Project Title :	Student Innovation for Global Health Technology (SIGHT)
Leading University :	The Hong Kong University of Science and Technology
Participating UGC-funded University(ies) :	The Chinese University of Hong Kong
Project Leader(s) :	Professor CHAU Ying, Associate Professor, Department of Chemical and Biological Engineering, School of Engineering, The Hong Kong University of Science and Technology

Summary of Proposal

Student Innovation for Global Health Technology (SIGHT) is proposed as an interdisciplinary, cross-institutional (HKUST and Medical Faculty of CUHK) undergraduate education platform to motivate, engage and deploy student innovations. With the motto "Simple Technology, Big Difference", SIGHT challenges students to create and implement solutions against a broad range of healthcare problems for resource-limited communities. Methodologies in design thinking are used to empower students not only to brainstorm ideas but also to deliver user-centered solutions. Students are engaged in activities to understand the needs of users, continuous prototyping and repeated testing, with the aim of allowing students to transform a creative idea into a solution with genuine impact. Through long-term partnerships with NGOs and government units, students deploy the innovations to communities in Hong Kong, Mainland China, and Southeast Asia. This provides a strong impetus for students to commit in the innovation process.

Founded on the successful pilot experiences since 2014 at HKUST, we propose that the platform will combine a semester-long design thinking training (SIGHT camp), credit-bearing coursework for the generation of functional prototype and project implementation, as well as study trips for on-site field-testing and deployment of student innovations. Based on the fruitful experience of past collaboration, we propose to expand the platform of SIGHT to include students from HKUST and the Medical School of CUHK. The collaboration provides an opportunity to tailor the pedagogy for delivery to a different group of students. Clinical perspectives from CUHK complement

the existing strengths of HKUST in science, engineering and business, further injecting energy for radical collaboration emphasized by design thinking, and with particular relevance for the design and deployment of medical technology. Through the collaboration, we also anticipate an increase in the impact made by SIGHT students on the society, as they will gain more opportunities to outreach different communities with student-driven innovations.

We will collect feedback from students, faculty and partnering Non-Governmental Organisations/government units to evaluate the success of this pedagogy to nurture student innovations. We believe that the real implementation of student innovations for helping communities in need will lend strong support. The teaching and learning experience from SIGHT will be disseminated via conferences, exhibits, workshops, and online sharing of education modules developed for SIGHT students.

Summary of Final Report

Student Innovation for Global Health Technology (SIGHT) is an interdisciplinary and cross-cultural undergraduate education platform to motivate, engage and deploy student innovations, founded on the successful pilot experiences in 2014 at HKUST. Through the UGC Funding Scheme for Teaching and Learning Related Proposals (2016-19 Triennium), SIGHT successfully launched the program both at HKUST and the medical faculty at CUHK.

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The collaboration between HKUST and CUHK Medical School provided an opportunity to tailor the pedagogy for delivery to a different group of students. Clinical perspectives from CUHK complemented the existing strengths of HKUST in science, engineering and business, further injecting energy for radical collaboration emphasized by design thinking, and with particular relevance for the design and deployment of

medical technology. Through this collaboration, the SIGHT program was augmented with new expertise and brought further breadth to projects. Students are empowered not just to leverage their own strengths, but also that of their peers, to work towards the common goal of delivering tangible impact to neglected communities.

In four years, through five iterations of SIGHT Camp, five final year projects, along with ENGG4930 and ENGG1300, well over 200 students have gone through the SIGHT experience of design thinking, integrative learning and experiential learning. This crop of students went on to pioneer 22 projects tackling health related problems both locally and internationally, from mobile clinics in Africa to the training of eye surgeons here in Hong Kong.

The Teaching Team believes that students are naturally innovative, so the educators' role is to cultivate an environment conducive to unleashing the potential of students as change-makers. We have drawn the essences from multiple pedagogical approaches: experiential learning, design thinking and integrative learning, and believe in the power of impact creation for bringing the best out of students. The SIGHT Team has given careful consideration in designing a sequence of learner-centric co-curricular activities, credit-bearing courses, and study trips to establish an organic, vibrant, and open-minded learning community. We are keen to evoke students' intrinsic motivation, engage students in a non-linear process of innovation, and lead students to channel their innovations to the communities in need.