

**Poster Presentation****Venue: PAT****[93] Designing Flipped Learning in a fundamental Thermodynamics module: Impact on Student Learning and Engagement****Author/s:** Junying Xiong (Ngee Ann Polytechnic)

**Abstract:** COVID-19 had driven rapid shift to home-based online learning and transformed education worldwide. Post COVID-19, Ngee Ann Polytechnic has adopted Flipped Learning to tap on the strengths of both online asynchronous learning (OAL) and in-person learning (IPL). OAL aims to nurture active and independent learners while the IPL facilitates deepening of learning from OAL.

In the Thermodynamics module within the Diploma in Chemical & Biomolecular Engineering (CBE) course, the OAL is designed to facilitate self-paced learning of lecture content in BrightSpace (a learning management system). The IPL tutorials are designed to deepen learning, foster applications and promote collaborations. This study reviews the effectiveness of the current Flipped Learning designs and gather feedback to strengthen them.

**Methodology**

**Participants.** This study consisted of 26 first-year CBE students taking the fundamental module in Thermodynamics.

**Procedures.** The self-paced OAL components incorporated bite-sized and multi-media enhanced learning resources and self-assessment mini-quizzes. The IPL tutorials were conducted in Smart Classrooms, equipped with collaborative screens to facilitate peer learning and enhance learner engagement.

This study reviewed BrightSpace learning analytics, academic performance and student feedback survey data to examine the effectiveness of the current Flipped Learning designs.

**Results & Discussion** The BrightSpace learning analytics indicated more than 70% of the students accessed OAL prior to the IPL and most of the remaining would catch up after tutorial. Their mini-quizzes results varied across students and OAL topics. These informed the learning gaps to address during IPL and identified students who might need additional explanation. While the mini-quizzes results helped to identify the academically weaker students, they were not sensitive enough to differentiate the performance of the other learners.

The student survey results suggested that OAL materials provided them the flexibility to access learning materials and complete learning at their own pace; familiarised them with the key foundational concepts, procedures, and skills; and enhanced their learning through interactive self-assessments with feedback. The students found the IPL activities enabled them to clarify and understand, as well as apply and relate to the content learnt in OAL. This suggested good alignment from OAL to IPL. Despite these initial favourable feedbacks, there is room to further strengthen the strategies to challenge and deepen learning, facilitate collaborative learning and peer feedback.

This presentation will also share my reflections on this learning journey, including challenges faced, insights into the synergistic OAL-IPL integration and their collective impact on learners' educational experiences.

**[98] Project Chrysalis: Reflections on Blended Learning in Practice in Hong Kong**

**Author/s:** Man Long Chan (The Chinese University of Hong Kong)

**Abstract:** This poster presentation provides a Hong Kong perspective on blended learning. “Blended learning” has been defined as a combination of “face-to-face instruction with computer mediated instruction” (Graham, 2006, p. 41, as cited in Cronje, 2020, p. 114). A key emphasis for this poster presentation is that in blended learning, learning takes place in both synchronous and asynchronous modes. This raises a question: how can a project be designed to maximize learning in these two modes?

The poster presentation reflects on Project Chrysalis: Community Initiatives Training, a funded co-curricular project in a university in Hong Kong that adopted the blended learning approach to provide students with the necessary linguistic foundation to start student-led community service-learning projects. To complete the project, students had to, in this order, (a) attend Workshop 1 on generating pitch ideas, (b) complete seven web modules that guide them through how to create a pitch, (c) attend Workshop 2 to rehearse their pitch, and (d) create a 3-5 min video pitch as final submission.

On the basis of surveys and questionnaires with nine students who completed the project, two important factors that impact student learning are identified. First, activity design catering to the specific learning mode can lead to effective learning. The synchronous workshops were designed for more interaction between the instructor and the students, so students felt that learning was more personalized, increasing learning motivation. In contrast, the asynchronous web modules enabled students to learn at their own pace and without feeling burdened by the workload of the project. This design increased their learning satisfaction.

Second, careful arrangement of activities in a project can promote effective learning. By conducting Workshop 1 synchronously before students studied the web modules asynchronously, the arrangement enabled proper contextualization of the content and managed learner expectation. Also, by conducting Workshop 2 synchronously only after students had completed the web modules, the arrangement allowed students to apply what they learned from the web modules in the form of a script and receive specific feedback from the instructor, which enhanced learning.

This experience suggests that the success of a blended learning program may require careful consideration in not only the design of the learning activities, which should exploit the benefits of its learning mode but also the sequencing of those activities, which should be strategically planned so that the learning outcomes can be carefully scaffolded.

**Reference**

Cronje, J.C. (2020). Towards a new definition of blended learning. *The Electronic Journal of e-Learning*, 18(2), 114-121. <https://doi.org/10.34190/EJEL.20.18.2.001>

**[99] A Ten-Year Review of Taipei Medical University's MOOCs and International Curriculum Promotion**

**Author/s:** I-Shan Lin (Office of Information Technology, Center for Multi-Metaverse Media), Ya-Chuan Huang (Office of Information Technology, Director of Center for Multi-Metaverse Media), Hsu-Tien Wan (Associate Dean, Office of Information Technology, Center for Multi-Metaverse Media), Yi Han Huang (Office of Information Technology, Center for Multi-Metaverse Media) and Chienyi Lin (Office of Information Technology, Center for Multi-Metaverse Media)

**Abstract:** Taipei Medical University (TMU) has been at the forefront of innovation in education, embracing Massive Open Online Courses (MOOCs) as a means to disseminate knowledge and promote international collaboration. Over the past ten years, TMU has provided high-quality medical education through MOOCs, including 120 MOOCs in fields such as clinical pharmacy, nutrition science, artificial intelligence, and translational medicine. Among these offerings, 36 courses are fully conducted in English, attracting over 320,000 participants from around the globe. This remarkable feat positions TMU as a pioneer in delivering the highest number of English-taught courses in Taiwan.

TMU embarked on its MOOC journey around a decade ago, recognizing the potential of online learning to extend its expertise in medicine and healthcare to a global audience. The university collaborated with international MOOCs platforms to develop comprehensive and accessible courses. As the platform gained popularity, TMU expanded its course offerings to include specialized or multidisciplinary medical-related fields like pharmacy, public health, and biomedical research.

TMU's commitment to promoting international curricula through MOOCs has successfully bridged geographical barriers, allowing learners worldwide to access TMU's esteemed faculty and world-class educational content. Learners from diverse backgrounds could now participate in courses that were traditionally accessible only to on-campus students in Taipei. Faculty members from various international universities contributed to course content, thereby enriching the learning experience with a diverse range of perspectives and expertise. When traditional teaching methods were severely impacted during the pandemic, TMU's well-established online learning resource provided a lifeline for medical students and professionals seeking to continue their education and stay updated on the latest advancements in healthcare.

TMU faced challenges during the ten-year journey of its MOOCs. Ensuring the continuous engagement of learners, developing interactive and immersive learning experiences, and addressing the digital divide were the opportunities that required ongoing attention in the future. As the world continues to embrace digital education, TMU's commitment to innovation and adaptability positions it well for an even more impactful future in the realm of online medical education.

### **[112] Effectiveness Study of Information Technology Integration into Mastery Learning of Account Title**

**Author/s:** Meng Yu Cheng (Department of Finance, Da-Yeh University) and Hou-Yi Ting (Bachelor Program for Multimedia Digital Content, Da-Yeh University)

**Abstract:** Familiarity with account titles is a critical factor determining the success or failure of accounting education. Enhancing familiarity with account titles is thus the primary concern. Therefore, the research aims to employ information technology to assist learners in acquiring the ability to apply account titles proficiently. In line with this research objective, an instructional strategy integrating information technology was implemented using digital tools (Line@ platform) to facilitate in-depth memory of account titles. Within the Line@ platform, accounting subject definitions were established, enabling automated responses to learners' queries about account titles.

The research focused on freshmen students. Excluding incomplete data, 21 participants averaged 27.14 interactions, indicating adept use of information technology tools for learning. Tests conducted in the previous semester yielded limited improvement within a week. However, upon testing again in the first week of the subsequent semester, a significant enhancement in learning effectiveness was observed. This underscores the positive impact of integrating information technology into accounting education. To further ascertain learners' proficiency, students were

asked to recall and correctly categorize account titles at the beginning of the next semester. Results revealed a notable improvement in correctly categorizing subjects after a two-week interval, thanks to digital technology.

The findings demonstrate that digital technology facilitates continuous and sustained entry of information into the brain, bypassing shallow memory loops and enhancing retention through the hippocampal memory loop. This research provides valuable insights for enhancing accounting education, emphasizing the necessity of establishing deep-seated memories of account titles before investigating strategies to improve learning effectiveness.

### **[113] What Do Students See that We Don't?**

**Author/s:** Mei Ching Amy Tsang (Hong Kong Baptist University, College of International Education)

**Abstract:** Only about one-third of Hong Kong local secondary school graduates who take the Hong Kong Diploma of Secondary Education Examination (HKDSE) are admitted to the eight reputable universities funded by University Grants Committee (UGC) (HKEAA, 2020; UGC, 2020). The remaining two-third, whose desire for university education is influenced by the traditional values and social expectation, are likely to enroll in a sub-degree programme, or to retake the HKDSE. Although there are various options for sub-degree graduates, a local qualitative study found that they consider themselves to be 'losers' (Wong, 2019); thus, they study hard as this is a second chance for them to get into the undergraduate study (Ching et al., 2021). However, their learning needs and experiences in sub-degree institutions have not been well-studied, especially in the Asian context. One of the purposes of this study is to fill this research gap. Students taking sub-degree programme usually perceive the sub-degree study to be a stepping stone to undergraduate education (Wong & Wong, 2021). They strive for outstanding academic results to facilitate their articulation to the senior year of a university to finish a major specific bachelor's degree. This session will explore the unique challenges encountered by this group of students in a digital era on academic study, social connection, and psychological wellbeing. The preliminary results from 625 completed responses imply that students' responses are varied towards their learning needs and experience of a two-year college study life. And the minority feedback has its significance. I will illustrate the answers through the data and comments collected from the questionnaires. Based on those data to summarize the insights or implications on how students can identify their needs for better preparation for university transfer. The preliminary results will also provide with recommendations on the enhancement of institutional support for students' better learning experience, well-being, and preparedness for articulation. In addition, it will be able to discover their major study interest and develop their competitiveness for their future career adaptability in a two-year community college setting.

### **[118] Empowering Education in the Digital Age: Harnessing the Potential of Digital Platforms for Personalized Learning**

**Author/s:** Rajendran K Sethuraj (SUSS Associate Lecturer)

**Abstract:** In an era profoundly shaped by digital advancement, the significance of digitizing education has reached unprecedented levels. Within a world transformed by digital innovation, the realm of education has undergone a similar evolution. Integrating digital technology into the processes of teaching and learning has become a critical factor in preparing students for their eventual immersion into digitally-driven workplaces. The value of employing digital platforms in education is now more pronounced than ever, especially considering the diverse learning paces exhibited by students. It is imperative for educators to adeptly utilize these technological tools to

craft lessons that accommodate individual learning styles, capacities, and aptitudes. Among the array of educational platforms available, one that I have delved into within my instructional approach is Deck Toys. Within the Deck Toys Classroom, real-time progress and data tracking take place. This environment employs built-in gamified elements to engross students, incorporating diverse media such as videos and slides. Lessons are flexibly structured, offering distinct pathways that cater to varying student competencies, all the while mitigating any sense of disadvantage. The integration of collaborative tasks cultivates vital digital-era teamwork skills.

Evidence has surfaced showcasing notable advancements in student performance as a direct outcome of their engagement with this platform. The allure of self-paced learning inherent to this tool has drawn students in. Moreover, the autonomy to self-assess completed assignments through answer schemes, the option to review instructional videos elucidating perplexing concepts, and the opportunity for task resubmission have collectively empowered students to seize command over their personal educational journey and growth.

**[124] A Proposal for Authentic Learning Content Management and Assessment Strategies Based on Artifacts on Collaborative Canvases**

**Author/s:** Tosh Yamamoto-Presenter (Kansai University of International Studies (KUINS)), Yasuhiro Hayashi-Presenter (Musashino University) and Zhihua Zhang (Kansai University of International Studies (KUINS))

**Abstract:** This paper deals with follow-up research based on Yamamoto et al. (2019): "ICT-Enhanced Virtual Learning Environment to Foster Global AGILE Learning for PBL," which was a paper presented at eLFA 2019. As a typical virtual classroom situation where students from universities in various countries learn together, a course from the liberal arts area, Social Entrepreneurship, was planned and conducted. The students from the University Students at NYP in Singapore, Hsuan Chuang University in Taiwan, and Kansai University, KUINS in Japan participated in learning social entrepreneurship in the agile approach. The virtual and collaborative learning space was created with cloud-based learning services: Padlet(r) and Google Drive(r), among others. Such a learning environment ensured the "On the same page learning in a team, 24/7" throughout the semester across the border of the campus. In addition, all individual and team-level records were archived and stored on the cloud. Our next challenge was conducting analytics to decipher the primary concepts of authentic learning and assessing authenticity from authentic learning activities from the archived learning data. Based on the constructive approach to learning, the original API (Application Programming Interface) was developed to extract crucial data closely related to the authenticity of learning. This paper concludes that concrete strategic methods to obtain significant learning data are a promising approach to authentic learning and assessment, which will be, in turn, beneficial to generate learning content for future generations.

**[137] How to repurpose online video recording into Blended learning and mixed mode teaching effectively?**

**Author/s:** Amy Chong (Miss)

**Abstract:** In the past year, the worldwide education community has faced the challenge of digital learning and teaching. We have learned to adapt and be flexible during this uncertain period as the traditional face-to-face classroom mode has evolved into online or mixed-mode formats to accommodate the changing world. To cope with this new way of life, we have actively learned different technologies.

During this time, faculty and teaching staff have delivered online teaching via Zoom to students, resulting in the production of several high-quality lecture recordings. However, can these recordings be effectively reused in the future beyond acting as backups or remedial solutions? With appropriate design and refinements, these knowledge assets have the potential to be repurposed for blended learning and mixed-mode teaching.

This paper explores the effective reuse of existing lecture recordings using AI technologies such as speech-to-text and voice cloning. Repurposing lecture recordings through these technologies offers an approach to minimize repetitive messages or concepts, enhancing the educational experience and optimizing the use of recorded lectures.

In the context of blended learning and mixed-mode teaching, repurposing lecture recordings can save time and effort for both instructors and students. By utilizing speech-to-text AI technology, the recorded lectures can be automatically transcribed into written text. This transcription serves as a valuable resource, enabling instructors to review, refine, and edit the script content directly to minimize repetitive messages or concepts until a perfect version is achieved. AI can assist in correcting errors by allowing simple editing of the subtitles, eliminating the need for re-recording. Additionally, voice cloning technology can be employed to generate audio that matches the instructor's own voice and delivery style. Instead of re-recording the same information for each class, this approach ensures consistency across multiple sessions of the same lecture, reducing redundancy and streamlining the learning experience.

By repurposing lecture recordings with AI technologies, instructors can devote more time to enhancing other aspects of teaching, such as designing engaging activities, facilitating discussions, and providing personalized feedback. Students benefit from the flexibility of accessing recorded lectures, allowing them to revisit challenging topics, review complex concepts, or catch up on missed classes. These recordings are not limited to delivering basic knowledge in the online component; they can also be utilized during in-class activities, such as concept-checking exercises or interactive quizzes, to reinforce understanding before progressing to higher-order learning tasks.

Leveraging AI technologies empowers instructors to effectively repackage these knowledge assets and implement a blended learning approach. Ultimately, this can reduce their cognitive load when delivering mixed-mode teaching in the long run.

#### **[142] Transforming and digitalising a community trail at Jalan Kukoh: Design and implementation considerations**

**Author/s:** Dennis Yeo (Ngee Ann Polytechnic)

**Abstract:** Situated Learning theory by Jean Lave posits that learning has to happen in the environment where the skill or knowledge is applied, that learning had to be experiential, through observation, participation, and social interactions. By bringing our students closer to the communities and individuals in the communities they hope to serve, we strive to incorporate the elements of Situated Learning to strengthen student learning and engagement.

The community trail at Jalan Kukoh estate was first introduced in 2014 to immerse students in the former Business & Social Enterprise Diploma (currently Diploma in Community Development) in social issues faced by marginalised groups within the neighbourhood. The trail was adopted from one conducted by Tong Yee, a local social entrepreneur, and co-founder of the Thought Collective.

The trail was a key experience in the Social Innovation and Design Thinking modules. Through the experiential learning opportunity, the students were immersed in complex social issues in the neighbourhood. This enabled the students to learn about various marginalised groups that co-existed in the same community. Over the years, student-led initiatives have spawned from students' sustained interest in the Jalan Kukoh community after participating in the trail. These include

volunteering for the community, organizing field trips for children from the neighbourhood and proposing hospitality skills apprenticeship program for youths in the community.

From 2020-2021, the community trail had to be halted due to Covid-19. A self-led version was brought back in late 2021 in the midst of prevailing social distancing measures. Responding to these challenges, the Office of Learning Technology at Ngee Ann Polytechnic digitised the trail with the use of 360-degree camera technology. This transformed the 100-minute tour of the neighbourhood into a virtual community trail, now remotely accessible by students. This meant that the trail could become more pervasive as it no longer had to be led in-person by trained guides and facilitators. It can also serve as an on-site virtual tour guide to students who embark on a self-led tour at Jalan Kukoh.

Retrospectively, the virtual trail overcame social distancing restrictions and allowed the students to explore the neighbourhood through a curated virtual community trail. However, it limits real-world immersive experience and connection with the marginalized groups in the community. Hence, the virtual trail is best used to complement the in-person trail for pre-trail preparation, virtual guide during the trail and post-trail reference for reflection and discussion.

#### **[150] Empowering Career Adaptability and Learning Preferences for Thai Working Adults in S-Curve Industries**

**Author/s:** Chantima Pathamathamakul (Learning Institute, King Mongkut's University of Technology Thonburi), Nuttavud Koomtong (Learning Institute, King Mongkut's University of Technology Thonburi) and Krittika Tanprasert (Faculty of Industrial Education and Technology, King Mongkut's University of Technology Thonburi)

**Abstract:** In the midst of ongoing disruptive technological change, skills will become obsolete faster while the demand for job skills is predicted on uncertainty. This research aims to examine perception regarding career adaptability and preferences in reskilling and upskilling among Thai adults working in industries with intensive innovation, technology, and value-based, or S-Curve industries. The study approached adults from six industrial clusters using the snowball sampling technique. Data collection was conducted online through semi-structured, in-depth interviews. Based on content analysis, identification of themes within qualitative data was framed by concept of career adaptability. The findings indicated career concern stemming from global market competition and technological transformation. Within small-medium companies, where a largely self-reliant work environment prevailed, participants' concerns focused on the ability of multi-skilling to enhance proficiency in their core functions. Individuals in small manufacturing companies specifically addressed the opportunities accompanying concerns regarding the development of human skills that remain irreplaceable by technology. In the aspect of career control and curiosity, participants expressed the need for vertical development in technical knowledge and skills, along with the acquisition of technology-related competencies and soft skills. The latter was emphasized as a crucial skillset for workers across employment sectors and company sizes, particularly where cross-functional collaboration was required. Participants had preferences in self-paced learning mode via online resources as they expected flexible and personalized learning. However, in-person activity was more interesting option to acquire knowledge and skills that should be hands-on experience and demonstrate tangible evidence of learning.

Learning units, short courses, and modular-based programs that provide non-degree credentials or certification deemed beneficial for individuals exploring job transition or pursuing cross-functional roles. On the other hand, degree programs deemed appealing to those whose qualifications did not align with their current job positions. Participants' career confidence was supported in functional competency that directly tied to a company's products and services. While in-company training

courses were generally available for employees, opportunities for the development of soft skills were comparatively scarcer. This study would discuss the corporate culture within the employment sector as an enabling factor for fostering personnel development. The research implication would provide guidelines for the organizational support to enhance employees' career adaptability and for Thai higher education institutions to use online learning in response to the adaptive needs of the targeted adult workforce.

#### [152] Fundamental Work Skills of students in the era of global digital futures

**Author/s:** Sakulkarn Waleeittipat

**Abstract:** Technology has played an integral role in facilitating work processes in order to achieve higher efficiency, transforming people's ways of life and their learning and working patterns. Students necessarily develop the skills to be ready for the competition in the labor market and to adjust themselves to the new technology and digital which has become a significant part of working. The objectives of this research included to investigate what fundamental work skills of students in the era of global digital futures were analyzed using the confirmatory factor analysis in order to ensure the structural measurement model and to study the learner behavior and the level of students' interest in developing the skills using descriptive statistics and Multivariate Analysis of Variance: MANOVA. The research samples were students randomly selected from King Mongkut's University of Technology 822 students. Firstly, the results showed that the measurement scale of fundamental work skills consisted of communication, management, leadership, learning skills, digital skills, adaptability, critical thinking, and creative thinking ( $\chi^2(252, N=822)=25.86, p=.00, RMSEA=0.04, SRMR=0.03, CFI=0.98$ ). Each field of study prioritized a different set of skills. Secondly, the results of the analysis of learner behavior and the interest in learning the skills revealed that even though we are dwelling in the digital era, students have the following preferences: Demand onsite and online learning together (68.51%). Prefer to be taught by a human teacher (46.76%) and learn through video clips (41.15%). Prefer to independently learn (51%) And desire to develop practical skills blended into their courses, alongside learning from internships or gaining experience from actual work (49.93%). In addition, the perception level of having work skills increases according to the frequency of self-development ( $F(24, 2347) = 1.73, p=0.02, Pillai's Trace = 0.50, partial \eta^2 = 0.02$ ). The more regularly they develop themselves, the more confidence they feel about their ability to improve themselves. The research results could help teachers and institutions establish courses that encourage work skills for the future labor market.

#### [154] Blended and hybrid pedagogies for better learner engagement: A diversified teaching and learning approach for an undergraduate science course

**Author/s:** Patrick Yue (Hong Kong Baptist University), Theresa Kwong (Hong Kong Baptist University), King Chong (Hong Kong Baptist University) and Simon Lee (The Hong Kong Polytechnic University / University of Macau)

**Abstract:** World Economic Forum (2020) envisaged the employment trend characterised with collaboration from different disciplines for bold ideas and sustainable solutions to address complex problems/challenges in our uncertain future. This enlightens the need of higher education to transform pedagogies by innovating and diversifying learning, teaching and assessment methods in digital environment. This presentation aims to demonstrate how a multi-disciplinary science course – Environmental Health and Toxicology integrated different methods during the past six years, including flipped classroom, Internationalisation-at-Home (IaH), Service-Learning and technology-supported assessment, to nurture critical thinking, teamwork, communication and cross-cultural competences for developing future-ready and solution-based graduates.



In this course targeting students in Biology, Chemistry and Geography, flipped classroom using FutureLearn platform was adopted for students to complete the self-learning module – Organ Toxicology before classes, including study guidance, multimedia resources, self-assessment and discussion forums. This online module was shared with institutions in different regions/countries for cross-cultural and cross-disciplinary exchange, to promote Internationalisation-at-Home. Class time was therefore maximised for in-depth interaction through discussion and case studies. To enhance teamwork skills, Service-Learning was included in collaboration with the local community. Students as tutors, delivered theme-based presentation and designed experiments for secondary students on environmental topics, to foster collaborative learning and civic responsibility. Teaching and learning of this course culminate in the incorporation of virtual augmented reality with mobile technology, in which students were required to develop mobile games for enhancing their awareness of laboratory safety and ethical issues. Student performance was assessed through multiple formative and summative assessment – evaluation of learning process at FutureLearn, reflection on Service-Learning and examination. Course effectiveness is mainly evaluated through the university mechanism – Course Feedback Questionnaire. Students’ overall feedback was positive, who gave above 4.5/5 rating to overall teaching effectiveness and self-assessed their achievement of learning outcomes as 4.6/5 through quality learning and assessment opportunities (both at 4.6/5). For qualitative feedback, student commented that the course aroused their interest through Service-Learning, case studies and class interactions.

In conclusion, this presentation highlights the importance of adopting multiple methods combining online/ face-to-face and in-/beyond class activities, in which digital technology is an indispensable driver, to develop our future-ready and solution-based graduates.

#### **[160] Working in teams - can students provide accurate and fair peer assessment?**

**Author/s:** Yong En Nah (Singapore Institute of Technology) and Gaik Bee Lim (Ngee Ann Polytechnic)

**Abstract:** Purpose

Collaboration is one of 16 Critical Core Skills identified by Singapore’s SkillsFuture for the workforce. The Ministry of Education has identified Interpersonal and Collaboration skills as a key Life Skill for career readiness and resilience. Collaboration skills can be developed through group projects and assignments; however, students need accurate assessment and feedback to develop these skills. A common concern of lecturers is whether students are able to assess fairly and accurately, as there may be social pressure to provide positive assessments, or ‘punish’ a non-conforming team mate. The aim of this exploratory study was to examine different designs to optimise peer assessment for accuracy and fairness, and to identify high and low performers.

**Methods**

Group member evaluations were conducted the same lecturer for students in 3 modules of a humanities diploma, using the FeedbackFruits platform. The rubrics had 4 criteria: contribution, work quality, attitude and teamwork. Students were to rate each other on a 4 or 5 point scale, and provide qualitative comments to explain their scoring. Parameters were varied for each module.

**Results and Conclusions**

It is possible for group members to evaluate each other’s contributions effectively (verified by the lecturer’s own observations), and translating it to a graded assignment score is possible, but requires strategic calibration. Having 4 key categories of assessment, using a 4 point scale with 3 as the “normal” was effective in identifying group dynamic issues, as well as differentiating outstanding as well as poor performers. Word choices used to describe each score band was crucial for calibration

of students' scoring. Self evaluation was an important reference point for comparison. Requiring compulsory comments for every score given was crucial for clarity and basis for further discussion for antagonistic situations. For summative evaluation, scores and comments should be confidential to the lecturer.

#### Recommendations/future directions

In order for students to develop the life skill of collaboration, these rubrics should be used at a midpoint check, where feedback given will be visible to each other. The students should be taught how to provide and receive feedback, with the lecturer stepping in to discuss group work challenges in the team where necessary. This will also prepare students for future work, where they will be working in teams and undergo performance appraisals.

### **[167] Data-Driven Excellence: Harnessing Learning Analytics for Student Learning and Programme Advancement**

**Author/s:** Ada Tse (The Hong Kong Polytechnic University), Chun Sang Chan (The Hong Kong Polytechnic University), Julia Chen (The Hong Kong Polytechnic University) and Albert Chan (The Hong Kong Polytechnic University)

**Abstract:** In response to the ongoing digital transformation in higher education, our university is deeply committed to enhancing the learning experience for both students and educators. We recognise the immense potential of digital technologies in education, which allows us to collect valuable information that can serve as evidence of students' learning progress. To address this, we have developed the Learning Analytics Platform (LAP), an innovative solution designed to support data-driven teaching and learning for all university stakeholders, including teachers, students and support staff.

The LAP serves as a comprehensive platform that centralises and integrates educational data from diverse sources, including institutional online learning platforms, student administration systems and institutional surveys. This platform streamlines data collection and analysis, provides interactive visualisations and standardised reports and leverages cutting-edge technologies such as artificial intelligence (AI) for advanced analysis and recommendations. It offers auto-generated insights and suggests follow-up actions with regard to student learning behaviour, performance and opinions. Most importantly, it seamlessly integrates with our institution's infrastructure and contributes to quality enhancement and assurance processes at subject, programme and university levels, including programme and curriculum reviews.

During this presentation, we will talk about the development of LAP and illustrate how the LAP and learning analytics (LA) can support teachers and programme leaders. At the subject level, the LAP provides engagement reports to teachers that aid them in understanding students' learning progress. In the future, we will enhance the LAP by incorporating AI to automatically generate insights and predict student performance.

At the programme level, our University advocates the use of LA to identify areas for programme improvement and enhance the quality of student learning. The LAP also features a comprehensive report system which can withdraw previous academic data and specifically tailor the information for annual programme review purposes. As such, we will discuss an example of LA implementation in the internal curriculum review of an academic English programme led by the English Language Centre.

**[170] Transforming the Future of Food: Empowering the Next Generation through Gamification in Sustainable Agriculture Education**

**Author/s:** Andre Kurniawan Pamudji (Soegijapranata Catholic University), Mellia Harumi (Soegijapranata Catholic University), Inneke Hantoro (Soegijapranata Catholic University) and Bernadeta Soedarini (Soegijapranata Catholic University)

**Abstract:** Sustainable food systems require a transformation process involving society, including the younger generation. This transformation includes a shift in mindset from being mere consumers to actively engaging and understanding their role as food producers while taking responsibility for the waste generated. The transformation for the younger generation can be achieved through formal education, such as various courses related to this issue. To enhance active student involvement in the transformation process, an attractive and effective educational media approach is needed, including gamification.

At SCU, students in the Information Systems and Food Technology Program collaborate in the creation and development of gamification for several courses with content related to sustainable agriculture. The development of gamification is based on observations in various urban farming communities in Semarang and direct field practices. Gamification is tested in courses on Food Ecology and Food Waste Management. In this development process, the effectiveness of gamification as an educational tool is evaluated.

Gamification includes gaming elements such as points, rankings, and challenges, encouraging students to actively participate in understanding the transformation of the food system. Gamification-based educational media can create enjoyable learning processes and reduce psychological barriers that may arise when starting the transformation process. Some of the challenges faced include fear or lack of confidence in starting urban farming practices directly in the field. At the end of the course, students are asked to reflect on how gamification-based teaching has helped them understand the transformation of the food system and what challenges they have encountered.

**[172] The Integration of Gamification in Diabetic Care Education: Enhancing Learning Outcomes through E-learning Pedagogy**

**Author/s:** Katherine Ka Pik Chang (The Hong Kong Polytechnic University) and Kitty Chan (The Hong Kong Polytechnic University)

**Abstract:** Purpose. In response to the widespread adoption of digital learning practices, particularly in the wake of the Covid-19 pandemic, the use of e-learning pedagogy has emerged as a contemporary strategy in higher education. This study explores the implementation of a teaching intervention that integrates an educational game to enhance competence in diabetic care. The aim is to investigate students' perceptions of the gameful experience, satisfaction, and self-confidence in learning.

Methods. The study employed self-administered questionnaires to gather data on students' gameful experience, satisfaction, and self-confidence. The Gameful Experience Scale was utilized to assess various dimensions of the game experience. Higher scores were indicative of a higher level of gameful experience. The Student Satisfaction and Self-confidence in Learning Scale were used to measure students' satisfaction with the learning activities and their self-confidence in learning. Higher scores on this scale indicated greater satisfaction and self-confidence. The study involved 143 participants, primarily aged between 19 and 21 years, who engaged in the educational game as a complementary learning activity alongside traditional face-to-face nursing subjects.

**Results.** The results revealed a statistically significant increase in knowledge of diabetes care following the teaching intervention. The participants reported high scores in all dimensions of the gameful experience, with the exception of the absence of negative effects and dominance. Furthermore, a strong positive correlation was observed between student satisfaction and self-confidence in learning and the dimensions of creative thinking, enjoyment, and activation.

**Future directions.** The integration of an educational game as an OER-based learning activity enhanced the students' learning experience and facilitated the achievement of course outcomes. This study contributes to the existing knowledge gap by demonstrating that gamification, when integrated with OER-based learning, can effectively promote student engagement and knowledge acquisition in the domain of diabetes care. The OERs created in this project are reusable learning objects that can serve as scaffolding for future students during their clinical practicum.

It is important to address the challenges posed by limited access and slow internet connections, which can hinder the gaming experience. Future research should focus on designing and evaluating learning games through mobile applications to ensure wider accessibility and seamless gameplay.