NUS Technology in Higher Education Day
16 November 2016
Venue: Blk AS8, 10 Kent Ridge Crescent, Singapore 119260

Time	Activity	Venue
8.30am	Arrival, light refreshment	Outside AS8-04-01 FASS Seminar Room, Level 4
9.00am	Provost's Introduction	AS8-04-01 FASS Seminar Room, Level 4
9.15am	Blended Module Presentations (15 min each): a) Prof Florence Ling b) A/Prof Karina Gin c) Dr Seow Teck Keong d) A/Prof Victor Tan	AS8-04-01 FASS Seminar Room, Level 4
10.15am	Q&A	AS8-04-01 FASS Seminar Room, Level 4
10.45am	Tea break	Outside AS8-04-01 FASS Seminar Room, Level 4
11.00am	LIFT Project Showcase (15 min each) a) A/Prof Ang Kok Keng b) A/Prof Kan Min-Yen c) A/Prof Kelvin Foong d) Dr Kenneth Ban	AS8-04-01 FASS Seminar Room, Level 4
12.00pm	Q&A	AS8-04-01 FASS Seminar Room, Level 4
12.30pm	MOE Tertiary Research Fund (TRF) by Prof Bernard Tan	AS8-04-01 FASS Seminar Room, Level 4
12.45pm	Lunch break	Outside AS8-04-01 FASS Seminar Room, Level 4
1.30pm	Small group discussions – "Taking NUS tech initiative forward: thoughts, ideas, innovation, wish list" a) Group 1, AS8-04-01 (Level 4) FASS Seminar Room - Dr Adrian Lee b) Group 2, AS8-04-02 (Level 4) FASS Seminar Room - Dr Andreas Dewanto c) Group 3, AS8-05-50 (Level 5) FASS Tutorial Room - A/Prof Damith Rajapakse d) Group 4, AS8-06-46 (Level 6) FASS Conference Room - Asst Prof Duane Loh Ne-Toh e) Group 5, AS8-07-60 (Level 7) ARI Meeting Room - Dr Soo Yuen Jien	
2.45pm	Tea break and demos a) Erle Lim b) Lonce Wyse c) Mark Brantner	Outside AS8-06-47, Level 6 and, a) AS8-05-50 FASS Meeting Room, Level 5 b) AS8-06-47 FASS Conference Room, Level 6 c) AS8-07-60 ARI Meeting Room, Level 7
3.30pm	Brief reports by group leads (10 min each) a) Dr Adrian Lee b) Dr Andreas Dewanto c) A/Prof Damith Rajapakse d) Asst Prof Duane Loh Ne-Toh e) Dr Soo Yuen Jien	AS8-04-01 FASS Seminar Room, Level 4
4.15pm	Summary of proceedings; and ALSET by Prof Robert Kamei	AS8-04-01 FASS Seminar Room, Level 4
4.45pm	The way forward; by Prof Bernard Tan	AS8-04-01 FASS Seminar Room, Level 4
5.30pm	End-of-event	

ABSTRACTS

Cultivate a flipped classroom mindset and change your teaching: case study of PF2108
- Prof Florence Ling, SDE

PF2108 was conducted as a flipped classroom in AY15/16. The purpose of this presentation is to encourage more instructors to adopt flipped classroom. By comparing it with traditional face-to-face lectures, these questions are examined: (1) Do students like flipped classroom more? (2) Do students in flipped classrooms master course concepts better? (3) Do students' ratings on the teacher conducting flipped classroom improve? (4) What's in it for me as the course instructor? Suggestions on what the university administration could do to facilitate mindset change are provided. The challenge of getting 150 students to engage in collaborative learning when they come to class is discussed.

To Flip or Not To Flip?
- A/Prof Karina Gin, FoE

Flipping a class requires substantial time and effort, and most of us would rather stay status quo than step into the unknown. Here, I share my experiences with flipping 'Environmental Engineering Fundamentals' (ESE1001), a first year engineering undergraduate module with about 120 students. Student feedback scores have improved and the experience has generally been a positive one for students and myself, mainly due to greater interaction and opportunities to apply different modes of learning. However, challenges do exist, including how to motivate students to watch the online video lectures before class throughout the semester, and how to make videos more stimulating and interesting.

From Lecture-based Classroom to iBLOC to Flipped Classroom'
- Dr Seow Teck Keong, FoS

The LSM1301 General Biology module was redesigned as an internal Blended Learning Online Course (iBLOC) for returning national servicemen, with 7 of 12 topics delivered via video lectures and the remaining 5 topics via live lectures. Laboratory sessions and field trip were also face-to-face sessions. The iBLOC, originally coded as LSM1301FC, currently coded as LSM1301X, had 12 students when it began in 2014, but reduced to 8 students in 2016. The video lectures have since been used for the regular LSM1301 module. The challenges faced and feedback from LSM1301 and LSM1301FC/X students, together with some future plans will be discussed.

ABSTRACTS

Flipping a Massive Module
- A/Prof Victor Tan, FoS

GER1000 is the only module under the General Education Quantitative Reasoning pillar, and is taken by almost all the first year students. There are about 3000 students taking the module in each semester. Due to the physical constraint, flipped classroom format is adopted for this module – all lectures are pre-recorded and delivered online, while students come to classroom for face to face tutorial discussion. Students are also divided into small groups to work on a project which leads to a poster session presentation at the end of the semester. In this talk, I will talk about the challenges faced by the teaching team and how we resolved some of the issues.

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eduApps – Learning by Playing
- A/Prof Ang Kok Keng, FoE

Today's generation of students are tech savvy and get distracted easily. The challenge was how to make learning for them an engaging fun experience. This was the motivation for the development of eduApps, an interactive, student-centric mobile app that runs on multi-platforms aimed at enabling learning through playing. The app is designed to be appealing where students do not view using the app as an assignment but rather it is fun 'playing' with it at the same time having positive learning outcomes. The app features cartoon-styled learning animations, narratives and assessment exercises, rich interactive simulations and serious games to provide students an active, experiential and fun learning experience.

MOOCs as Big Education Data: their Relevance for Improving Intervention
- A/Prof Kan Min-Yen, SoC

MOOCs are a key component in bringing the concept of large data access to education research. Focusing on the discussions in MOOC forums, we showing how their records help to characterise critical learning outcomes and the role that the instructor's intervention plays in the learning experience. Our work aims to distill data-informed pedagogical practices that may be ported to teaching outside of the large-scale MOOC environment.

ABSTRACTS

Bridging clinical skills training and oral/facial anatomy with computer-aided 3-D visualization to enhance operative skills competency
- A/Prof Kelvin Foong, FoD

Dental students have difficulty in applying anatomical knowledge learnt to the clinical context in the performance of operative procedures, a common example being the administration of local anaesthesia (LA). To overcome this difficulty, the project team developed interactive platforms through
(i)   an iBook (Apple Inc.),
(ii)   a stereoscopic virtual LA delivery model using the iBench (EON Reality), and
(iii)   a realistic 3D printed physical model of the facial/oral anatomy.

The presentation will give an overview of the development and how these platforms help with learning. It will also highlight the main challenges faced in the development, e.g., the steep learning curve in human anatomy of the technical team, and the approach taken to mitigate these issues.

E-Biochemistry: a pedagogical platform for e-learning biochemistry
- Dr Kenneth Ban

A good foundation in Biochemistry is essential for medical, dental and life science students as it provides the basis for understanding processes related to human health and diseases. Current challenges to ensuring a good grasp of the subject includes the need for
(i)   delivering a large body of biochemical knowledge and information that is accessible;
(ii)   delivering the knowledge in a contextual form in order to facilitate integration with applications;
(iii)   promoting retention of knowledge by facilitating the ease of revisiting the subject matter in later years of undergraduate education.

To address the challenges, our LIFT project, entitled "e-Biochemistry", aims to integrate and streamline content delivery, and to facilitate student feedback and active learning during classroom time through the implementation of 3 components: (i) a e-learning platform for content delivery that will facilitate self-directed and self-paced learning; (ii) a social media platform for automated delivery of important points and questions outside the classroom; (iii) a realtime feedback platform during classtime to facilitate self-assessment and identifying gaps in understanding. We envision that the integration of these components would enable the adoption of a 'flipped classroom' model such that students will carry out self-directed learning for basic knowledge and topics and classroom interactions can be focused on integration and application of knowledge learnt.

ABSTRACTS

Using Oculus Rift for Healthcare Students to Appreciate Eye Symptoms
- A/Prof Erle Lim, YLLSoM

The Oculus Rift, created by Oculus VR, is a virtual reality 3-D headset that uses 360-degree head tracking to make it feel like the wearer is inside a different world. The Oculus Rift was initially designed for gaming purposes, but potential uses for education have also been explored. The OculusRift has traditionally employed virtual reality - in which the user is in an artificial environment. In this project, I collaborated with CMU's Entertainment Technology Center (ETC) to develop games- and task-based scenarios in which the user, ostensibly a healthcare student, gets to "look through the eyes" of patients with various neurologic and eye diseases with characteristic eye signs. These conditions include

1. Migraines - with scotomata (obscuration of visual field), chromatopsia (coloured lights)
2. Colour blindness
3. Optic neuritis - with blurred vision and loss of colour vision
4. Constriction of visual fields - called tunnel vision
5. Hemianopia - with diminution of half the visual field
6. Oscillopsia - apparent movement of stationary objects
7. Diplopia - double vision

In addition to using virtual reality to simulate these optic phenomena, the students at ETC created a device with 2 cameras mounted on a perspex "external spectacles" to fit over the oculus rift, allowed the wearer to view the external milieu - and project the above phenomena over them, i.e. augmented reality.

Automatic Marking for the Masses
- A/Prof Lonce Lamar Wyse, FASS

Automated and media-supported peer marking are playing a growing role as teaching tools. They are a necessity for on-line courses that might have thousands of students submitting weekly assignments, but if properly designed and implemented, they can help in more traditional face-to-face oriented educational contexts, as well. These tools can relieve teachers of tedious work so that they can be more productive with their time, and can even provide helpful feedback for student learning.

I have developed a course, Web Coding Fundamentals for Artists, with Kadenze, an on-line Arts and Technology courseware company. Kadenze is an innovator in learning management systems and has invested heavily in automated support for grading and student feedback. I will demonstrate and be available to discuss some of the automated and peer grading capabilities of the Kadenze system, and talk about some of the strategies, opportunities, and challenges to achieving healthy learning outcomes with these tools.

Reference
Web Coding Fundamentals for Artists, Kadenze
www.kadenze.com/courses/web-coding-fundamentals-for-artists/info

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ABSTRACTS

Using ePortfolios to Foster Reflection for Integration and Transfer
- Mark Dean Brantner, USP

There is a common belief among some faculty that students will automatically make connections across the different modules they take. Faculty often think that students connect knowledge and skills from their first-year modules with their fourth-year modules or that they connect knowledge from their general education modules with their disciplinary requirements. Although this kind of knowledge integration happens for some students, many students cannot explicitly make such integrative learning connections without explicit instruction. This presentation will showcase how technology, in the form of ePortfolios, can foster this kind of integrative learning and, thereby, deepen student learning. Examples of ePortfolios will be shown and analyzed for the kinds of connections that students make through collecting, selecting, and reflecting on their work.