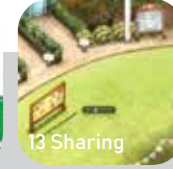# SLLO NEWSLETTER

September, 2021

10 Questions

Dr Hin Chung LAU, Department of Biomedical Engineering

One of the appointees of Service-Learning and Leadership Office Associates Programme on WHAT it is, WHY it matters, and HOW he is planning to make the most of it.

Can you tell us something about your role at PolyU?

I'm a Senior Teaching Fellow from the Department of Biomedical Engineering (BME) who is also the Programme Leader of Bachelor of Science in BME. I am passionate about promoting cross-departmental faculty-student collaboration in projects related to service-learning and the design of healthcare tools.

Can you tell us something about the SLLO Associates Programme? What can an academic/ a teaching staff do with it?

To me, it is a programme launched since AY2020/21 to knit a closer relationship between the SLLO and individual academic/ teaching staff who are eager to develop service-learning and leadership initiatives. Successful applicants will receive a stipend of up to HK$20,000 for the academic year to facilitate their project in terms of manpower, equipment, and project materials, etc.

We know that you have been delivering your SL subject that combines STEM education with product engineering for years. You have also been supervising student-initiated capstone SL projects. What motivated you to still apply for the Programme?

Credit-bearing SL subjects are indeed effective means to get students to serve the community with their knowledge and creativity. However, deliverables of the student-led service projects conducted as part of the subject might sometimes be limited by the tight lesson and service schedule. Take my subject BME2S03 Reducing the Scientific Divide in Primary and Secondary Students through STEM Projects as an example, I saw a number of great product ideas and some student teams also managed to develop sounded prototypes to enhance the everyday life of the needed over the years. But rarely these ideas or prototypes could remain alive at the end of the subject or the semester. Therefore, I am eager to explore opportunities that help sustain and expand the impact of my SL subject from outside the formal curriculum.

Under Dr. Lau's supervision, PolyU students led secondary school students developing healthcare tools for the elderlies

A. Softside luggage that allows the SWAT Team to travel lightly and flexibly

B. 360-degree camera coupled with an adjustable tripod that help capture the living environment of needy people comprehensively

C. Thoughtful rehabilitation tools that enhance the everyday life of needy people will be brought by a SWAT Team member as souveniours in each of the site visit

D. Health equipment (e.g. traditional & digital blood pressure monitors, digital thermometer, hygiene pack) will be brought by a SWAT Team member as souveniours in each of the site visit

E. Souveniours on STEM education might also be brought by a SWAT Team member when visiting youths

Can you walk us through what you did for the Programme? What are the intended outcomes/ deliverables of your project?

I used the stipend to kick start a student-led service team at PolyU called "SWAT". The acronym stands for Students Working on Assistive Technologies. The Team members would be trained to work as agile, multifaceted community outreachers, researchers, as well as leaders in enhancing STEM literacy from within and across PolyU, who were dedicated to developing assistive products for the needed.

Specifically, the SWAT Team members would work in partnership with students from my SL subject to conduct home visits in Hong Kong and the Philippines to conduct end-user research on the needy people. During the visit, the SWAT Team members would take the lead in using the multipurposed Care+ Kit tailored for this project to perform data collection and deliver knowledge about STEM or rehabilitation.

Data collected from the visits would then be uploaded to a PolyU-wide web portal, which has been developed by the BME Department since July 2021 based on a donation (https://polyu.hk/mBeMw). It is hoped that with more resources contributed by the SWAT Team year after year, the portal could function as a database for students of diverse disciplines – Design, Nursing, Engineering, Rehabilitation, etc. — to innovate for not only their school projects but also our society.
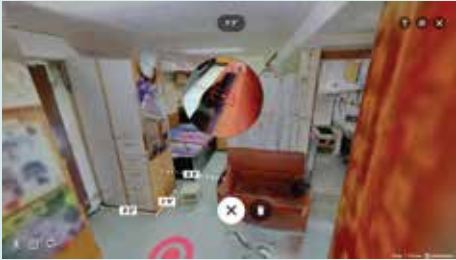
A picture collage showing the analysed living environment of an end-user captured by a SWAT Team member using the 360-degree camera

To what extent are you happy with its outcomes/deliverables so far?

I'm delighted that we have successfully developed a fully functional Care+ Kit for the home visit yet I'm less satisfied with the number of SWAT Team members we have managed to recruit.

**What is your biggest challenge in project implementation? What did you do to overcome the challenge?**

The COVID-19 pandemic is a great obstacle for sure! The suspension of overseas SL has rendered the plan of dispatching the SWAT Team to the Philippines impossible. Since there is still much uncertainty about the pandemic, I have started to consider new plans for the overseas front of the project like recruiting local students or collaborators in the Philippines as the SWAT Team affiliates perhaps.

Another challenge is student recruitment. The number of dedicated students in the SWAT Team is yet to be expanded. Knowing that our PolyU students have already got a lot of extra-curricular engagements alongside their busy study life, I think I have to work more strategically on promoting the unique values of the being a SWAT Team member.

Looking back, what would you have done differently to enhance the impact or effectiveness of your project deliverables?

Promotion matters! I could have better capitalised to students their goals in and commitment to being a SWAT Team member by adopting the good practices of the SLLO in running their well-received Technology for Development (Tech4D) programme.
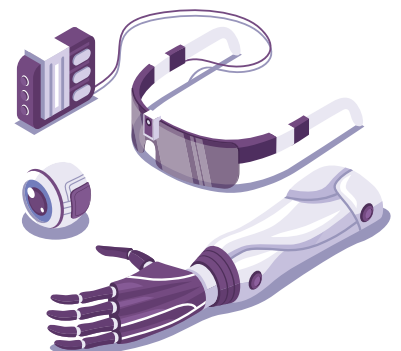
Do you have any plans, in short-term or long-term, on sustaining the impact of this project?

Following the completion of the Care+ Kit, I am indeed looking forward to sending the SWAT team for home visits in AY2021/22.

In the long run, I would like to expand the breadth and width of the project in two ways. First, I envisage making collaborations with other SL subject teachers by having the SLLO as a "match maker". I believe that by engaging students from a wide range of SL subjects, which anchor at various service locations and service recipients, as the SWAT Team members, we could scale the scope of our database progressively.

Adding to that, when we have collected data about the needs of different underprivileged communities at a considerable scale, it would be possible for us to compare the needs of different end-users and investigate for instances, "how would be the needs of elders in the Philippines different from those in Hong Kong?"

As an academic/ teaching staff, what is your biggest gain from the Programme?

The straightforward application and flexible nature of the Programme make it easily one of the friendliest funding opportunities for teachers to pilot any service-learning and leadership initiatives.

If you were asked to share some tips with fellow PolyU academics/ teachers who are thinking of becoming SLLO Associates, what would you say to them?

• Reach out to SLLO colleagues early and discuss how you can better support each other to implement the initiative.

• Reach out to the SL community at PolyU early via the SLLO to get your ideas shared and identified the like-minded.

For details of the SLLO Associate Programme:

http://gofile.me/3caCM/jXAfxjwX3

Habitat Green Tele-engineering Project
Summer 2021

The COVID-19 pandemic brought a stop to international travel and face-to-face teaching, and added complexities to our service projects. However, community needs do not stop because of COVID-19, and the lack of electricity makes a lockdown situation even worse. In 2020-21, we took the step of piloting an online tele-engineering project.

"Habitat Green in East Africa" was a service-learning and leadership programme focusing on nurturing students' global leadership and cultural sensitivity in the context of cross-disciplinary green engineering, appropriate technology, and sustainable living. PolyU students worked together with students from the local schools in Rwanda to design and develop green energy solutions for families in remote villages. In the process, PolyU students learned about the concepts of socially responsible leadership, intercultural competencies, racial tolerance and global citizenship, and demonstrated these in practice. They also learned about different principles of green engineering, sustainable development, and appropriate technology, and adopted the concepts into the service projects.

The project involved 56 students enrolled in three service-learning subjects: COMP3S02: Socially Responsible Global Leadership in a Digital World, from the Department of Computing, EE2S01: Low-cost Energy Infrastructures for Developing Regions, from the Department of Electrical Engineering, and BSE3S02 Living Environment for Low-income Communities in Developing Regions from Department of Building Environment and Energy Engineering.

Students preparing the solar electricity system customised for the project for shipping

The "made-in-PolyU" systems were ready for a ride to Rwanda

In Rwamagana, 70 km away from the capital city of Rwanda, hundreds of families are still off-the-grid and cooking with the most primitive 3-stone (sometimes even 2-stone) stoves which generates excessive harmful gas. They also live in darkness for decades and have to walk for hours to get their mobile phone charged.

Having acquired the concepts of sustainable living, green engineering, and the additional challenges brought by COVID-19 to rural areas in East Africa, our students designed and developed two energy solutions for families in Rwamagana:

(1) Portable & easy-assembled solar electricity system; and
(2) Efficient & inexpensive rocket stove.

PolyU students preparing mock-up rocket stoves for testing and enhancement before bringing the solution to Rwanda

A picture collage of our service recipients posting under their solar-energy-lit home

Youths assembling the solar electricity system and rocket stove under the remote guidance of PolyU students

After weeks of training and preparation, almost 2 tons of tools and equipment were shipped to Rwanda. Our students then worked online via Zoom and WhatsApp video call with youths from a local vocational school. They trained the youths on principles of solar electricity and rocket stove, worked with them to repair the tools and equipment that were damaged by the long-distance flight, and then helped the youths to install the systems remotely. Altogether, we have brought light and the enhanced cooking experience to 150 families there.
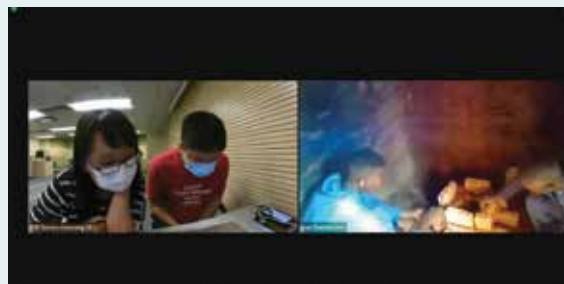
PolyU students providing the training with the support of video conferencing tools

Check out the video summarising the great moments of the project

To see testimonials from the service recipients gathered by our NGO partner

Check out the map that shows the growth of our Rwanda energy engineering project since 2015

Additonal Information

For more good reads on the project:

Generation-C SERVE:
Co-creating with Youths in Chiang Mai

Generation-C SERVE (Gen-C) is a leadership programme that brings PolyU students and students from universities in Asia to learn and serve together. It aims to develop students' higher-order critical thinking and empathy through integrating academic knowledge and service experience. Students in this programme also develop cross-cultural competencies and leadership through working in culturally mixed teams.

36 participants of the Gen-C programme in AY2020/21 were first enrolled in the subject, APSS2S11 Social Poverty in Developing Countries, to understand different aspects of poverty, and how to develop practical solutions for alleviation. It was also a pleasure to have 8 students joining us online from Yonsei University in South Korea. Their involvement enabled our participants to explore the ideas of poverty from multiple perspectives.

Having learned about the idea of social poverty from the lectures, the participants were encouraged to put their learning outcomes into practice by serving a socially deprived community in Thailand. Partnered with the Leadership Home in Ching Mai, participants of the Gen-C programme were guided to design and deliver co-creation projects with 50 youths, aged between 8 and 18 years old, who are living in the hill tribes with the objectives of social empowerment.

Youths showcasing their compost bin in the co-creation project

Prior to the start of their co-creation projects, students learned to tackle social issues with a strength-based approach, which focuses on examining the value and potentials of the individual rather than the individual's environment. During the initial meetings with the service recipients, students ran need assessments to identify the community assets. By so doing, they knew that the youths were managing a farm and garden of their own. They were also good at arts and drawing.


Youths from the Leadership Home grew beans together. Our students taught them the importance of science literacy and responsibility through the activity

Students came up with lesson proposals for co-creation projects that responded to the youths' talents, interests and needs. One group, for example, led the youths to set up their compost bin in the Leadership Home. By doing so, the youths were not only able to turn food waste into natural fertiliser for their garden, but also gain hands-on experience in applying knowledge of environmental science to bring positive impacts to their community. In another instance, the youths were guided to tie-dye t-shirts using natural materials such as the plants and vegetables grown in their garden. It helped the youths to reuse and recycle their wastes and appreciate more of their community's natural resources.

This service project left us with countless stories to tell...all the service sessions concluded with laughter and heartfelt moments. The greatest story, however, would be how strengths and possibilities were found amid poverty and deprivations; and how all participants strived to celebrate collaboration and togetherness online.

Although the pandemic disrupted our plan of on-site service, the extensive support from the staff of the Leadership Home and students from Chiang Mai University helped our participants to overcome geographical and language barriers, hence shed new light on the ways we understand adversities. It is high time for us to re-explore words like "Poverty", "Pandemic", and "Limitations". Can these words, instead, be identified with "Strengths", "Hope" and Possibilities"?
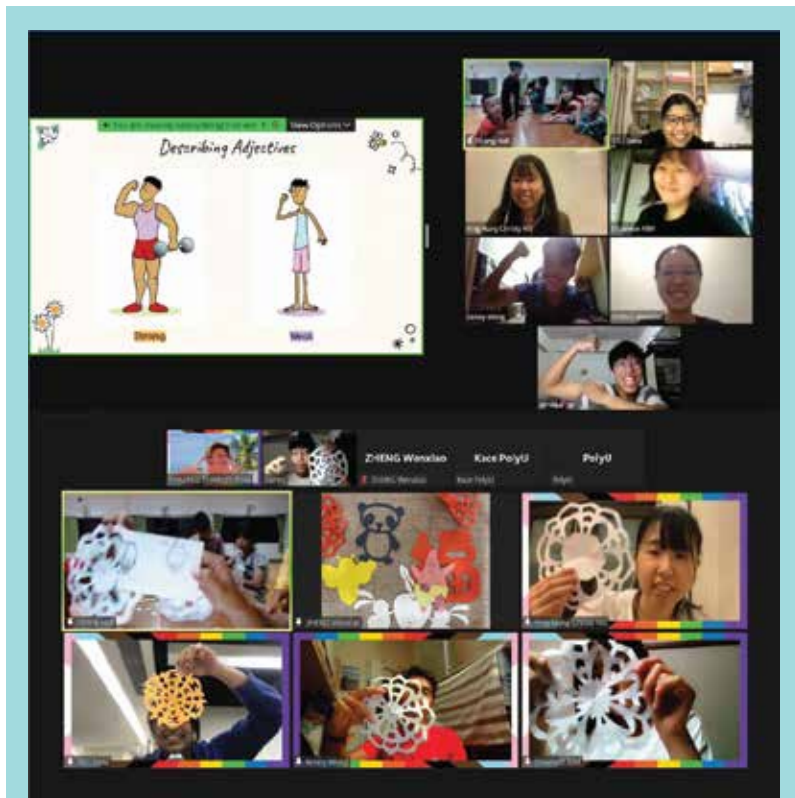
Students teaching English and doing traditional Chinese crafts with the youths
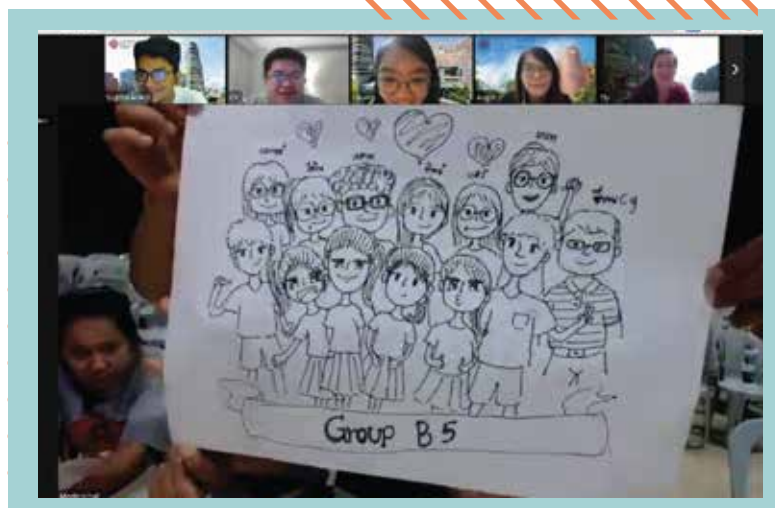
Youths expressed gratitude towards our students with an adorable sketching

Understanding
Your Service-Learning Subject Report

In each academic year, all students undertaking service-learning (SL) subjects are asked to complete the pre- and post-experience surveys for their courses. These surveys are designed to understand the effectiveness of our SL subjects in helping students to attain the four common intended SL outcomes of PolyU and the overall subject experience from the students' perspectives. It is not uncommon for SL teachers to reach out to the SLLO for the relevant survey data to have an evaluation of their SL subjects. With an aim to better support SL teachers in this endeavour, the SLLO has taken the initiative to compile SL Subject Reports with reference to the captioned survey data since AY2020/21. A special seminar was also held on 31 August 2021 to help fellow colleagues interpret the figures and charts inside the Reports accurately hence identify the merits and potential areas for improvement of their subjects.

Survey Content	Pre-experience survey	Post-experience survey
1. **Student Self Assessment of SL Outcomes** on the following 4 domains: • **Knowledge application (4 Items)** • **Problem solving (4 Items),** • **Empathy and caring for others (3 Items),** • **Social responsibility (3 Items)**	✓	✓
2. **Self-reported Learning Gains (9 items)**		✓
3. **Self-reported Learning Experience (19 items)**		✓
4. **Open-ended questions (3 items)**		✓

A slide summarising the content of the pre- and post-survey for all SL subjects

The seminar began with an introduction of the background and content of the pre- and post-experience survey for SL subjects by Dr Grace Ngai, head of SLLO. Following that, Dr K. P. Kwan, Professional Project Fellow, walked audience through all five sections of the Report and articulated their significances in helping teachers to enhance their subjects one by one. The sections are:

• the total number of survey respondents and response rate, which are directly proportional to the reliability of the ensuing analysis;

• the comparison of students' self-assessment of their learnings in the domains of "knowledge application", "problem solving", "empathy and caring for others", and "social responsibility" before and after taking the SL subjects based on mean scores, which tell the effectiveness of the course in achieving the four common SL outcomes;

• the comparison of the mean differences between the pre and post scores of a SL subject against the PolyU norm, which illustrates the relative strengths and weaknesses of the subject in nurturing the four common SL outcomes among its students;

• the mean and frequency distribution of students' ratings on nine different learning gains from SL upon completing the subject, which help teachers assess students' learning outcomes from a broader perspective;

• the comparison of the mean score of students' ratings on the nine different learning gains from SL upon completing the subject against the PolyU norm, which indicates the strengths and weaknesses of the subject in relation to other SL classes;

• the mean and frequency distribution of students' ratings on their learning experiences of the subject over a 7-point scale, which helps teachers distinguish the "good" from the "less-than good" aspects of students' journey throughout the course.

• the comparison of the mean score of students' ratings on their learning experiences of the subject against the PolyU norm, which shows the strengths and weaknesses of the subject in relation to other SL classes;

• students' written feedback on the subject regarding "the three most important things they have learned", "three challenges they encountered", and "three things that can be improved", which enable teachers to assess students' overall attitude towards the subject.
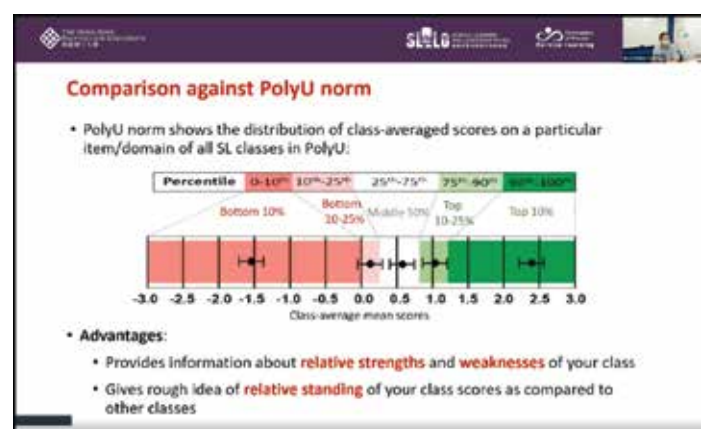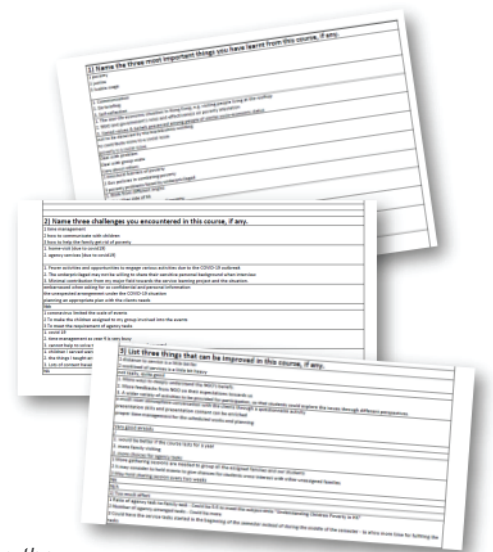

A slide summarising what could be found in a SL Subject Report

The speaker explaining the significance of providing a norm-referenced analysis in the SL Subject Report

A slide providing teachers with tips on making the most of the qualitative data in the Report

To further ensure the effectiveness of the seminar, the speaker attached the relevant segment of an anonymous Report to each part of his explanation and invited the audience to try interpreting the data. The seminar was rounded up with an emphasis that the Report shall serve as a reference for SL teachers to make evidence-based decisions to improve their subjects instead of a tool for judgement. Teachers were also reminded to triangulate analysis from the Report with other sources of evaluation such as students' reflections and feedback from community partners and service recipients to obtain a more holistic view.

To revisit the seminar's video and download the PowerPoint handouts, please check out the links below:

Video Recording:

https://www.polyu.edu.hk/sllo/docdrive/staff/CoP/20210831Video.mp4

Handout:


https://www.polyu.edu.hk/sllo/docdrive/staff/CoP/20210831%20Understanding%20your%20SL%20subject%20report%20v3.pdf

Service-Learning and COVID-19: Briefing and Sharing for LTA Arrangements for Semester 1 AY2021/22

The University has announced the Learning, Teaching and Assessment (LTA) arrangements for Semester 1, AY2021/22 that fellow students and teachers are going to steer classes towards face-to-face and online delivery simultaneously. While the hybrid mode of service-learning (SL) instruction and implementation are essential to keeping us and the community safe, they also bring many complexities, implications (and perhaps opportunities) to the LTA of SL subjects. The SLLO, therefore, organised a special briefing on 20 August 2021 (and a re-run on 23 August) to help SL teachers plan for the best and prepare for the worst.

Two SLLO colleagues shared their experience of supporting and supervising a credit-bearing service project about STEM education carried out in Hong Kong during Semester 3, AY2020/21 in a hybrid setting. They observed that the variation in "hybridity" among the PolyU service teams and the service recipients had created many obstacles to an effective delivery of service outcomes. The fact that the service teams were facing vastly different challenges as a result of the different mixture of on-site/online participants had further increased the difficulty of grading students' service performance.
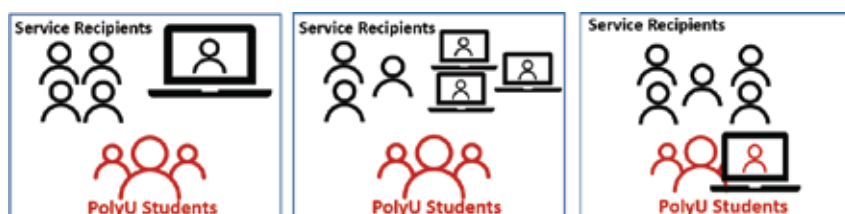
A conceptual image showing the variation in "hybridity" among the service teams

Although we hardly have a silver bullet that makes hybrid services truly sweet and fruitful, there are things could be done before and during the service to minimise its negative impact on the learning of our PolyU students, the experience of the service recipients, and the SL assessment. Here are some food for thought:

Before the Service
• Try your best to separate online service from f2f service

• Make sure all service recipients/PolyU students have access to the same service materials

During the Service
• Let the online service recipients/ PolyU students see and work with different peers onsite – don't turn it into a 1-to-1 tutorial by pairing up the online participant with a designated onsite participant.

• Further ensure PolyU students / service recipients online would not be ignored by:
  - requesting PolyU students to address and resolve the concerns of online/ hybrid service in their service plans
  - having all sessions recorded for grading

Following that, SLLO colleagues also demonstrated how teachers may make use of a virtual learning space customised by the Office to circumvent some of the inconvenience brought by hybrid teaching. Specifically, the virtual learning space is facilitated by Gather – a platform that supports remote online gathering that highly resembles the experience of those conducted in the physical setting through cutting-edge video chat technology and a customisable, gamified collaboration space. The SLLO had made use of Gather (https://www.polyu.edu.hk/sllo/expo/) to curate their first International Symposium and Expo on Service-Learning and Socially Responsible Global Citizenship in July 2021 with a surge of positive feedback. Building on the momentum of the eSymposium and virtual Expo, the Office has renovated part of the exhibition area into two special classrooms, SL01 and SL02 that address the needs of hybrid instruction.

For enquiry and booking of the virtual classroom SL01 & SL02, please go to: https://forms.office.com/r/wYaXWHNE5h

A picture collage showing the special classrooms developed by the SLLO on Gather from different angles

Other useful links:

Arrangements for Learning, Teaching and Assessment for Semester One of 2021/22 (by Academic Registry):

FAQs on Service-Learning subjects in the time of COVID-19 pandemic (by SLLO):