

Day 2 Breakout Session III (1.35pm - 2.15pm)**Venue:** SR 6.05**[141] How Might Digital Scenario Content Elevate University Students' Digital Literacy in Hong Kong?****Author/s:** Kin Keung Vincent Leung, Theresa Kwong and Jialing Xiao

Abstract: This investigation builds upon the existing body of research that promotes academic integrity and ethics through augmented reality learning trails. It delves into the role of digital scenario content in enhancing digital literacy among university students in Hong Kong. As the reliance on technology in educational contexts continues to increase, this research topic retains its relevance and timeliness. Four key research questions form the backbone of this enquiry, primarily focusing on how well-designed digital scenario content impacts digital literacy. Additional areas of investigation include the mediating and moderating roles of digital technology acceptance, digital self-concept, and prior experience with digital technologies. This study aims to illuminate methods of effectively integrating digital scenario content into university curricula, gauge its impact on students' digital literacy skills, and understand the specific needs and challenges associated with digital literacy that Hong Kong students face. This research employs a mixed-methods approach, combining quantitative survey data with data mining techniques. Emphasis is placed on how digital scenario content significantly influences how students interact with digital technologies. Several hypotheses are proposed, suggesting that the level of digital technology acceptance, digital self-concept, and prior experience with digital technologies among students play critical roles in the effectiveness of digital scenario content in enhancing digital literacy. These assertions draw on contemporary pedagogical studies and established theoretical models. An enhanced construct, "Digital Technology Acceptance", is proposed in this research, which builds upon the foundations of established Digital Acceptance Models. The role of digital self-concept is explored as a potential moderator in the relationship between digital scenario content and digital technology acceptance. A comprehensive definition of digital literacy, encompassing six core elements, is also presented. Findings from this investigation offer valuable insights into the potential of digital scenario content in enhancing digital literacy among university students in Hong Kong. They underscore the importance of digital technology acceptance and the role of digital self-concept in this context, providing a comprehensive approach to understanding this complex issue.

[165] Hybrid Flexible Learning: Is it a new mode class delivery for the future or a transient hype arising from the pandemic?**Author/s:** Chye Seng Lee

Abstract: The hybrid flexible, or HyFlex, learning is a form of class delivery that combines face-to-face (F2F) and online learning. The delivery can be offered in-person, synchronously online, and asynchronously online, and students can opt how to participate in their learning.

The Singapore University of Social Sciences (SUSS) embarked upon their journey into HyFlex Learning amid the Covid-19 pandemic in Nov 2021 when the University formed a project committee specially to understand the use of HyFlex not just as part of emergency response but rather to ascertain new classroom design in alignment to pedagogical considerations for viable deployment for the current infrastructure and also the University's new future campus slated to be ready in Year 2030.

The key evaluation criteria include seamless integration of class delivery for students attending in-person and those connected from remotely, ease of use of this new technology for both lecturers and students, facilitation of high level of student interaction and engagement, and then support for Covid-19's safe distancing measures.

With the intent to conduct a meaningful and user-focused technology evaluation of HyFlex Learning, the project committee conducted online survey for students and faculty to find out more about their take and requirements about online learning, student interaction, classroom design, group activities, etc. In a sample size of 1,319 responses, students indicated that they welcome online learning via Zoom. They are happy with their Zoom experience and do not encounter much technical difficulty. In the faculty survey (154 responses), they shared their take of classroom design (e.g., the need for multiple display screens) and how they currently engage their students in face-to-face class and online lessons (e.g., group discussion, poll, games, ask questions, etc).

The requirements from student and faculty surveys were collated and the following teaching facilities were conjured as preliminary classroom design: 1. Dual front projector screens. 2. Room layout for 30 on-site and 30 (or more) remote students. 3. 7 or more visual display units (e.g. LED TV) • 2 units at the central rear (PPT and far-end video) – teaching mode • 5 display units - group discussion mode 4. Ease of conducting group activities for both on-site and online students. 5. High audio-video quality with minimal delay for remote students. 6. Front tracking student camera to capture Q&A and provide wide angle view of classmates. 7. Rear tracking camera to track and capture a closed-up view of lecturer. 8. Hanging ceiling microphones to pick up students' audio when they ask questions from where they are seated.

Two pilot SUSS HyFlex Learning Classrooms went live in Jul 2023. Each classroom can accommodate up to 30 students attending class in-person and 30 or more learning from remotely.

The Unique Selling Points (USP) of these HyFlex Classrooms are the student interaction and engagement functions such as Group Discussion and Screen Sharing with on-site and remote learners in the same groups, and Acoustic Baffle to enhance audio clarity for remote learners, and Smart Video Gallery for automatic closed-up view of learners while they are speaking. These USPs set the new HyFlex classrooms apart from traditional smart distance learning classrooms.

There is a total of 11 SUSS courses aboard HyFlex teaching and these are mostly the postgraduate courses from the School of Business and School of Humanities and Behavioural Sciences.

School of Business 1. ANL501: Data Visualisation and Story Telling 2. ANL505: Hyper Automation 3. ANL553: Applied Statistical Methods and Casual Analysis 4. BUS603: Applied Research in Business and Management 5. BUS613: Strategic Leadership and Management 6. ECO631: Business Economics and Public Policy 7. BUS601: Contemporary Topics in Business and Management

School of Humanities and Behavioural Sciences 1. TSL508: TESOL (Teaching English to Speakers of Other Languages) Method 2. PSY371: Performance Psychology 3. PSY373: Psychology of Nonverbal Behaviours

College of Interdisciplinary and Experiential Learning 1. NIE351: Interdisciplinary Global Learning

In this presentation, SUSS will walk through their journey from gathering user requirements to pilot deployment of two SUSS HyFlex Learning Classrooms. Details on their evaluation criteria, survey results, and feedback from end users about Classroom Design will be shared. This experience sharing will serve as a good reference with useful takeaways and learning points for institutions looking into similar deployment of HyFlex Learning Classrooms.

Day 2 Breakout Session III (1.35pm - 2.15pm)**Venue:** SR 6.06**[138] Mapúa University: Pioneering Personalized Learning Through Digital Education with the Implementation of McGraw Hill's ALEKS Adaptive Learning Software****Author/s:** Ericson Dimaunahan

Abstract: Mapúa University, a leading engineering and technology institution in the Philippines, has been at the forefront of digital education, offering different modalities that cater to the diverse needs of its students. Today, the university provides face-to-face and online classes, including synchronous online and asynchronous learning.

Pre-pandemic, Mapúa University implemented Digital Days and Digital Rush, which allowed synchronous online lectures to be delivered to approximately 2,300 students across 100 classes. Digital Rush courses were also offered, which provided undergraduate students with online courses scheduled during the non-peak traffic hours of 7:00AM to 9:00AM and 7:00PM to 9:00PM.

These initiatives made Mapúa University the first university in the Philippines to conduct simultaneous online classes at scale, reinforcing its position as the market leader in the field of education. The university's proactive approach to digitalization has allowed it to become one of the most pandemic-ready universities in the country. Faculty members were already familiar with digital learning platforms and tools, while students had a considerable degree of familiarity with the same. The ecosystem had more than the basic requirements for effective and efficient delivery of digital education, making the seamless transition to online learning modalities during the pandemic possible.

These experiences have given Mapúa University the confidence to offer an entire program of study in a fully online mode, known as the Ubiquitous Online Experience (ÚOx) programs, as well as to implement hybrid and flexible teaching and learning modalities based on students' choice, known as Mapúa Triple Experience (Tri-X).

To further enhance the learning experiences of its students across various courses, Mapúa University has chosen to use McGraw Hill's ALEKS (Assessment and LEarning in Knowledge Spaces) adaptive learning software and Connect digital platform. Integrated with Mapúa's Learning Management System, the platform has been used to help educators in math and chemistry to focus on the topics that students understand and those that require further assistance, empowering teachers to deliver the most effective instruction possible. ALEKS is built on cognitive science's theory of "knowledge spaces" and uses artificial intelligence to create personalized and dynamic learning paths for students based on their individual needs. Bridging the learning gap and addressing the different knowledge base of students, ALEKS is used to deliver course outcomes for Engineering, Chemistry, Mathematics, Psychology, Accounting, and other course areas at Mapúa University.

[140] Choose Your Own Adventure: A Pilot Data-Enabled Flipped Classroom Study Exploring Learners' Autonomy, Self-Efficacy And Inquisitiveness**Author/s:** Zhengping Liow, Keith Yong Tze Tan and Wen Yi Ng

Abstract: Flipped classrooms (FCR) are popular pedagogical strategies in higher education and their success is contingent on the effective use of class time. The 'one-size-fits-all' approach to FCRs' activity potentially led to disengagement among students, as identical activities may not adequately

accommodate learners' varying comprehension levels from asynchronous lectures. Therefore, educators can capitalise on students' learning insights from the lecture's knowledge checks and reflections to tailor FCR activities. The experimental 'Data-enabled Flipped Learning' (DEFL) model leverages these data/insights to design differentiated instructional (DI) FCR activities. These activities, anchored by Learner Autonomy (LA), let students choose activities that interest them, potentially heightening their curiosity. Seventy-two first-year architecture students participated in a One-Group Pretest-Posttest pilot trial between two DEFL models. DEFL Type 1 utilises knowledge check quizzes to classify students into stronger and weaker groups. Using the 'Think-Pair-Share' approach, stronger students partner with weaker ones to work on standard worksheets together. These objective exercises are facilitated through hierarchical one-on-one teacher-student interactions and feedback. DEFL Type 2 analyses students' lecture reflections to identify recurring themes and surface as learning gaps to design appropriate DI activities. Students can choose between two tracks: deepening their knowledge through library research or exploring the campus to observe and document construction details. The learning process and environment were differentiated according to learners' affinity and readiness with the topic. A questionnaire focusing on self-efficacy and inquisitiveness was administered after both DEFL activities. The Paired T-test revealed that students' perception of their self-efficacy improved modestly ($p = 0.084$) from DEFL Type 1 ($M=4.076$) to DEFL Type 2 ($M=4.159$), while students' inquisitiveness increased significantly ($p = 0.05$) from DEFL Type 1 ($M = 4.173$) to DEFL Type 2 ($M = 4.263$). DEFL Type 2's collaborative setting may have boosted learning confidence, echoing Anwar's (2016) findings on group discussions' positive effects. Promoting LA nurtures students' inherent interests and curiosity, which is crucial for cultivating self-directed learners (Reio, 2004; Siddiqui et al., 2022), thus addressing the shortcomings of the one-size-fits-all FCR approach. Teaching style affects student engagement and curiosity (Inayat & Ali, 2020). Differentiated activities that align with diverse teaching methods and learning attributes can feasibly boost these traits. This study contributes to a growing body of FCR research whereby students' learning data potentially enhance their learning attributes. Furthermore, Li et al. (2019) reported strong links between self-efficacy and curiosity, paving trajectories for future investigations in DEFL DI & LA pedagogies.

Day 2 Breakout Session III (1.35pm - 2.15pm)**Venue:** SR 6.07**[109] Lesson learnt from an university system approach of faculty professional development on e-learning teaching skills****Author/s:** Hsu-Tien Wan, Shu-Ping Chang and Yu-Fang Hsu

Abstract: Professional development is important for faculty because it has been shown to improve teaching and learning outcomes for universities. Teaching training programs are necessary because they help faculty stay up-to-date with modern pedagogy strategies and techniques that help them better connect with, manage, and teach their students in a manner that ensures all students are learning and benefiting. During the pandemic, e-learning needs had grown more than ever. Thus, implementing an effective e-teaching training program gains more attention among universities. According to studies, perceived technology skills for instructional and application software use directly and positively affected faculty beliefs on usefulness. In Taipei Medical University, we held an e-teaching training program for faculty with some perceived educational technology competence. The purpose of this program is to cultivate advanced e-teaching leaders. The topics include: 1)Introduction to e-learning, 2)Introduction to e-learning course certification, 3)synchronous and asynchronous learning software, 4)course content design, 5)open education resource and software, a total of 50 training hours. The program structure includes lectures, team collaboration workshops, self-instructional video production, e-learning course design projects, and a final demo day. It is delivered in Hyflex format which is partly in-person, partly synchronous online, and partly asynchronous online. The prerequisite of an attendee is to be able to record a video. Advanced training is hardly successful for a single university, but by working with aliened universities, we could consolidate resources and manpower together. We have selected 2 candidates from each aliened university. There were 15 faculty from 5 universities who finished the program. After the program, they got better levels on the digital teaching competence framework. Other results include that aliened universities provide these leading faculty more resources to build basic e-teaching training programs for their own universities. Moreover, by the support of university administration, they could teach more e-learning courses or acquire national certification on those courses. Finally, professional consultation is necessary to develop a successful training program.

[136] Developing and Testing Instruments of the Technology-Enhanced Language Assessment Literacy of Pre-Service English Teachers**Author/s:** Liubov Darzhinova

Abstract: Language assessment literacy (LAL) plays a pivotal role in ensuring the effectiveness and fairness of language assessment practices (Tsagari & Vogt, 2017). The present study developed and tested the validity and reliability of the three instruments used in the technology-enhanced assessment of LAL of pre-service English teachers. First, the questionnaire for pre-service English teachers was developed based on adapting items from two internationally recognized, validated, and reliable instruments. The developed questionnaire can identify pre-service English teachers' relevant learning needs, self-perceived confidence levels about language assessment, and attitudes toward using technology when conducting language assessment. Second, the technology-enhanced LAL instrument was developed. The instrument's modules cover critical topics of LAL of pre-service English teachers, focusing on reading. Each module corresponds with one or several items of the developed questionnaire. The module content relies on academic textbooks and research articles in English Language Education (ELE). Third, the reflective statement task was developed to measure

the learning outcomes of pre-service English teachers after using the technology-enhanced LAL instrument. Eight invited ELE experts tested the content validity of the developed instruments. They were provided with the information sheet about each instrument and were asked to rate each item from one 'completely dissatisfied' to four 'completely satisfied' following the provided criteria. The returned ratings were analyzed utilizing the Content Validity Index (Polit et al., 2007). The internal consistency reliability of the questionnaire and the reflective statement task were analyzed through a pilot study that recruited 30 pre-service English teachers. The Cronbach's alpha values were greater than 0.70, indicating acceptable internal consistency reliability. As a result, the study finds evidence of the reliability and validity of the developed instruments in measuring pre-service English teachers' LAL. The instruments of the study can be potentially applied in the English teacher training curriculum for efficient evaluation of language assessment literacy of this target group. Additionally, the study provides valuable insights into how these instruments can be utilized during block practice and similar course types aimed at undergraduate students of various majors.

References Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health*, 30(4), 459–467. Tsagari, D., & Vogt, K. (2017). Assessment literacy of foreign language teachers around Europe: Research, challenges and future prospects. *Papers in Language Testing and Assessment*, 6(1), 41–63.

Day 2 Breakout Session III (1.35pm - 2.15pm)**Venue:** SR 6.08**[122] Impact of a Pilot Joint-institutional Project on Promoting Blended Learning for Hong Kong's Primary & Secondary Schools****Author/s:** Kendall Yy Yan, Lisa Law, Grace Ms Ng, Andy Sw Chan, Lok Ming Lau and Theresa Kwong

Abstract: To echo the mission of delivery the best student experience in a leading liberal arts University in Hong Kong. This study aims to showcase the achievements of a 3-year joint-institutional project of piloting flipped learning in a number about 100 of Hong Kong's secondary schools with the involvement of about 180 teachers and more than 1,500 students benefitted. Flipped learning (as a form of blended learning) was once considered an alternative method in secondary education. The COVID-19 pandemic has made many changes in the education sector. Online learning with the flipped classroom approach together with the use of educational technologies are now becoming essential in the teaching and learning environment to engage students with different learning abilities. To extend this success and moving it further to the self-directed learning perspective, the project team has been working closely with hundreds of frontline teachers, panel heads, and principals and launched a step-up 3-year long project to implement blended learning in both primary and secondary school education. Data collected from the self-directed learning video platform (i.e. Fabulearn) are analysed to illustrate the most engaging presentation style of a teaching video, and hence to provide further recommendations to teachers for evaluating the impact of their blended pedagogies and collecting their good practices. The results of this pilot study supported three out of six success factors of adopting the Complex Adaptive Blended Learning System (CABLS) as suggested by Wang et al (2015) to facilitate students' self-directed learning. The experience gained from this project allows the project team to identify the advances or hinders the implementation of blended learning in Hong Kong. The presentation will also cover the ways forward of further promoting blended learning in a large-scale movement i.e. the coverage of senior primary school students and junior secondary school, throughout the various methods, including certificate courses, training, sharing workshop, and video production contest.

[157] Co-Creating with Students in General Education Subjects through Immersive Peer Learning**Author/s:** Kai Pan Mark, Rodney Wai-Chi Chu and Charles W. H. Woo

Abstract: This paper chronicles the challenges faced by teachers delivering introductory level General Education subjects in undergraduate education, and the attempts to address the challenges through adoption of a student-staff co-creation strategy with extensive utilization of immersive technology. These courses aim to provide students with interdisciplinary learning experiences and are often mandatory in educational institutions. However, significant differences in students' prior knowledge can make it difficult to engage all participants in learning activities, leading to a lack of motivation and minimal effort from some students to fulfill the mandatory graduation requirements. Our work focuses on the redesign of the General Education subject "From Gloom to Bloom", offered to undergraduate students in a university in Hong Kong to explore the concept of Global New Urbanism. Traditionally, this subject was taught through lectures and written assignments. However, it faced issues of student disengagement and the impact of Generative AI on traditional writing approaches. To address these challenges and enhance student engagement, the subject was revamped by integrating immersive technology, specifically Virtual Reality (VR) technology and 360-degree videos co-created by the students. The Hybrid Immersive Virtual

Environment (HiVE), a 6-sided VR CAVE system, allows students to experience virtual field trips and interact with the subject matter in a more engaging and immersive manner. The HiVE was also used to support students in creating their own 360-degree videos, capturing their experiences and perspectives. These videos were then shared in a HiVE presentation, fostering collaborative discussions among peers and promoting knowledge co-creation. This redesign aimed to enhance student engagement, encourage collaborative learning, and harness the potential of Generative AI. The sustainability of this pedagogy is ensured through the Student-Staff Partnership approach. This involves recruiting committed students who have successfully completed the course to serve as student assistants in subsequent runs. These assistants help coach current students in video creation and editing skills and provide input for dynamic course content review every semester. Results from the Student Feedback Questionnaire indicate that students were highly engaged in the course and believed that the assessment tasks helped them achieve the intended learning outcomes.

Day 2 Breakout Session III (1.35pm - 2.15pm)**Venue:** SR 6.09**[97] Using Data-Enabled Flipped Learning to Support Differentiated Instruction in a Digital Electronic Engineering Module****Author/s:** Siew Kee Chong and Mark Wan

Abstract: Singapore Polytechnic (SP) is moving towards a digital learning culture where lecturers use data on student performance to customise teaching and learning strategies. This paper presents an evaluation of a pilot study on Data-enabled Flipped Learning (DEFL), an approach that harnesses data in a flipped learning format to support differentiated instruction. The pilot was implemented in a Digital Electronic Engineering Module involving 36 classes, 20 lecturers and 648 students in academic year 2022/23 Semester 2. The aim was the systematic utilization of the Learning Management System (LMS), especially the learning analytics features, to extract, collate, and present key learning data on online assessment to allow for the lecturer to prepare for focused feedback and differentiated instructional activities in the face-to-face sessions.

The methodology employed a mixed-methods approach, incorporating quantitative and qualitative instruments to gather data from both teaching faculty and students. The study aimed to understand the students' perceptions of DEFL and how it contributed to their learning. Additionally, the study explored how teaching faculty experienced the initiative in terms of their professional role, including their ability to identify student-specific learning gaps, provide effective feedback, and design differentiated instruction.

The findings provided valuable insights into how both students and teaching faculty experienced this initiative, identifying the most useful (and less useful) aspect of the instructional approach employed. Overall, the data suggested that students responded positively to the various components of the initiative such as embracing challenging goals, being given clear expectations for learning, appreciating the variety in the learning activities, and the timely and helpful feedback provided by the lecturers. The faculty's response on the potential benefits of implementing DEFL can be described as largely positive as faculty appreciate the ability to customise learning for their students and helping students to understand key concepts more deeply by targeted feedback.

In conclusion, this study has demonstrated that learning analytics can enhance the effectiveness and efficiency of providing timely focused feedback and the instructional remediation needed for meeting a wider range of student learning needs. Of equal importance, it is not just the technology provision that is important, but a pedagogy that is evidence-based, utilizing methods that are known to enhance learning.

[153] Exploring the Use and Perceptions of Generative Artificial Intelligence Among Tertiary Education Learners: Benefits, Challenges, and Ethical Considerations**Author/s:** Hui Ting Evelyn Gay and Gabriel Gervais**Abstract:** Introduction & Purpose

Since the term was first coined in 1956, 'artificial intelligence' held the promise of transforming human activities. Today, the applications of generative artificial intelligence (GAI) have garnered considerable interest, with the field of education as one of the domains that witnessed the most significant transformations. While the institutions' varying approaches to dealing with GAI have received extensive attention, this paper aims to shed light on the students' perspectives about the

technology by examining their perceptions of the benefits, pitfalls, risks, and ethical implications of utilising GAI tools designed to generate text that mimics human writing.

Methodology

Selected by convenience sampling, the 153 study participants are students enrolled in part or full-time degree programmes from various disciplines at a Singapore university. They anonymously accessed a 129-item Qualtrics online survey presenting a mix of Likert-scale, multiple-choice, yes/no as well as open-ended questions about their familiarity, perception and ethical considerations in the use of GAI.

Results

The survey results show that among the respondents who have used GAI tools previously, 75% of them use them only occasionally or rarely in their studies, possibly due to the tool's novelty. Ahead of Microsoft Bing and Google Bard, ChatGPT is the preferred GAI tool, known by 99% of respondents, used by 92%, and liked by 90%. 40% of respondents struggle to get satisfying answers from GAI, often requiring multiple prompt attempts. The top five uses of GAI include brainstorming, writing assistance, virtual tutoring, creative inspiration, and idea evaluation. Despite varying degree of concerns about the accuracy, reliability and objectivity of GAI answers, 47% of the respondents find that its benefits outweigh its drawbacks. Ethically, only 15% are comfortable presenting AI-generated answers as their own in summative assignments without acknowledgment. Additionally, nearly 60% would not trust a medical doctor who admitted to using GAI to pass exams, while only a third would withhold trust in programmers making the same confession.

Conclusion & Recommendations

The findings show that students use GAI for various tasks but face challenges, highlighting the need for better training. While recognizing its benefits, students also acknowledge the pitfalls and ethical concerns of its use. As our study found that frequency of GAI use correlates with the students' desire for its formal integration into the curriculum and assessment, institutions should consider their views to make informed decisions and implement effective policies regarding GAI's use in education.