SLLO NEWSLETTER

SEPT 2022

Highlights

01

World Youth A.I. Object Recognition Programming Workshop cum Competition

02

One World Our World 2022

03

Habitat Green's Rwanda Service

04

Teacher Development Course 2022

01 Make My Eyes:

World Youth A.I. Object Recognition Programming Workshop cum Competition

As you read along, try one of the following tasks on your own:

In a supermarket, identify the favourite flavor of your favourite cup/instant noodle

Sort a pack of assorted candies by their flavours

Count the number of emojis in the last text message you sent

We are not surprised if you found the task a cakewalk. And therefore, you are now invited to try that again with your eyes closed.

How hard can it be if you had to identify objects without vision, especially when the objects cannot be distinguished by their size, shape, weight, and smell?

What about the intangible objects that we conceivably could not live without nowadays, ranging from subtle emojis to the coloured lines on a Rapid Antigen Test kit for COVID-19?

These are exactly the questions that some 430 students living in Hong Kong, India, the Philippines, and South Africa were trying to answer as they participated in **Make My Eyes: World Youth A.I. Object Recognition Programming Workshop cum Competition** – an immersive learning experience that brought the concepts of visual impairment, machine-learning, and computer programming into an innovative intersection. **Jointly developed by Service-Learning and Leadership Office (SLLO) and the Department of Computing in AY2021/22 Semester 3,** this project engaged PolyU students enrolled in the subject, **COMP2S01S Technology Beyond Borders: Service Learning across Cultural, Ethnic and Community Lines** to transfer knowledge to youngsters aged 10-21 from within and beyond Hong Kong.

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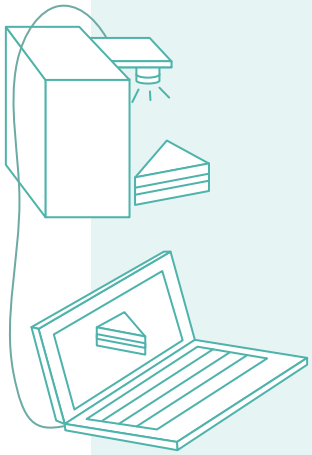
In the Workshop, PolyU students first familiarised learners with the key theories, trend, and issues related to artificial intelligence, machine-learning, object recognition technology and block programming through interactive activities. In the process, learners were guided to consolidate their learnings through preparing for a concluding Competition. With the theme of "visual impairment and accessibility", learners in small teams were challenged to complete a series of object recognition tasks blindfold with the help of their D.I.Y. object recognition system under the guidance of assigned PolyU student-coaches and local volunteers.



A D.I.Y object scanning device equipped with a detachable webcam

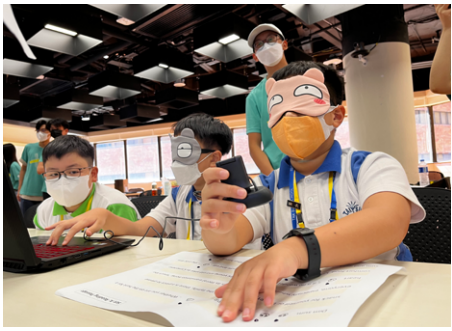
A computer programme that performs A.I. object recognition developed using a handful of free online software

A group of South African township learners tackling the challenge about identifying instant noodle.

Being given a set of five instant noodles of the same brand, shape, size, and weight but in different flavours, the blindfolded player needs to identify the right flavour AS FAST AS possible using their object recognition system.

A group of Indian students tackling the challenge about sorting lollipops.

Being given a bag of lollipops with mixed flavours, the blindfolded player must sort AS MANY lollipops as possible by placing them into four different containers using their object recognition system within 2 minutes.



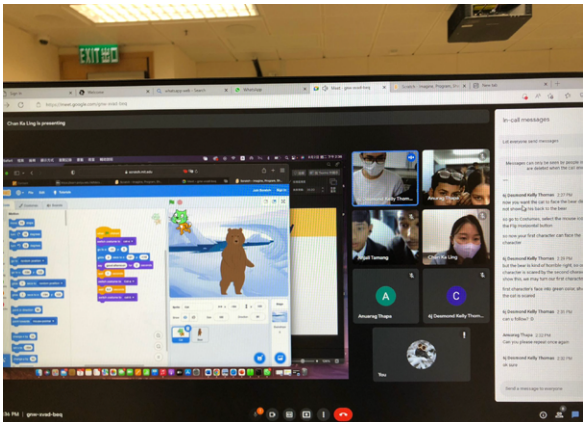
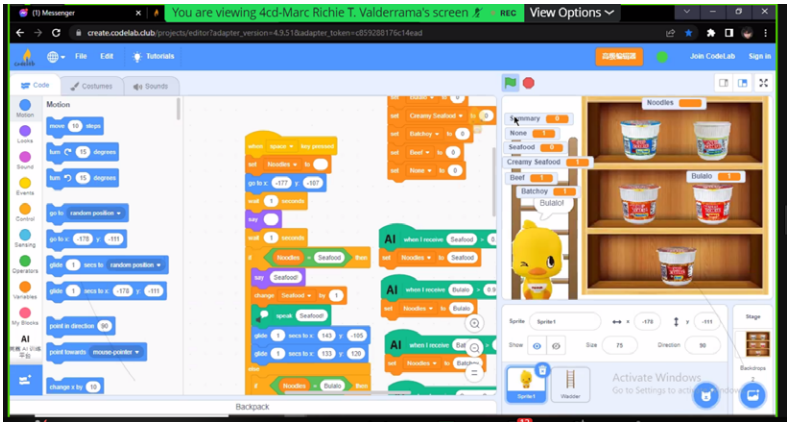
A group of Hong Kong students tackling the challenge about reading emojis.

Blindfolded players work together to "read" the emojis of a passage that mimics tactile using their object recognition system then answer 10 multiple-choice questions.

Altogether, 140 PolyU students had delivered the fun and fruitful learning experience to over 280 learners face-to-face or online, thanks to the genuine support from the following participating and collaborating units (in alphabetical order):

- Ateneo De Manila University
- Camarines Sur National High School (Naga City)
- Pathways to Higher Education
- Salesian College (Siliguri & Sonada)
- Sir Ellis Kadoorie (Sookunpo) Primary School
- Tak Sun School
- Township students in South Africa (coordinated by University of Pretoria)
- High school students in the Philippines coordinated by University of Santo Thomas

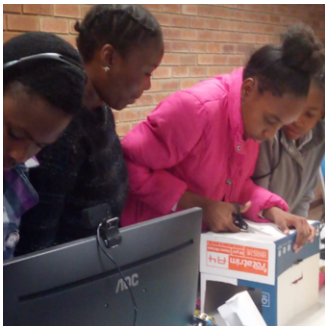


Leaners in the Philippines, India, and South Africa learning to programme the object recognition system via online meeting tools.



PolyU students delivering online workshops for overseas learners in small team


Learners participating in different workshop activities about visual impairment and programming customised by PolyU students

By the time you read this, all teams had completed the competition that tested the effectiveness of their object recognition systems in tackling the blindfold challenges **Among the 80 competing teams, we send our warmest congratulation to the those who made it into the top 10 with their excellent performance.**

Top 10 Performers (Global Category)

Ranking	Location (Participating Unit)	Team
Champion	The Philippines **High school students coordinated by University of Santo Thomas**	Danielle Sta.Rosa Laetitia Alessandra David Louise Randell-so R. Fabico
1st Runner up	The Philippines **Camarines Sur National High School**	Padayao, dankhel Nicho Vince, Lian Ros Caceres, Diane Cana Flores, John Benedict
2nd Runner up	India **Salesian College - Siliguri**	Biraj Nag Bhumi More Khushi Sangwan Sahil Kumar Jha
2nd Runner up	The Philippines **Camarines Sur National High School**	Remoquillo, Emmanuel Mari Acabado, Maxene Carino, Jhovanni Labor, Trisha Mae T.
4th	India **Salesian College - Sonada**	Samten Dolma Sherpa Arbin Tamang Anmol Rai Sonam Sherpa
5th	The Philippines **Camarines Sur National High School**	France, Christian Essen Mendoza Botor, Johenes III Credo, Manresa Gillie Bejerano, RHey
6th	India **Salesian College - Siliguri**	Kaushar Mitra Arunima Basu Ahona Ghosh Archishman Thakur
7th	India **Salesian College - Siliguri**	Sristi Pal Akshat Kumar A. Mrithika Pragnya Saha
8th	Hong Kong **Tak Sun School**	歐頌希 周承軒 賴偉軒
9th	**South Africa Township Learners**	Maluleka Khensane Mbali Maluleke Karabo Sikhonsana Khensani Mokwana Khomotso
9th	The Philippines **High school students coordinated by University of Santo Thomas**	Zyro C. Gonzales Juliana Corrales Tashannah H. Doller
10th	Hong Kong **Tak Sun School**	賴昉言 林韋樂 李聿熹

Design Award

We have also set up the **Design Award** to recognise learners' efforts in making their **A.I. object recognition system** functional and visually appealing. The Judging Panel selected the best design according to **usefulness and usability** based on the 2-minute video showcasing the lollipop sorting system submitted by each team. Again, congratulations to the winners.

Ranking	Location (Participating Unit)	Team	Video
Champion	India **Salesian College - Siliguri**	Sristi Pal Akshat Kumar A. Mrithika Pragnya Saha	https://youtu.be/3wVouo5oe5c
1st Runner up	Hong Kong **Tak Sun School**	李卓軒 李立言 汗載恩	https://youtu.be/ZR9gY8LI_6c
2nd Runner up	India **Salesian College - Siliguri**	Priya Raj Sanvi Agarwal Nimisha Biyani Debasmita Basak	https://youtu.be/u69piQnVhG8

For more details, please visit:
https://www.polyu.edu.hk/sllo/programmes-and-events-calendar/make-my-eyes---world-youth-ai-object-recognition-programming-competition/

A group photo of learners from Sir Ellis Kadoorie (Sookunpo) Primary School

A group photo of Indian leaners with their student-volunteers from Salesian College Siliguri Campus

A group photo of learners from Tak Sun School

Words from learners

I like making our own scanning system with Teachable Machine and the sound effects with Scratch. I'm more interested in computers & technology.

13 Years Old, **Township learner in South Africa**

Seeing the actual programming work being accomplished and learning about its effects to mankind is fulfilling.

21 Years Old, **Student from Pathways to Higher Education**

My favourite part of the workshop is learning how to program while having liberty to be creative.

16 Years Old, **Camarines Sur National High School**

The lessons that we got and learned was very crucial for us. It shows us the other side of programming and AI. It made a difference in our learning that we know we can apply in the future and knowing it can help a lot of people.

16 Years Old, **Camarines Sur National High School**

Learning more about AI gives me more understanding about its capability and its purpose. The trainers are so reliable and very considerate. I also enjoyed seeing photos of Alice Hui[1]

17 Years Old, **Camarines Sur National High School**

Everything was fun especially when we're doing activities like coding and using the Teachable Machine for scanning objects. Our tutors are also very nice and fun people. They do not make the workshop boring and they are very friendly.

17 Years Old, **Camarines Sur National High School**

My favorite part of the workshop was learning how to use Scratch again. Our teachers were very kind and patient with us. Moreover, I like the goal of this workshop. I hope to attend more workshops like it.

16 Years Old, **High school student from University of Santo Thomas**

My favourite is the part where we used Scratch and Teachable Machine to recognise objects. it is because it was something new and interesting which could be used to do something which isn't possible in normal circumstances for the visually impaired.

14 Years Old, **High school student from Salesian College**

My favorite part of this workshop was working with the PolyU students as they were our mentor and also guiding the learners from different schools to get familiar with this workshop. Another best part was getting to know about their culture and yes, I will never forget their famous mid-autumn mooncake. The calmness and the patience that PolyU students got is splendid.

21 Years Old, **Student-volunteer from Salesian College**

[1] A female idol in Hong Kong.

Words from PolyU student-coaches

We put effort in teaching the South African students the concept of machine learning, AI, data bias and so on. Although we could not go very detailed into these fields, I believe these knowledge at least can be a stepping stone to their future exploration on technology.

Department of Health Technology and Informatics

As a physiotherapist-to-be, I learn to hide my negative emotion [from my service recipients] even though I was so exhausted and frustrated because my students were trying to learn and paying effort. I will one day instruct my patients, mostly elderly patients, to undergo rehabilitation. Some complex rehabilitation procedures may require more time and patience than teaching students Scratch. It is therefore crucial not to convey any negative emotions as the patients also do not want to be injured and undergo rehabilitation. Showing I am exhausted will hurt their feelings and corrode their self-esteem, even making them less willing to rehabilitate.

Department of Rehabilitation Science

What surprised me is that, despite all the difficulties, the students in India still made their best effort to learn. If the campus network was not working, they will share a phone together to attend the workshop. If the poor network affected the teachers' audio, they would ask the teachers to type in the chat box. If the network was disconnected and they failed to join the meeting room, they would test and debug the program on their own and report their findings after the network becomes stable. Their learning attitude was not task-oriented, but knowledge-oriented. This learning attitude reinforced our relationship and formed a two-way relationship where I could be their teacher for technical knowledge, and they my teacher for learning attitude.

Department of Marketing

One of the learning outcomes of our service was raising students' social awareness of the difficulties and digital barriers faced by the visually impaired population. When designing their scanning box, for example, they were reminded to have a VI-friendly design. It turned out that they fully understand the importance of empathetic design. They created a circular ring structure in their box to assist the VI people in locating the objects to be recognised. I believe that if students, as the future pillars of society were made aware of the difficulties faced by the needed, they will be able to start changing the society.

Department of Health Technology and Informatics

I watched the recorded lesson video at night and opened my own Zoom to practice my delivery skills especially my intonation and gestures. I hope I could deliver the content energetically and gain learners' attention. From this experience, I could see myself trying to perfect every detail in order to present the content clearly to my learners. My desire to improve my speaking will be helpful when I become a physiotherapist. Before meeting my patients, I will practice more on how to professionally explain the treatment process to my patients.

Department of Rehabilitation Science

My service recipients have had the assumption that Machine Learning is a highly technical field and only applicable to those who study Computer Science. Over the course of our workshop, I'm happy to see how students have changed their mindset [about Machine Learning] from "Can I?" to "How do I?", leading to more self-confidence and curiosity taking greater precedence within them than their fear and doubts.

Department of Computing

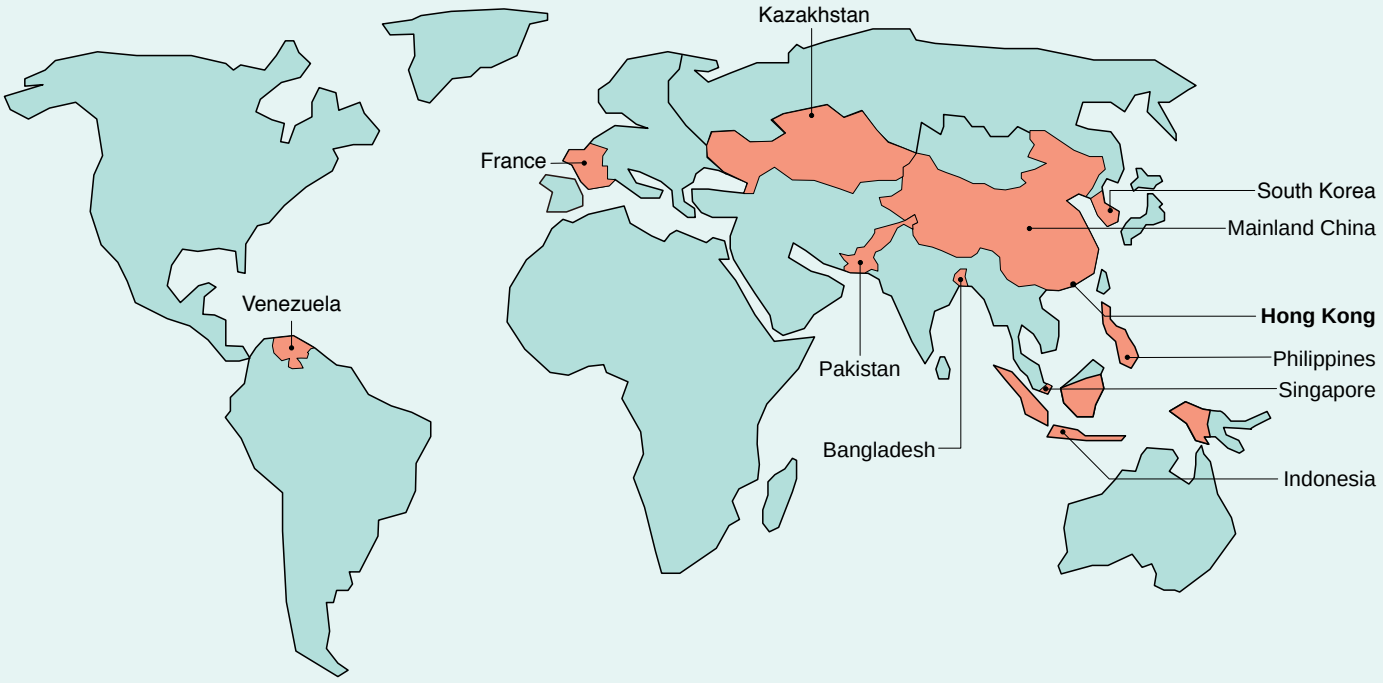
02

One World Our World 2022

LARGC Leadership Academy for Responsible Global Citizenship | One Our World

One World Our World (OWOW) is a programme launched by SLLO under the Leadership Academy for Responsible Global Citizenship (LARGC) since 2021. It seeks to promote global citizenship and leadership development for PolyU students with cross-cultural and boundary-crossing components. The second run of this programme was successfully completed on 13 July 2022 with the theme of "Good Health and Well-being".

This Summer, OWOW connected 87 students from different locations, including Hong Kong, Mainland China, Bangladesh, Philippines, Indonesia, Kazakhstan, Venezuela, Singapore, South Korea, France and Pakistan.



Participants enrolled in one of the four service-learning subjects below to learn about the challenges faced by their distinctive target communities and address the respective social issues in multicultural teams:

BSE3S03
Living Environment for Low-income Communities

The subject offered by the Department of Building Environment and Energy Engineering engaged students to assess the indoor living environment of refugees in Hong Kong and provide affordable solutions through field visits. Specifically, students taught the service recipients who are mostly living in subdivided flats the ways to measure indoor-environmental variables with simple tools. They then design sustainable solutions together to improve the overall indoor environmental quality of their apartments.

A student assessing the indoor environmental quality in a service recipient's apartment

COMP2S01S
Technology Beyond Borders: Service Learning across Cultural, Ethnic and Community Lines

Offered by the Department of Computing, students worked in groups to apply their AI and programming knowledge to design and develop digital learning packages for moderately and severely mentally handicapped children. Students from different locations transferred knowledge to the children via Zoom. The service recipients and parents experienced how the new technology from these service projects helped enrich their everyday life. In the process of designing the learning package, PolyU students kept communicating with the teachers from special schools to adjust the content based on the needs of the children.

ITC2S02
Community Engagement through Expressive Textile Arts and Fashion

In this subject offered by the School of Fashion & Textiles, students teamed up with teenagers from vulnerable and challenging backgrounds, and members of The Hong Kong Federation of Youth Groups (HKFYG) to co-design expressive textile artwork. The artworks encouraged service recipients to unleash their creative potential and enhance self-confidence.

Students making fashion items

Students walking-through a service recipient over the key points about eye care at the education booth

SO2S01S
Learning through Providing Eye Care and Vision Health to the Community

This subject from the School of Optometry entrusted students to transfer the knowledge of eye care and skills of vision assessment to members from Christian Action – Centre for Refugees in two-fold. An education booth was set up at the Centre where students distributed and explain tailor-made leaflets printed with eye care tips to the service recipients. In parallel, the students also organised a two-day workshop to empower the members as eye-care ambassadors who can share information with their peers on how to access eyes care services in Hong Kong when needed.

Going in parallel with the service projects, SLLO organised a series of learning activities to develop students' leadership competences. They included an open lecture on Global Citizenship and Global Ethic by Prof. Leung Mei Yee, a former director of University General Education of The Chinese University of Hong Kong, a leadership workshop to help students identify their own leadership styles, a diversity workshop on connecting people with diverse backgrounds, several themed community visits on human trafficking, domestic helpers, refugee, ethnic minorities and Africans in Hong Kong, a closing remark by Prof. Angelina Yuen that centred on the importance of self-reflection and team collaboration.

Open Lecture by Prof. Leung Mei Yee entitled "Global Citizenship and Global Ethic"

Students interacted with All Black Football Club Hong Kong to understand their daily life, needs, and challenges.

A visit to Ping Shan Mosque to understand the religious and Islam culture in Hong Kong

Group photo of OWOW 2022 (start from left): Dr Chi Wai Do, Associate Professor of School of Optometry; Dr Lily Chan, Clinical Associate of School of Optometry; Dr Grace Ngai, Head of Service-Learning and Leadership Office and Associate Professor of Department of Computing; Professor Angeline Yuen, Honorary Professor, Department of Applied Social Sciences, and former Vice-President of PolyU; Dr Jin Lam, Assistant Professor of School of Fashion and Textiles; Dr Peter Ng, Senior Teaching Fellow of Department of Computing.

03

Habitat Green in East Africa Goes to Rwanda (at Last)!

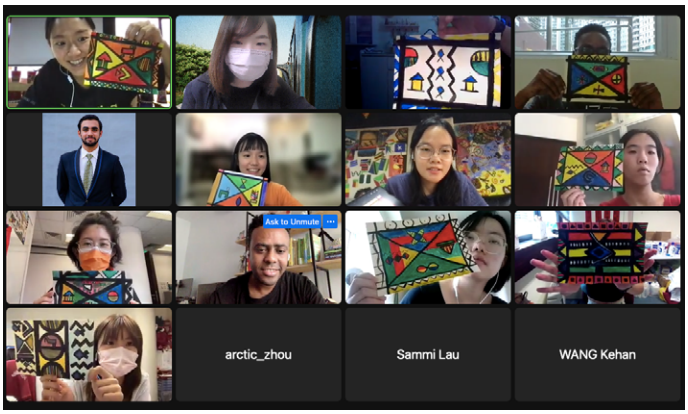
"No matter what happens, as long as you keep a positive mindset and a can-do attitude, the day will go on much smoother. Be the one to stand up to the challenge, be the one to correct mistakes if any are made. Never stop reminding yourself that we are here not just to do a job or fulfill a target, we are here to serve and to learn."

Said Dr Stephen Chan on a bumpy ride, he calmed a group of anxious PolyU students who were on the way to deploy individual solar systems with LED lighting and radio to rural households in the district of Rwamagana, Rwanda. The team embarked on their journey into this knowingly unknown as they enrolled in the Service-Learning subjects, COMP3S02 Socially Responsible Global Leadership in a Digital World and EE2S01 Low-cost Energy Infrastructures for Developing Regions in AY2021/22.

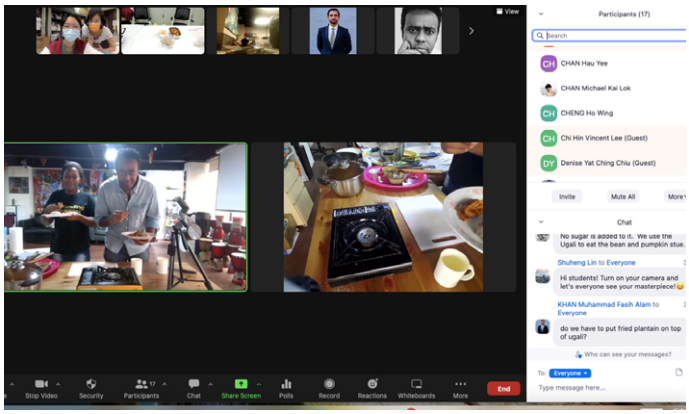
The service team passing through scattered houses on a hilly terrain to visit the service site

As a part of **Habitat Green in East Africa** – a SLLO programme that nurtures students' global leadership and cultural sensitivity in the context of cross-disciplinary green engineering – a total of 34 PolyU students taking the two subjects spent two semesters to learn about and design sustainable energy solutions for low-income families in rural Africa. The programme offered an array of activities for participants to learn and serve over the timespan of a year.

It started with students of various majors dedicating a semester to learning the key concepts of engineering and construction in lectures. Following that was a three-week laboratory session that got their hands skillful in prototyping, assembling, testing and packing the solar system for shipment to Rwanda. Supplementary to the theoretical and hands-on trainings, SLLO also organised a series of cultural activities to immerse participants into the everyday life of their service recipients. All the activities were carefully curated with an ultimate goal to better support students in building empathy for the service beneficiaries prior to their travel. These include an online live tour of Kigali, the capital of Rwanda, a movie screening to learn about the history of genocide in the country, a cooking workshop to get a taste of African cuisine, and an art workshop to create their own Ndebele painting.



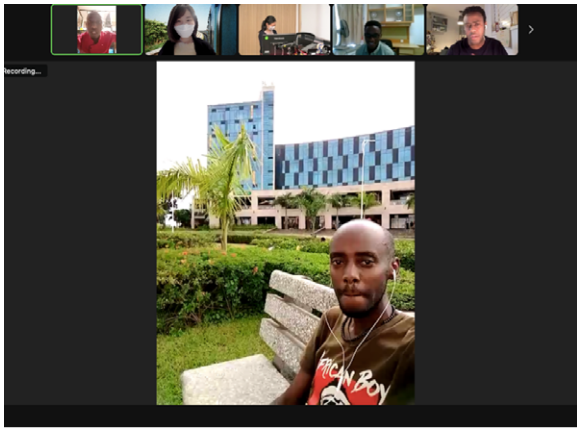
A group photo taken from the African Art Workshop



Staff of Africa Center Hong Kong conducting a synchronous online cooking class for PolyU students to offer a taste of Rwanda.

Despite the comprehensive preparation at PolyU, delivering the service in person on the foreign soil was no easy feat. In the ten-day service which covered our students training 27 local youths on installing the solar system as well as tailoring this system to different household's needs, the students not only had to overcome language barriers, but also the less-than-ideal working conditions like commuting on rocky roads and high temperature. While the process was both mental and physical, it was all worth it when the students and local youths successfully brought light to 200 households.

The team were grateful to see how every installation had ended with big smiles on the villagers' faces when they lit their house with electricity for the first time in life; when they knew their children could finally revise homework after nightfall; when they knew they could stay connected with the world beyond their village at a switch of a button on their rechargeable radio.



A volunteer in Rwanda giving an online city tour for PolyU students before their trip

PolyU students teaching youths in Rwanda how to assemble and debug the solar system

Dr. Stephen Chan briefing PolyU students and Rwanda youths on the first day of service

PolyU students doing the indoor wiring in one of the households.

It was a pity that not all PolyU participants were able to deliver the service onsite due to the pandemic. In fact, the service trip itself had also been a long time coming.

Scheduled to deliver the service in Rwanda back in 2020, the onsite service was forced to be put online when international travel was brought to a sudden halt by COVID-19. In spite of the unprecedented challenge, the concerted effort and creative passion of the instructors, the students, and community partners had realised the service in the form of a tele-engineering project. PolyU students had successfully trained youths in Rwanda to install their tailor-made energy system for 150 families in Summer 2021 remotely with the support of video conferencing tools.

Looking forward to 2023, with the resumption of international service-learning projects, we are excited for the next cohort of students to continue the work and commitment by all those before them, and foremost, to continue applying what they learn to illuminate the lives of those in need.

TELE-ENGINEERING IN RWANDA

POLYU

PACKING

1

2

PREPARATION AT POLYU

Students and professors design, test and simplify the systems. The design is intentionally kept simple and robust as we will not be installing them ourselves. The frames for the panels are built with water pipes which can be easily obtained locally. Main electrical wires are soldered before flat-packing and shipping.

3

POLYU TO RWANDA

OVER 2 TONS OF MATERIALS WERE SHIPPED

>2 TONS

7-DAY FLIGHT

Solar panel x 150	5W LED light x 300	Indoor Wire x 3125m	2.5mm Connector x 450
Charging controller x 150	Switch x 450	Outdoor Wire x 975m	MC4 Connector x 150
12W LED light x 150	Radio x 150	Crocodile Clip x 300	

KIGALI INTERNATIONAL AIRPORT

POLYU TO RWANDA

4

CLEARANCE: 12 WORKING DAYS (due to lockdown)

SOLAR SYSTEM PROJECT

Solar panels, together with wiring for LED lighting, phone chargers, and a radio were installed in each household.

"ROCKET" STOVES PROJECT

"Rocket" stoves are much more efficient, cleaner and healthier. People spend less time looking for fuel, cut down less trees for wood and breathe in less particulates when they cook.

REASON WHY WE CHOSE RWAMANGANA

Our NGO partner, AEE Rwanda, runs a vocational school called the Center for Champions, located in Rwamagana. The school teaches practical skills including basic electrical technology and bricklaying, which will be helpful to our project.

CENTRE FOR CHAMPIONS AEE

LOCAL PARTNER

African Evangelistic Enterprise (AEE) Rwanda has a long track record of poverty alleviation throughout the country, and a long working relationship with PolyU. They assigned a top administrator to manage the project, located a suitable village, negotiated with the local leaders, and recruited many local young volunteers.

TO RWAMAGANA

5

LOCALLY PURCHASED MATERIALS

Some materials have to be purchased locally. Rechargeable batteries for electricity storage and the radios cannot be shipped by air cargo for safety reasons. Bricks and other consumables are plentiful locally. The use of local materials helps to sustain the project and local businesses.

6

TRAIN THE TRAINER

PolyU students trained the AEE team leaders and the local youths from Centre for Champions on the operations of the projects, through Zoom and Whatsapp under severe restrictions of the low bandwidth and unstable network service.

7

8

150

THIS YEAR, WE INSTALLED SOLAR PANELS, TOGETHER WITH WIRING FOR LED LIGHTING, PHONE CHARGERS, RADIOS AND ROCKET STOVES FOR 150 HOUSEHOLDS IN A VILLAGE IN RWAMAGANA DISTRICT.

04

Teacher Development Course 2022

PolyU has made service-learning (SL) part of its core curriculum since 2012. The University has catered for almost 4500 students every year to serve in Hong Kong, Mainland China, Taiwan, and other countries like Rwanda, Cambodia, Vietnam, Indonesia and the Philippines since then.

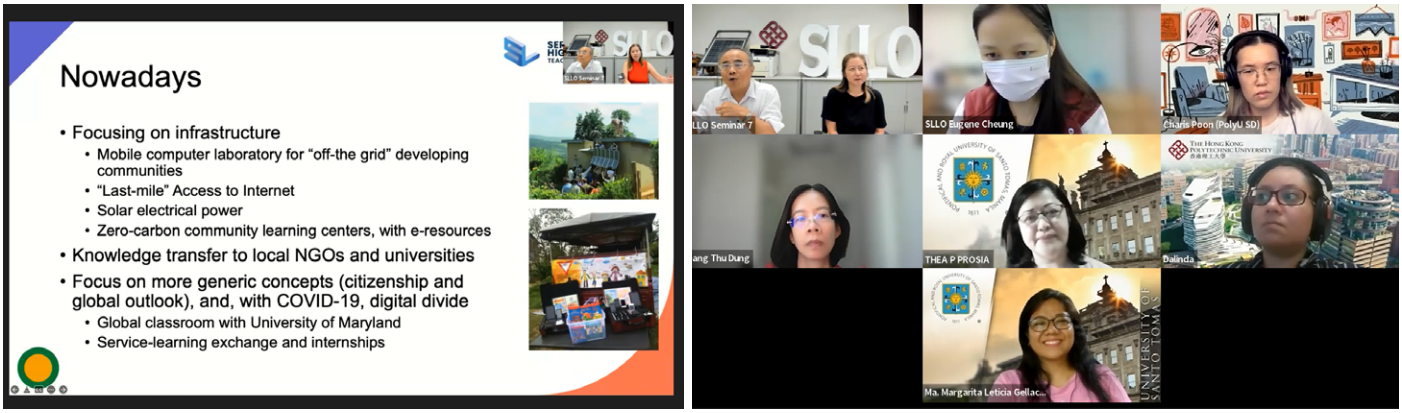
That said, teachers who are passionate about the increasingly popular pedagogy still, may easily confuse it with community service and volunteerism. It is also not uncommon for new course designers to struggle with turning their ideas into impactful SL subjects that address the needs of both the students and the targeted social community coupled with a professional assessment system. To this end, SLLO organised the Teacher Development Course in June-July 2022 to connect like-minded peers and build capacity for its ever-growing SL learning community.

This year, the course was structured into three phases. It began with 15 hours of self-directed online learning that gave participants an idea of what SL is, how it could be done and its impacts on learners and the society. The participants were given access to the Massive Open Online Course (MOOC) developed by the SLLO since 2021. Following that, they were invited to attend four online lectures facilitated by Dr Grace Ngai, Head of the Service-Learning and Leadership Office & Associate Professor of the Department of Computing and Dr Stephen Chan, Consultant of the Service-Learning and Leadership Office to reinforce the key concepts.

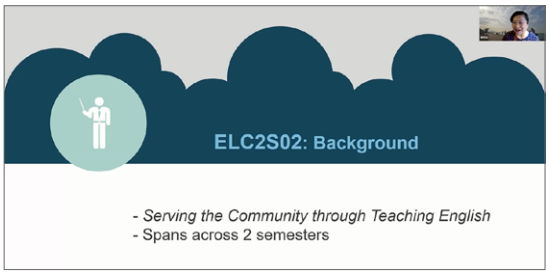
In the last phase, the participants were offered a series of experiential and observational learning to gain insights through immersing in some well-established SL subjects/ programmes implemented by PolyU. The learning opportunities included watching how students delivered online SL projects through live-streaming and having immediate Q&As with the corresponding subject teachers and community partners.

Altogether, there were 43 participants coming from institutions and NGOs from Hong Kong, Macau, mainland China, the Philippines, India, and Vietnam joining the course. The good mix of discipline and institution sparkled many dynamics and insights in discussion panels and group exercises.

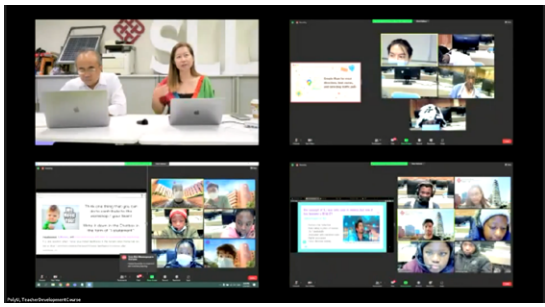
The Course was positively reviewed by the participants. 96% of them considered the MOOC “useful” for the starters. 89% of the participants thought the panel sessions by the SL teachers, the NGO partners, and the school partners effective in consolidating their learnings. Keep an eye on our next training cohort. We look forward to meeting you soon!



Screenshot of an online lecture in Phase 2 of the Course



Four SL teachers from different disciplines shared their experience on planning and delivering SL subjects



Participants observing how PolyU students implemented their service projects online in real-time