in public. Since the notes were accessible to everyone in class, students needed not only to understand the learning content but also to explain it in a way that both they and their peers could understand. This aligns with the principles of the Feynman Technique and allows students with faster progress to improve their notes and reflect on their learning in class as well as exercise autonomy in the process. This study used Google Docs as a note-taking tool, allowing teachers and all students to view each other's journals through a class name list and hyperlinks. The teacher selected students to explain their study notes using their own words during class each week. At the end of the semester, student reflections showed that this teaching method has the following benefits: (1) Students must learn independently, internalize and organize course content, and express it appropriately. Students were under pressure from their peers to take good notes, thus promoting learning motivation. (2) When encountering difficulties in the process, instead of asking the teacher for help, many students referred to their peers' notes to seek answers and inspiration. It assisted them to learn to solve problems on their own. (3) While explaining their notes, students had to practice retelling course content publicly, thus encouraging them to organize what they had learned, and boosting their courage and confidence in public speaking. (4) Compared with the teacher's relatively precise but abstract terminology in the teaching materials, the style and language used in the students' notes were easier for peers to comprehend. Some implications and suggestions were also discussed.

Online Courses at Tzu Chi University: A Comparison Between Credit Students and Working Professionals

Yu Wen Huang and Jun-Yang Liu (Tzu Chi University)

Abstract

Tzu Chi University annually offers at least 6 to 8 open online courses, including university preparatory courses and inter-university general education credit courses. The university preparatory courses allow high school students who are about to enter college to experience the university learning environment in advance, and they can earn credit exemptions upon completing the courses after enrollment. The general education courses are available to university students as well as students from other institutions, fostering resource sharing and cross-university learning exchanges. These credit courses are rigorously designed, requiring students to actively participate in unit discussions, submit assignments, and regularly engage in reflective feedback tasks. The completion rate for credit students reaches 76%, with participation in discussion forums also exceeding 76%.

The purpose of this study is to investigate the impact of credit recognition on learners' engagement and learning outcomes, and to compare the learning performance of credit students with that of working students. The study covers pre-university, credit-bearing and working students and analyzes learners' participation in courses through platform learning experiences and course questionnaires, including grades, course completion rates, discussion forum interactions, quiz completion rates, etc., in order to explore the differences between the two groups. Translated with DeepL.com (free version), among the 494 questionnaire responses, it was found that credit students had significantly higher levels of engagement and course completion rates compared to working professionals. The completion rate for credit students was 76%, with an average weekly learning time of 1-2 hours and a quiz completion rate exceeding 79%. In contrast, the completion rate for working professionals was only 36%, with discussion forum participation below 50%, and their learning time and quiz completion rates were also relatively lower.

The results show that credit recognition can effectively enhance learners' motivation, especially in terms of credit students' course engagement and completion rates. For working professionals, it is recommended to provide more flexible learning models and strengthen the connection between courses and career development to improve learning motivation and outcomes. Additionally, future courses should incorporate cross-cultural perspectives and sustainable development topics to further cultivate learners' global collaboration awareness and sense of social responsibility, thereby enhancing their competitiveness in the workplace and digital literacy.

Challenges, Opportunity, and Artificial Intelligence (AI) Competency for Higher Education Faculty

Sukanlaya Tantiwisawaruji, Nuttavud Koomtong, Krittika Tanprasert and Kachanon Nirunpong (King Mongkut's University of Technology Thonburi)

Abstract

In the era of digital disruption, the rapid advancements in artificial intelligence (AI) technology are becoming increasingly significant. While concerns about the implications of AI are understandable, these developments offer both opportunities and challenges. By incorporating AI into education, educators can enhance their pedagogical strategies and course design to meet the evolving demands of modern education. AI can support personalized learning, data-driven decision-making, and adaptive instructional methods.

To enhance the competency of educators in integrating AI into teaching and learning within the higher education context. This study aims to explore and identify the key competencies necessary for educators to develop and implement AI-related skills effectively. Data was collected through in-depth interviews with twelve participants with relevant experience integrating AI into their professional practice. The interview protocol encompassed questions addressing their perspectives, experiences, insights into case studies, policies, the potential availability of supporting resources, and key competencies necessary for effectively incorporating AI into higher education institutions. Each interview was conducted either face-to-face or online.

The research indicates that participants exhibited a positive attitude towards integrating AI technologies, acknowledging their advantages and practical applications within the educational context. Incorporating AI into faculty environments presents challenges and technical complexity.

Integrating AI into faculty environments faces several challenges, such as the need for AI tools to align with educational goals, the lack of AI literacy among teaching personnel, and the infrastructure of AI supporting system concerns, but also offers opportunities for enhanced teaching, data-driven insights, and administrative efficiency. Competency in AI integration can be achieved through professional development, collaboration with tech experts, lifelong learning (upskilling and reskilling), and maintaining the integrity of human-centric education. Moreover, the study identifies that Generative AI assisted educators in their professional roles rather than replace them in these functions: critical resources to enhance conventional pedagogical methods, foster innovative instructional approaches, and improve classroom management. Implementing AI tools should adhere to established ethical standards, promoting responsible use within educational settings. However, the widespread adoption of these tools remains contingent upon establishing appropriate institutional policies necessary to integrate AI technologies into teaching and learning practices fully.

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Can Technology Help: Study on the Consistency between System-Automated and Instructor Evaluations of Student Assignments

Yan Ding (Fudan University) and Nan Yang (Shanghai University of Finance and Economics)

Abstract

Effective learning evaluation is a crucial component of successful teaching practices. However, traditional human-based assessment methods often fall short in meeting students' needs due to constraints such as limited course time, heavy teacher workloads, and challenges inherent in assessment design. As educational philosophies shift towards promoting student-centered learning, there is an increasing demand for assessments that emphasize higher-order cognitive skills and comprehensive abilities. These assessment tasks are inherently more complex than traditional multiple-choice or short-answer tests and are often hindered by high time costs, slow processing speeds, and subjective interpretations when conducted manually.

Over the past few years, various technological tools and applications have been introduced to enhance teaching and learning, as well as to improve learning assessments. These technological advancements offer promising solutions to these challenges, enabling more efficient and data-driven evaluation processes. Nonetheless, the reliability and validity of technology-enhanced assessments remain underexplored.

This study aims to analyze the consistency between computerized automatic scoring systems and traditional teacher evaluations to assess the effectiveness of these technological tools in educational contexts. Specifically, it explores how such tools can assist course instructors in implementing efficient and effective learning evaluations, particularly those that are qualitative in nature.

The research focuses on a teaching design course offered to master's students in education, where 34 participants submitted lesson plans evaluated by an automated scoring system called 'Course E Design.' This system was co-developed with a software company and incorporates a set of evaluation criteria designed by the researchers, focusing on two dimensions: 'completeness of teaching elements' and 'alignment' with a total of 18 indicators. In contrast, the instructor's evaluation criteria consist of 10 indicators that overlap with the system's standards but prioritize 'alignment' and 'active learning,' aiming to reflect the true quality of the teaching design plans.

Using intraclass correlation coefficient (ICC) analysis, the study found an ICC value of 0.607 between the automated scores and teacher assessments, indicating good consistency. Specific indicator analyses revealed moderate to good consistency for learning objectives, activities, and assessments, with particularly high consistency noted in the 'alignment' dimension.

These findings suggest that automatic scoring technology can effectively address complex evaluation tasks, particularly when integrated with educators' professional knowledge and experience, thereby enhancing the comprehensiveness and reliability of educational assessments.

Effect of Blended Learning on Outcomes of Students Attending a Fundamental Chemistry Course in Higher Education

Ratana Rungsirisakun (King Mongkut's University of Technology Thonburi)

Abstract

The blended learning model, when applied to large enrollment introductory chemistry courses, has proven to be a successful method for integrating active learning. By leveraging technology and problem-based learning strategies, the approach not only improves student engagement and understanding but also enhances academic outcomes. The positive feedback from students and the improvement in GPA underscore the model's potential as a viable alternative to traditional lecture-based teaching, making it a valuable tool for large-scale STEM education. Active learning approaches result in improved student learning outcomes compared to traditional passive lecturing; there is a growing need to change the way instructors teach large introductory science courses. Blended classroom modules for large enrollment fundamental chemistry course sequences have been created. Herein is described how student response systems and problem-based case studies have been used to increase student engagement, and how blended classroom modules have integrated these case studies as collaborative group problem-solving activities in 70-100-seat lecture halls. Preliminary evaluation efforts found the blended classroom modules provided convenient access to learning materials that increased the use of active learning in lectures and resulted in a significant improvement in the course grade point average (GPA) compared to a non-flipped class. These results suggest this approach to implementing a blended classroom can act as a model for integrating active learning into large enrollment introductory chemistry courses that yield successful outcomes. A blended classroom is a pedagogical approach that moves course content from the classroom to homework and uses class time for engaging activities and instructor-guided problem-solving. The course content in a first-year level fundamental chemistry course was assigned as homework using MS Teams platforms. In class, students' misconceptions were addressed, the concepts from the video lectures were applied to problems, and students were challenged to think beyond the given examples. Students showed increased comprehension of the material and appeared to improve their performance on summative assessments (exams). Students reported feeling more comfortable with the subject of chemistry, and became noticeably passionate about the subject. In addition to being an effective tool for teaching fundamental chemistry at a small college, blending the chemistry classroom may help students take more ownership of their learning.

Enhancing Assessment through AI: Developing an Adaptive Platform for Efficient Grading

Otis Y. M. Lam (The Chinese University of Hong Kong)

Abstract

In the rapidly evolving landscape of higher education, traditional assessment methods face challenges of bias, inconsistency, and time constraints. This poster presents an innovative project at The Chinese University of Hong Kong (CUHK) that aims to integrate generative Artificial Intelligence (AI) into the assessment process, addressing these challenges while aligning with the global trend towards enhanced efficiency and personalised learning experiences.

The project's primary objective is to develop an adaptive AI-assisted assessment platform that empowers educators to manage large-scale assessments with improved accuracy, consistency, and objectivity. This user-friendly system is designed to support a wide range of assessment types, from short-answer questions to complex essays, enabling even those with limited technical skills to harness AI as a supportive tool in grading.

The development, which commenced in September 2024, follows a two-phase approach. The initial phase focuses on creating an intuitive interface and workflow, selecting an advanced AI model (such as GPT-4), and integrating robust rubric interpretation capabilities. The second phase will involve comprehensive testing across diverse academic settings. By the time of the poster presentation in December, we anticipate having completed the core system architecture and begun initial testing with select faculty members.

While full implementation is still underway, its potential impact is significant. By streamlining the grading process, the system aims to dramatically reduce educator workload, enabling more timely and constructive feedback between educators and students. It also promises to enhance the quality of assessments by minimizing human bias and identifying common learning gaps across student cohorts, facilitating data-driven improvements in teaching strategies.

This project represents a pivotal step towards the future of assessment in higher education. It not only addresses current challenges but also paves the way for more adaptive learning experiences. As we move forward, the focus will be on refining AI integration, expanding functionality to support increasingly complex assessments, and exploring applications in formative evaluation.

By bridging the gap between technological innovation and pedagogical needs, this AI-assisted assessment platform has the potential to transform educational practices at CUHK and beyond, contributing to more efficient assessment and a responsive learning environment in the digital age.

Learning Preferences and Student Engagement in Blended Learning at a College of Architectural Technology

Li Jianxin (Sichuan College of Architectural Technology) and Dave Marcial (Silliman University)

Abstract

Student engagement, which refers to the time and effort learners dedicate to educational activities and their positive behaviors is a key factor in the success of blended learning environments. Blended learning combines traditional face-to-face instruction with online, web-based learning, integrating these two modes to offer personalized, flexible learning experiences that align with educational goals. This study investigates the relationship between students' learning preferences and their levels of engagement in a blended learning setting at the College of Architectural Technology. Specifically, it examines how various learning preferences impact student engagement and whether a significant correlation exists between them.

The study was conducted at Sichuan College of Architectural Technology in Deyang City, China, involving 262 students from the Department of Engineering Management. Data were collected through an online survey, focusing on behavioral, cognitive, attitudinal, and social engagement and learning preferences such as motivation, attitude, and self-efficacy.

The results indicate that students generally agree with engaging in the blended learning environment. Respondents expressed confidence in enhancing their professional skills through blended learning and perceived it as a valuable tool for academic success. They also showed a willingness to use digital devices like computers and smartphones to support their learning.

Furthermore, the study found a significant positive correlation between learning preferences and student engagement. Factors such as learning motivation, attitude, and self-confidence strongly influenced how much time and effort students invested in their blended learning experiences. Students with positive attitudes and higher self-confidence were more inclined to participate actively, try new learning strategies, and derive satisfaction from completing tasks. A positive attitudinal state also enhanced students' enthusiasm and commitment to learning.

In conclusion, learning preferences are critical in shaping student engagement in blended learning environments. Understanding and addressing students' learning needs can improve their motivation, engagement, and overall learning outcomes. The study recommends incorporating a comprehensive blended learning guide into the institution's professional development plans to better align instructional strategies with student preferences. Future research could explore interventions tailored to different learning styles and preferences to enhance engagement in blended learning settings further.

A Pilot Project for Advancing the Teaching Competency of Early-Career University Academic Personnel through Micro-Credentials

Nuttavud Koomtong, Krittika Tanprasert, Ploypachara Negkumpituk and Sukanlaya Tantiwisawaruji (Learning Institute, King Mongkut's University of Technology Thonburi)

Abstract

The early career faculty development program for faculty members who have 0-2 years of teaching experience aims to develop Competency based on the KMUTT Professional Standard Framework for Teaching and Learning (PSF). The program was designed based on the 70-20-10 Model, which allocates 70% for on-the-job training, 20% for learning from peers and mentors who observed the teaching of early career members, and 10% for formal training. The program was concluded with a debrief session of mentor observation based on knowledge, activity, and values specified in PSF. Based on this program, approximately 10% of early career faculty members that mentors did not observe at least one component in PSF. The early career faculty members also expressed the need for personalized learning according to the competencies that they are still lacking.

The early career faculty development program was redesigned to cope with the challenges above by incorporating the concept of micro-credentials (MC). MCs are widely used in professional development to assess specific competence achievements. It provides standalone value and offers self-determined learning. (Sargent, Rienties, Perryman, & FitzGerald, 2023; T Msweli, Twinomurinzi, & Ismail 2022).The development part of the program remained the same. The evaluation part, which used to be the mentor debrief session, was changed to submitting the evidence through two micro-credentials designed to cover competencies specified in PSF within 1 year after the program started.

The program was piloted in the academic year 2023 cohort with 13 participants.Evidence submitted to MC was reviewed to see if the criteria were satisfied. If not, feedback was given for improvement, and the evidence was resubmitted for further review. During the pilot phase, the evidence was reviewed by the Center for Effective Learning and Teaching (CELT) staff.

Data for the project was collected through semi-structured interviews involving eleven members who submitted evidence and seven members who actively participated in the pilot program. Everyone mentioned that MC helped them recognize their strength and areas for improvement, which contributed to further enhancing their competence. CELT teams think that MC helps us pinpoint the competencies that program participants have yet to master. This allows us to help clarify the misconception, provide more help at the right point, and use the information to improve our development program.

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Exploring Engagement and Perception in Academic Integrity and Ethical Use of AI through Generative AI-powered Gamified Metaverse

Jiaoyang Ding, Hong Fu and Winnie Wong
(The Education University of Hong Kong)

Abstract

In recent years, education has experienced profound changes driven by swift advancements in digital technologies. The expanding capabilities of generative AI enhance teaching and learning processes, and offer new insights into maintaining academic integrity. A crucial challenge arising from these developments is the ethical utilisation of AI in alignment with academic integrity principles. One innovative approach involves integrating gamification with generative AI interactions within the metaverse to provide immersive and interactive learning experiences to boost student engagement and motivation, thereby improving learning outcomes. This study aims to design and develop 3D gamified scenarios in the metaverse with AI integration, thereby exploring the student's engagement and perception of technology acceptance. The development of the metaverse utilises Spatial.io with Unity engine, and the generative AI was integrated into the environment from the self-deployed server. To foster a deeper understanding and interactive experience, the design of this environment includes principles and the university's policies of academic integrity and incorporating multiple gamified interactive elements such as rewards, challenges, collections, and progress tracking into the metaverse. Generative AI acts as an avatar standing into the metaverse with customised knowledge related to academic integrity, which users can interact with this avatar for consulting and learning. In the pilot study, participants (N = 26) were assigned to use the developed scenarios in the metaverse for learning. Data collection involved two post-questionnaires using a five-point Likert scale. First, we adopted the Technology Acceptance Model (TAM) model to investigate the effectiveness of perception for generative AI-powered digital gamification. Second, the behaviour, cognitive and emotional engagement were explored by learning in this environment. Results revealed that participants reported a high level of engagement, with a mean score of 4.41 (SD = 0.49). This indicates that participants were actively involved and consistently participated in course activities. Additionally, participants held favourable perceptions of these emerging technologies, as evidenced by a mean score of 4.38 (SD = 0.58). The relatively low standard deviations (SD) suggest that responses were consistently positive across the sample. Preliminary findings suggest that generative AI-powered gamification effectively fosters both active engagement and positive perceptions among users. This study implicates innovative educational practices via generative AI-powered gamification in learning academic integrity and the responsible usage of AI. Future directions will include explorations of the relationship and the impact of generative AI and gamification between different demographics and conditions of participants.

A Study on the Impact of Integrating Business Simulation Games with Generative AI Tools on Learners' Learning Performance

Ya-Cing Jhan (National Taipei University of Business)

Abstract

Business simulation games are widely used in various management courses within business schools. Previous research on business games indicates that the complexity of these simulations often plays a crucial role in influencing learning performance and attitudes. However, most business simulation games are inherently complex, presenting challenges for learners. This study seeks to leverage generative AI tools, specifically ChatGPT, to guide students in overcoming challenges within business simulations and assess whether ChatGPT can provide valuable learning recommendations and direction in complex business environments.

The objective of this research is to examine whether integrating ChatGPT into business simulation games enhances students' learning motivation, performance, and problem-solving abilities. The simulation platform used in this study is Top-Boss's Macro Business Simulation (MBS), which is designed as a BI decision-making platform that incorporates essential business functions, including corporate strategy, production, logistics, marketing, human resources, finance, and R&D. Due to the comprehensive nature of MBS, students must have prior knowledge of these business domains to effectively engage in the game.

The study will employ an eight-week experimental teaching design, involving 30 undergraduate students. In the second week, students will complete a pre-test questionnaire covering business knowledge, learning motivation, and problem-solving skills. Starting from the fourth week, students' game rankings will be used as one of the indicators of learning outcomes. In the fifth week, ChatGPT will be introduced into the learning process, where students will be taught how to use the tool to address business decision-making challenges within the simulation, thereby improving their performance in the virtual business environment.

At the end of the eighth week, post-tests on learning motivation, problem-solving abilities, and learning outcomes will be conducted, with game rankings again serving as an indicator of learning effectiveness. The findings suggest that incorporating GPT into digital game-based learning can significantly enhance students' motivation, problem-solving skills, and overall learning outcomes.

The study reveals that ChatGPT facilitates real-time feedback, allowing students to instantly address misunderstandings or challenges. It also enables personalized learning, offering tailored support based on individual needs and decision-making processes within the game. Additionally, ChatGPT serves as an accessible resource for problem-solving, helping students break down complex business scenarios into manageable tasks, which boosts their confidence in navigating the simulation. By promoting self-directed learning and providing timely guidance, ChatGPT enhances student engagement and fosters the development of critical thinking and analytical skills, which are essential for success in both simulated and real-world business environments.

Transdisciplinary Engagement in Undergraduate Biology Courses

Patrick Y.K. Yue (Hong Kong Baptist University)

Abstract

A transdisciplinary approach to teaching and learning has become more common in undergraduate programs. It harmoniously integrates different disciplines to construct new knowledge and create a solution that has an impact on society. This new educational practice could uplift the students to a higher degree of cognitive abilities, sustained knowledge and skills, and a competitive edge. Recently, this new practice has been applied to the same batch of Biology major undergraduates while they were taking "Poetic Microscope Project" under the BIOL2017 Cell Biology course and "Micro Capture, Macro Insights Project" under the BIOL4015 Fermentation and Enzyme Technology course in their year 2 and year 4 study, respectively. These transdisciplinary projects were co-organized with the Academy of Visual Arts (AVA), Cultural Literacy Programme (LIVE), HKBU, and professionals from the Hong Kong movie industry and aimed to integrate science, art, and culture using the transdisciplinary approach. Students could experience biology from a new perspective and interpret "Life" and "Science" from an innovative angle.

To foster students' transdisciplinary engagement in the "Poetic Microscope," an innovative platform was provided for the students where they were able to create stunning artistic images of different types of cells and tissue, bringing a fresh and fascinating perspective to the field of biology. Looking at the images of various biological cells and tissues, including cancer xenograft, SARS-CoV-2 virus-infected human epithelial tissues, and state-of-the-art organoid models, etc., students had the opportunity to explore the intricate beauty of biological systems and turn them into an artwork with self-reflection for the exhibition titled Poetic Microscope - Discovering beauty in an invisible world.

The "Micro Capture, Macro Insights" platform offered a transformative experience where students were able to uncover beauty, goodness, and truth within themselves and the world. Engage in hands-on micro photography experience on in-house prepared biological samples – moulds and appreciation that challenge our perceptions and reveal the hidden truths of our reality. Students learned to apply these insights to their everyday lives, gaining a fresh appreciation for the extraordinary in the ordinary. In addition, students were invited to coordinate the exhibition with other students from AVA and Social Science so as to display the artistic images and messages in a way that the theme of the exhibition - "Caring" could be highlighted.

These transdisciplinary practices significantly improved the quality of teaching and learning in undergraduate courses. In addition, it uplifted the artistic and creative atmosphere on the HKBU campus by offering an exciting array of experiential learning opportunities in science, arts, and culture for students to enjoy, explore, and express themselves in new and inspiring ways.

Acknowledgement: Cultural Literacy Programme (LIVE), HKBU

Investigating the Use of Assistive Technology for Students with Low Attention Span

Dimple R. Thadani (Hong Kong Baptist University)

Abstract

Amid ongoing curriculum reform efforts, the traditional three-hour lecture format has faced significant criticism for its ineffectiveness in maintaining student engagement. In response, many educators have sought to enhance classroom interaction by incorporating more dynamic learning activities. However, they still observe that student attention typically declines after just 10 to 15 minutes. This paper investigates the use of assistive technology (AT) as a means to increase students' attention span in lectures. Drawing from the music therapy techniques designed for adults diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), a 2 x 2 factorial pilot experiment was conducted. Over six sessions, students were randomly assigned to receive a five-page slide presentation with or without background music and lyrics, while a control group served as a baseline. The results indicated that students' attention, as measured by recall rates, improved when background music was played without lyrics. The finding suggests that integrating background music into presentations can enhance student focus and information retention. The paper discusses both the theoretical and practical implications of the results, highlighting how assistive technology can be effectively utilized to transform traditional teaching methods and foster a more engaging learning environment. Ultimately, this research contributes to the ongoing dialogue surrounding curriculum reform and the need for innovative strategies to enhance student learning outcomes.

Enhancing Follow-Up Learning Experience: Leveraging Topic Guidance Enquiry Framework and NLP for Tailored Student Engagement of Chemistry in Science and General Education Courses

Chui-Man Lo and Kim-Fung Yip (The Chinese University of Hong Kong)

Abstract

For the Faculty-based Science courses and General Education courses at the university level, the students have a large variety of backgrounds. Not all students have a fundamental knowledge of Chemistry. Many students think that Chemistry is very difficult and request further teaching materials and exercises for their own practice. Besides, after specific topics have been taught in every lesson, some active students come out in queue to ask questions after class. However, some passive students may be shy to ask although they have questions. Many students may prefer to use online tools for self-revision rather than ask for others' help.

This project aims to develop a pedagogical assistive platform that utilizes the Topic Guidance Enquiry Framework as a backend engine to generate a Guided Natural Language Processing (NLP) model. The Web APP will empower university-level teaching staff to effortlessly generate tailor-made prompts using the backend framework engine. It will also include shared URLs of NLP models, such as POE or ChatGPT, that those prompts will be deployed to complement students' post-lesson learning journey. It can enhance student engagement and improve learning outcomes.

Teaching staff will be able to send students the URLs of the guided NLP models after teaching specific topics of the course. This will enable students to receive personalized questions in a structured sequence. The model will assess their background knowledge, prompt them to explain detailed concepts, encourage them to provide step-by-step processes and ask them to list examples from their own experiences related to the subject matter to gain insights based on their individual strengths, weaknesses, and areas of interest. After that, the model will assign a knowledge level score based on students' responses and provide extra suggestions and resources accordingly. These resources will be available in various formats, including links to related websites, downloadable PDF readings and publicly accessible videos.

This model was used in two selected Science and General Education courses in Semester 1 of 2024-25. The target students did not have a chemistry background, and we hope this model can help them for self-revision.

A Compendium of Introductions and Reading Guides to the Revised Course Books for In Dialogue with Humanity and In Dialogue with Nature

Wai Ming Ho (The Chinese University of Hong Kong)

Abstract

To enhance the General Education Foundation (GEF) Programme, the teaching teams of "In Dialogue with Humanity" and "In Dialogue with Nature" have recently revised the list of classical texts for the two courses. We are writing a compendium of introductions and reading guides for the set of classics, which will form the core of the GEF curriculum from the academic year 2023-2024. Introductions provide brief accounts of the thinkers, esp. the conceptual or theoretical problems they sought to address. They also contain brief accounts of the classical texts, the position of each one in the intellectual context of its author and the scholastic tradition to which this classic belongs. Last but not least, introductions also include brief accounts of the possible relevance of the texts to our times and our lives. Reading guides focus more on the texts. Each reading guide includes a short analysis of the style and unique features of the text in question. In addition, an in-depth analysis of several selected passages will be provided to guide students on how to read, analyze and appreciate the text. Apart from introductions and reading guides, short notes to Chinese/English translations of the classics and selected lists of external learning resources will be given to facilitate students' self-learning. Both Chinese and English versions will be provided.

An Online Bilingual Glossary in Support of Language Alignment in General Education Foundation Classes

Kam Moon Pang (The Chinese University of Hong Kong)

Abstract

The courses, In Dialogue with Nature and In Dialogue with Humanity, comprise the General Education Foundation Programme at The Chinese University of Hong Kong. The dialogue courses feature seminar-based and reading-intensive, requiring students' verbal and written presentations. Starting in 2022 – 2023, students must match the language of their written assignments with classroom instruction. This new policy introduces three main challenges. First, students in Chinese-medium classes (80% of students) need to expand their Chinese vocabulary for key intellectual concepts. Second, they must translate English texts into Chinese accurately to capture the subtle meanings of key terms. Third, the wide range of topics involved requires mastering a broad lexicon. To support this, online bilingual glossaries have been built, aiming to (a) provide a convenient tool to search for the translation equivalents of key terms encountered in the core texts, (b) provide easily accessible information on the contexts of use of the key terms by the author, with reference to etymology and word formation; and (c) engage students in the enrichment of the glossary and the development of this eLearning platform.

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