NUS Technology Enhanced Learning Initiatives

2015

CIT re-organized to support technology-enhanced learning initiatives
A new Education IT unit formed. It consists of animators (2D and 3D), graphic designers and editors that can be ‘seconded’ to work on cross-functional projects across all teams. A dedicated video production team for iBLOCs (blended learning) and instructional videos was created out from the Multimedia team. CIT’s Education Technology team was strengthened with 6 Educational Technologist.

Campus-Wide e-Learning Week
e-Learning Week from 9th to 13th of March 2015 was held campus-wide. All lectures, tutorials and seminars was conducted online. Over 65% of NUS faculty extensively used IVLE comprehensively for this e-learning week.

CIT is the Project Lead in assisting faculty in developing iBLOCs, iMOOCs and MOOCs.
For each iBLOCs (internal blended learning online course), iMOOC and MOOC developed by faculty, CIT’s Educational Technologist collaborates closely with CDTL’s Instructional Designers to manage, support and implement these modules on time.

To date from 2013, CIT has collaborated with CDTL to launch 6 MOOCs (including 2 specialization MOOCs) and 140 iBLOCs. A campus-wide Quantitative Reasoning (QR) blended learning module was launched on schedule for Semester I 2015/2016. About 3,000 students are expected to take this QR module.

2015

CIT has installed LightBoard to facilitate iBLOC recording for STEM topics
‘Lightboard’ at Practice Room 1, Stephen Riady Centre, University Town. The Lightboard allows instructors to face the camera while also writing on a transparent (glass) surface. Viewers see an instructor facing them and writing in the proper way – similar to an instructor teaching a class. This setup allows instructors to illustrate lessons with a diagram or explain a formula without blocking the written content with their bodies and without turning their backs to their students. This technique is especially relevant to STEM topics.
New User Experience Interface for IVLE launched in July 2015. This interface emphasis is on simplicity, consistency and follows a responsive web design to support viewing on multiple devices. IVLE now incorporates Yammer for social media collaboration.

CIT consolidated into one office
CIT has renovated its office at Computer Centre to incorporate its Multimedia Team from House 11. This will save CIT significant cost in managing separate offices and boost and reinforce CIT’s organizational culture. Renovating will also incorporate upgrading University Town’s recording booth and offices.

CIT is ISO 9001:2008 certified
CIT is ISO 9001:2008 re-certified for another 3 years. The objective for this external audit completed in June 2015 is to ensure CIT’s video production, conferencing, webcast lecture, courseware development and University Town audio-video services are certified for ISO’s quality management framework and business continuity.
2015

**NUS offers new public relations programme through Coursera**

NUS has introduced a new online specialisation programme in Public Relations for Digital Media. It is the University’s latest massive open online course and first online specialisation programme of its kind to be offered through Coursera. The programme, which is offered by the Department of Communications and New Media at the NUS Faculty of Arts and Social Sciences, will start from 15 September 2015. NUS will be introducing another new online MOOC on 28 September 2015 titled ‘Superhero Entertainment’, which will examine the social and cultural significance of superhero comic books and films. CIT is project managing and developing both courses. In total NUS has launched 4 MOOCs and 2 Specialisation MOOCs since 2014.

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**Public Relations for Digital Media Specialisation**
- Launched Course in Sep 2015
- On-demand with auto-cohort feature
- Audit or Paid/Premium grading

**Superhero Entertainments**
- On-demand with auto-cohort feature (2015 & 2016)
- As at 3 May 2016: > 5.4K enrolled from 124 countries

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**Effective Communication in the Globalised Workplace**
- Launched Course in Jan 2016
- On-demand with auto-cohort feature
- Audit or Paid/Premium grading

**Write Like Mozart: An Introduction to Classical Music Composition**
- 3 runs from 2014 to 2016; Session-based (2014 & 2015); on-demand/auto-cohort (2016)
- > 53K enrolled from 100 countries

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**Reason & Persuasion: Thinking Through 3 Dialogues by Plato**
- 3 runs from 2014 to 2016; session-based (2014 & 2015); on-demand/self-paced (2016)
- > 81K enrolled from 100 countries

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**Unpredictable? Randomness, Chance & Free Will**
- Session-based; 1 run in 2014
- > 39K enrolled from 124 countries

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2016

**CIT facilitates single-seating secure high-stakes e-exam at MD1 building.**

The MD 1 building features a hall that can accommodate an entire cohort of medicine students. Another important aspect is CCE’s implementation of a high-density wireless (HD Wi-Fi) network in the MD 1 exam hall. The HD Wi-Fi network enables a stable and high-bandwidth connection for each of the 300 or so students taking the exam.

At the same time, improvements in e-exam software (Examsoft) allowed students to use their own laptops. The Yong Loo Lin School of Medicine considered the single-seating e-exam pilot to be a success. Less than 1% of students experienced technical issues. Of these, none was insurmountable.

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MBBS Exam: 4th March 2016
2016

Virtual role-play for real-life skills
CIT collaborated with Computer Centre and Department of Pharmacy to develop an innovative 3D multiplayer online virtual reality role-playing game to equip NUS Pharmacy students with practical skills for professional practice.
PI: Dr. Kevin Yap and Dr. Yap Kai Zhen from Dept. Pharmacy.
Computer Centre: Mr. John Yap Yin Gwee and CIT: Mr Uday Satyamohan Athreya

Set in a futuristic post-apocalyptic world, the online game requires students to take on the role of pharmacist avatars and interact with virtual patients while embarking on a mystery mission, such as saving the world from a plague that transforms humans to zombies. The game offers varying levels of difficulty and allows students to dictate their own fate through a "choose your own adventure" format in which virtual patients will react according to how the students respond.

By engaging in role play, the students gain a better understanding of their patients’ medical conditions, after which they will undertake tasks applicable in real-life pharmacy practice. These tasks include processing prescriptions, prescribing over-the-counter treatments, developing a pharmaceutical care plan for the patient, as well as counselling patients.

Engineering self-recording room
A fifth self-recording room on campus was initiated at the Faculty of Engineering to support the University’s technology-enhanced learning initiative. The Engineering self-recording room is located at Block EA-05-18E.

TeamUp – the new social messaging service from CIT.
The Centre for Instructional Technology (CIT) has launched a social messaging service called TeamUp. TeamUp is from Mattermost which is a Slack alternative but used to support teaching and learning at NUS.

TeamUp allows you to create teams with whom you can chat, exchange links and files. This can be done via web, mobile or desktop apps.

Unlike other chat apps, you need not share your phone number to use it. Also, replies to messages can be threaded so that communication is kept in context.

In TeamUp, you can group chat with everyone in a team. For large teams, you can set up smaller, private groups. Like most messaging services, you can also direct message other members in your team.

The service is open to staff and students. TeamUp can be used for modules, projects or any other situation where group communication is needed.

As at Nov 2017,
- TeamUp for staff has 509 users, 83 teams and 343 groups.
- TeamUp for students has 1,629 users, 75 teams and 436 groups.

As at March 2018
- TeamUp for students has 2,132 users.
2016

New student feedback system.
CDTL launches new student feedback system called Blue Explorance that is integrated to IVLE via LTI.

Designing blended learning environments that engage students.
CDTL and CIT conducted a course to NUS faculty on how to teach, actively engage students in a blended learning format. The course itself was conducted in a blended learning mode and by the end of the course, participants will develop a unit of a module and present a prototype on 10th November 2016. Next session is scheduled to be conducted in July 2017.

Computer Centre and CIT co-hosted and co-organised the 6th APRU Education and Research Technology Forum 2016 that was held on the 17th and 18th of November 2016 at the Education Resource Centre, University Town. More information on the conference is at http://nus.edu.sg/apru. About 50 participants from various APRU universities participated in this forum.

Courseware and special iBLOCs developed in 2016

- Gamification Courseware for IEM1201S (Masculinities on Film)
  With Tan Yuen Ling Lynette (CELC) to gamify certain aspects of her module IEM1201S.

- Vascular Plants in Virtual Reality
  With Prof. Hugh T.W. Tan from the Dept. of Biological Sciences to create a wiki site on Vascular Plants. This wiki site contains the shapes and structures of 24 plants digitized in 3D images. Student can view the plants parts through 360 degrees for each representative species for each of the nine vascular plants in the plant kingdom. It will help student better appreciate plant structures.
2016

• QPillar iBLOC modules
  
  http://www.nus.edu.sg/registrar/general-education/important-information-for-students.html

  o GER1000 Quantitative Reasoning
    This module aims to equip undergraduates with basic reasoning skills on using data to address real world issues. What are some potential complications to keep in mind as we plan what data to collect and how to use them to address our particular issue? When two things are related (e.g. smoking and cancer), how can we tell whether the relationship is causal (e.g. smoking causes cancer)? How can we use data to do projection and scenario planning? Can quantitative reasoning help us deal with uncertainty or elucidate complex relationships? These and other questions will be discussed using real world examples.
    About 3,000 freshmen take this module every semester.

  o GEQ1000 Asking Question
    There are many ways to ask questions, and many kinds of questions that different disciplines investigate. For a start, this module introduces six dominant modes of questioning from the perspective of computational thinking, design thinking, engineering, philosophy, science, and social sciences. These six perspectives serve as a starting point to introduce all undergraduate students to different modes of questioning across these disciplines, and provide an initial exposure to how scholars from these disciplines pursue specific lines of questioning of everyday issues.
    About 3,000 freshmen take this module every semester.

IT Strategic Plan for Teaching and Learning: 2017 – 2019

CIT in collaboration with NUS Provost Office and NUS’ Technology Enhanced Task Force has crafted the IT Strategy Plan for Teaching and Learning. This plan is part Computer Centre’ campus-wide IT Strategic Plan for 2017 - 2019. The main initiatives in this plan for Teaching and Learning are:–

<table>
<thead>
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<th>Proposed Initiatives</th>
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<td>• Developing the Next Generation Digital Learning Platform</td>
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<td>• Supporting an eco-system to allow faculty to explore, innovate and take risk in developing new education applications that can yield good learning outcomes.</td>
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<tr>
<td>• Digital assessments for authentic assessments and individualized feedback.</td>
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<tr>
<td>• Create opportunities for social collaboration and peer learning to support both formal and in-formal learning.</td>
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<tr>
<td>• Encourage initiatives that support in-class engagement, discussion and feedback.</td>
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<tr>
<td>• Launch educational repositories to support educational research, analytics and re-usable content.</td>
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Office 365 for NUS Staff

Following on the footstep of Office 365 for students, Computer Centre has now officially launched Office 365 for all NUS staff. CIT is supporting Office 365 for teaching and learning - Microsoft Sway, OfficeMix, Video and OneNote.

Computer Centre Initiative

2017

Learning to learn better

CIT is collaborating to ALSET to develop an online module for NUS students on the topic ‘Learning to Learn Better’ scheduled to be launched in August 2017. A 2nd course called ‘Learning to Choose’ will be launched in August 2018.

e-Assessments re-branded to Digital Assessments

To reflect CIT’s mission in advocating the use of technology for both formative and summative assessments and to bring about real world benefits to NUS stakeholders. Digital Assessments using ExamSoft for NUS is now hosted on servers located in Singapore, giving everyone much faster access to ExamSoft from Singapore. In 2016/2017 Semester I, 5,000 students did digital assessment vs. 2,000 in 2015/2016 Semester I.
CIT participated in ECAR’s 2017 Student Technology Preference Survey. The survey will give an indication of NUS student’s orientation towards technology, the number and type of devices they own and the extent they use these devices in their academic work. The survey is scheduled to run from 1st February 2017 to 28th April 2017.

Microsoft Office 365 Seminar for teaching and learning.
As NUS staff and students are on Office 365, CIT and Computer Centre co-organised a series of seminars for staff on how to use Office 365 tools to organize, collaborate and engage with students and fellow educators. This seminar covered tools like OfficeMix, Sway, OneNote and Video. The 1st seminar is scheduled for February 23rd 2017.

Module Trailers for all general education (GE) modules by Jan 2018.
Module trailers are 2 minute short videos that will give students a preview of the GE module’s offerings. The aim is to excite student about the modules and to dispel fears or uncertainty among students who want to sign up for your module. (http://cit.nus.edu.sg/module-trailers/)

Examples:
GEQ1000:
https://mediaweb.nus.edu.sg/Panopto/Pages/Viewer.aspx?id=98ca97c8-33b9-4425-8a17-9c4fc6de501c
GEH1049:
https://mediaweb.nus.edu.sg/Panopto/Pages/Viewer.aspx?id=a75def69-37b5-4927-9e54-aa211a30286e
GEH1070:
https://mediaweb.nus.edu.sg/Panopto/Pages/Viewer.aspx?id=08ef8a65-3f09-4550-b7e8-61746493ae7d
GES1027:
https://mediaweb.nus.edu.sg/Panopto/Pages/Viewer.aspx?id=e7f321c2-66b1-438a-93d0-19b30ba10274

NUS Technology Experience Day
25th April 2017 from 2 p.m. to 5.30 p.m. at CDTL.
Provost Office, Computer Centre, CIT and CDTL co-organised the NUS Technology Experience Day. The aim of this inaugural event is to inspire and encourage faculty to experience first-hand technology tools that can enhance and create a positive impact to teaching and learning. (http://www.cit.nus.edu.sg/tech-day/)

Centre for English Language Communication (CELC) self-recording room
A sixth self-recording room on campus was launched at CELC to support the University’s technology-enhanced learning initiative. This room is located at CELC building, room 02-14.
2nd Blended Learning course
A 2nd Blended Learning Course was conducted by CDTL and CIT from 28th Sept to 16th Nov 2017. Topics covered include:
- What is blended learning, flipped classroom, constructive alignment and ILOs (Part 1).
- Constructive alignment & ILOs (Part 2) and digital assessment for blended learning
- Designing learning activities to promote deep learning
- Peer review on lesson plan
- Development of a prototype based on the lesson plan – storyboarding & principles of designing multimedia
- Gallery walk on presentation of prototypes by participants and peer review of prototypes.

Technology Enhanced Learning Conference 2017
NUS hosted TEL2017, the 2nd National Conference on Technology-Enhanced Learning at University Town on 21 and 22 November. The Centre for Instructional Technology (CIT) was part of the organizing committee of this two-day event.

Zoom for online teaching and meetings
Zoom is a cloud-based conferencing service that offers the ability to conduct online meetings, classes, and events that leverages instant messaging, video conferencing, breakout rooms, screen-sharing, and whiteboards. Faculty can hold virtual office hours and invite remote students into the classroom for a presentation and staff can work from home while keeping in touch and participating in staff meetings.

All faculty and staff using this service and will login with their NUS credentials. Outside participants can join via a sharable URL, and the meetings can be restricted to invited users or even further protected with a password unique to the meeting itself.

2018
CIT January 2018 newsletter.
CIT’s newsletter for January 2018 identified three services that will make an impact to teaching and learning at NUS. These are TeamUp for collaboration and communication, digital assessments with Examsoft and a new conferencing tool called Zoom.
Workshops planned for Semester I 2017/2018: (a) Panopto for Teaching and Learning; (b) Digital Assessment Workshops and (c) Microsoft Teams Train-the-Trainers course on Microsoft Teams on 21st March 2018.

2018
NUS’ Next Generation Digital Learning Platform is LumiNUS

LumiNUS

NUS students and staff are familiar with IVLE, which has been a part of campus life since 1999. Soon, this will change. A new learning management system (LMS), LumiNUS, will be launched. Over the course of the next two years, LumiNUS will become the place for teaching and learning online in NUS. This will be a significant change for the entire campus community. As such, CIT has phased the LumiNUS rollout over several semesters.

To support teaching and learning effectively, CIT has had to redesign the LMS from the ground up. Unlike previous IVLE upgrades and refreshes, this one is a clean break from the past. AY 2019/2020 LumiNUS will go into production and IVLE will become read-only.

Digital assessment progress update
View slides on digital assessment initiative launched by CIT. For AY 2017/18 Semester 1, 425 online examinations were conducted out of which 78% was for continuous assessment (CAs) and 22% was for final examinations. Approximately 9,400 students took that CAs and final examinations online. This is a 40% increase over AY 2016/17 Semester 2 where 6,600 students took their CAs and final examinations online.
2018
By 31st January 2018, about 85% of NUS lecture theatres have had their cameras upgraded to support full HD (High Definition). This will enhance the quality of web lecture recordings.

Mixed Reality MakerSpace
CIT has collaborated with Provost Office (Prof. Erle Lim), and NUS Library to create a virtual/mixed reality makerspace. Located at NUS Library, this makerspace will provide a sandbox for faculty and students to test-drive the latest virtual/mixed reality hardware, software and 3D printing. This is makerspace is scheduled to be launched in June 2018.

Figure 2: Mixed Reality Makerspace in NUS Library

Singapore Mixed Reality Hackfest on 9-12 April 2018
CIT participated in this Hackfest organised by Microsoft Singapore with NUS IT to expose CIT staff to mixed reality technologies and techniques.

Figure 4: Hackfest Workshop

Created aerial views for NUS Open Day using drones and 360-degree cameras.
2018

One Button Recording Studio.
CIT is collaborating with NUS Library to locate a one button recording studio at NUS Library. This one-button recording studio targeted at students is to allow them to self-record for project presentations and video resumes.

CIT successfully re-certified for the ISO 9001:2015 standard

CIT has been successfully re-certified for the ISO 9001:2015 standard from June 2018 - May 2019. The re-certification covers the main areas of CIT services namely multimedia productions, management of CIT studio, University Town audio-video support and system and server administration of CIT services.

CIT hosts UNLEASH participants
CIT hosted about 40 UNLEASH participants who are in Singapore for the UNLEASH Innovation Lab from May 30th to June 6th 2018. UNLEASH is a global innovation lab, convening 1,000 carefully selected millennial thought leaders from more than 100 countries, who will collaborate on ideas and solutions to help achieve the UN Sustainable Development Goals (SDGs). Singapore is the official host of UNLEASH 2018. Visit the UNLEASH Innovation Lab website for more information on the programme.

NUS Inspiring Teacher Video Series
CIT has collaborated with NUS Teaching Academy to produce a series of introductory videos on NUS’ inspiring teachers. This video series highlights the strategies and engagement techniques used by NUS inspiring teachers when they teach their students.

To date, CIT has produced 32 videos that have been showcased to NUS Teaching Academy’s website, http://www.nus.edu.sg/teachingacademy/about-us/our-people/executive-council/

NUS’ next generation digital learning platform LumiNUS goes ‘beta’ on 1st August 2018.
NUS launches the L3 programme for NUS Alumni.

NUS Lifelong Learners (L3) Programme

- **Who**: All NUS Alumni
- **Why**: Lifelong Support for Alumni
- **What**: Courses, Graduate Diplomas, Second Degrees, Master's Degrees
- **When**: Launching in August 2018

**All graduates who have completed their degrees at the National University of Singapore (NUS) are automatically eligible for the new NUS Lifelong Learners (NUS L3) programme.**

NUS seeks to ensure that its graduates have ready access to skills-based, industry-relevant courses necessary for upskilling or reskilling, to remain competitive in the job market, and to enable them to make a greater impact on the future economy.

- The new NUS Lifelong Learners (NUS L3) programme offers a comprehensive, curated catalogue of skills-based, industry-relevant courses.
- NUS Continuing Education and Training (CET) courses, beyond the publicly available SkillsFuture Series, will be offered. They include courses currently offered to NUS students, as well as those designed specifically for adult learners.
- Alumni may choose to stack up these courses into qualifications such as Graduate Diplomas, or even Bachelor's or Master's Degrees.
- Courses will be delivered through blended-learning pedagogies which combine traditional teacher-led classroom instruction with independent student learning outside the classroom using online materials.

**All NUS alumni are automatically eligible!**

NUS becomes a charter member on edX

NUS signs up as charter member for edX. As part of this collaboration, all of edX’s more than 2000 courses - from all of their more than 110 partner institutions will be made available to NUS students. NUS will also be mounting some of its blended learning courses (SPOCs/IBLOCs) on edX (the NUS edX portal will be called NUSx), as well as creating some new MOOCs for edX.

Poll Everywhere for student engagement during Lectures

CIT has acquired a campus-wide license to use Poll Everywhere for classroom collaboration and communication to support both formal and in-formal learning. With Poll Everywhere, instructors can create a higher level of engagement and class participation. With Poll Everywhere, student using their wireless devices can ask and answer questions, participate in polls and vote on questions raised by the instructors. All leading to higher class participation and better feedback.

Cisco IP Phone to Skype for Business

NUS IT (called Computer Centre before) has successfully migrated the campus from the Cisco IP Phone System to Skype for Business (SFB). They have successfully migrated 85% of the users and are on target to complete the migration by September 2018. About half a million dollars in annual cost savings achieved by switching from Cisco phones to SFB soft phones and a further $240,000 in annual cost savings resulting from...
the decommission of nearly 1,500 telephone lines

2018
NUS IT launches Chatbot called ‘Alca’ to assist with common IT enquiries.  
This Chatbot is powered by cognitive Artificial Intelligence (AI) technology that comes with a natural language understanding capability. CIT created a video to support this project.  
https://mediaweb.nus.edu.sg/Panopto/Pages/Viewer.aspx?id=fa64081e-7e93-4381-a2ab-a93800321834

NUS IT launches the Digital Workspace – Where Work Spaces go Places”  
This initiative allows users to consume e-services easily and securely from their choice platforms. It liberates the way users work, the deskbound paradigm and engenders an environment where one no longer has to fret about carrying heavy notebooks to/from the office and home, while remaining connected and productive.

CIT acquires four CatchBox throwable microphones for University Town
CatchBox is a throwable cushion box with a microphone inside to enhance student engagement and to liven up interaction within the class. CatchBox is a great ice-breaking tool between lecturers and students and creates higher participation rates among students. CatchBox can be passed around faster than typical handheld microphone. This allows more questions to be answered within a limited period of time.  
https://www.youtube.com/watch?v=Oyik64nb8eY&feature=youtu.be

Inaugural ’Learning on NUS Campus, 2018’ to be held on 28th September.  
Organised by Provost Office and CDTL, this programme begins with the Teaching Awards ceremony before the first sessions. In total, 34 departments are represented in the learning day programme, with thirty 1/2-hour talks and sixteen 1-hour demos/active learning sessions.

NUS IT has embarked on a Cybersecurity Awareness Campaign

Phishing Reporter Button  
With a simple click, you can report suspicious or phishing emails directly from your Microsoft Outlook or NUS WebMail.  
Click here to learn more

Cybersecurity Awareness Talks  
Learn about the latest cybersecurity threats and best practices to avoid falling prey.  
Check out the dates.

Cybersecurity Awareness E-learning and Quiz  
Watch online videos at your own pace and answer quizzes to test your knowledge.  
Test yourself

Cybersecurity Screen Saver  
Install our free screen saver, to learn about protecting your PC from unauthorised physical access and remind yourself of cybersecurity best practices.  
Download our screen saver

Cybersecurity Roadshow  
Visit our booth at University Town on 16 and 17 August, from 11am to 5pm and collect some freebies along the way!
2018

Integrating 360° Videos in Course
CIT loaned its 360° Fly and GoPro Fusion cameras to Instructor Fun Man FUNG from the Department of Chemistry. Please read his article on how he has been using these cameras to support Chemistry education in the laboratory at NUS [here](#).

Microsoft Teams for administrative departments.
CIT has conducted about 8 face-to-face seminars from October to November to 10 administrative departments to showcase how Microsoft Teams can support group collaboration and discussion to support administrative projects.

2019

edX for NUS
edX is a not-for-profit MOOC provider that has partnered with 115 top-tier universities and organisations to provide educational materials online. NUS will be joining edX to allow staff and students to use edX MOOCs and contribute to the MOOC education environment in the following ways:

1. Allow our students to view any edX MOOCs for intracurricular and extracurricular purposes
2. Allow our NUS instructors to 'flip' external edX MOOCs within NUS
3. Allow our NUS instructors to 'flip' a hybrid NUS/external edX MOOCs with NUS.
4. NUS instructors 'flip' NUS-created single private online courses or MOOCs within NUS.
5. Allow NUS instructors to create MOOCs on edX for global students

NUS’ next digital learning platform called LumiNUS will be integrated to allow single signon access to edX MOOCs.