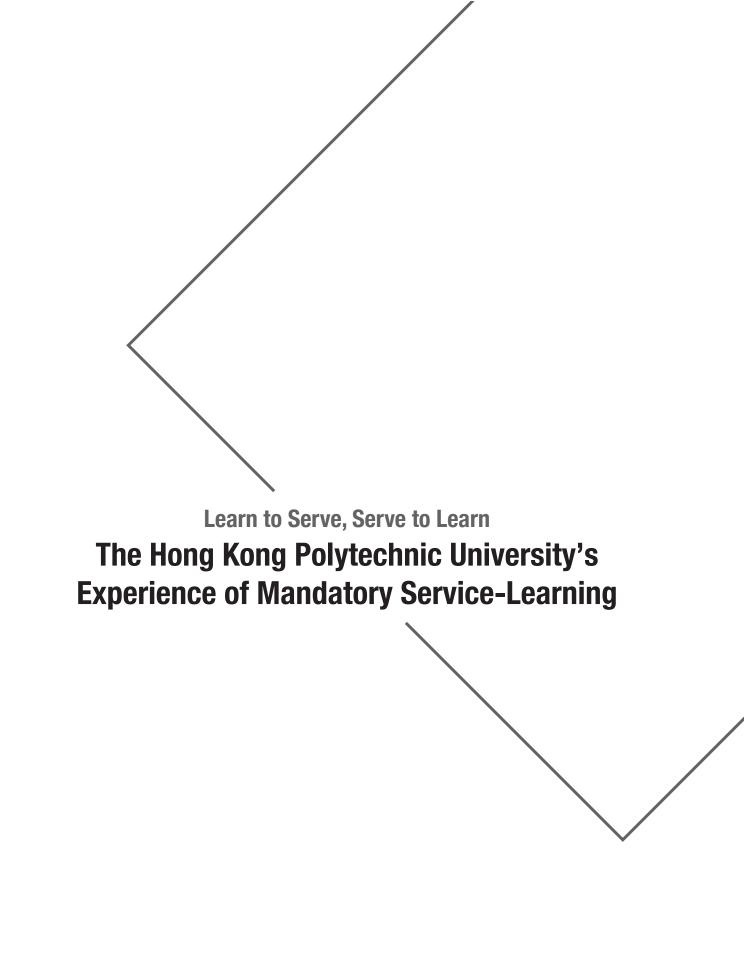
Learn to Serve, Serve to Learn The Hong Kong Polytechnic University's Experience of Mandatory Service-Learning





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Office of Service-Learning The Hong Kong Polytechnic University



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## Preface

Prof. Timothy W. Tong President, The Hong Kong Polytechnic University



At The Hong Kong Polytechnic University (PolyU), we not only prepare our students for success in their chosen professions, but also help them become socially responsible global citizens. We want them to care about societal needs and to make use of their knowledge to improve the quality of life for the less fortunate.

Based on our own experience and that of elsewhere, we strongly believe that Service-Learning can be an effective pedagogy for social engagement and whole-person development. Hence, as part of the four-year university curriculum launched in Hong Kong in 2012, PolyU is the first local university to require all undergraduate students to complete a credit-bearing Service-Learning subject, offering them the opportunity to undergo a rewarding and perhaps life-changing experience.

This was indeed a very courageous undertaking at that time. While we had thousands of students taking the subject, we had just a small team of staff who had the relevant experience to devise and develop it. However, their passion and commitment has moved many colleagues to join this worthy initiative and develop it further with their own expertise and ideas. Gradually the subject has gained momentum and the Service-Learning community has expanded greatly.

Having received an enthusiastic response from students, our colleagues are further motivated to develop more projects that are innovative, relevant and worthwhile. With appropriate policy and infrastructural support provided by PolyU management and generous financial support for equipment, travelling and other expenses from alumni and donors, the initiative has quickly expanded. Sooner than expected, our students are serving not only the needs of the local community, but also those in other parts of the world, as far afield as Rwanda, helping to lighten the burden of others and cheer the desperate.

I joined colleagues and students in their Service-Learning endeavours in Hong Kong and Cambodia, and was truly impressed by their fervor and how they touched the hearts of those they served. I even met some students who, after having fulfilled their Service-Learning requirement, went back to Cambodia to conduct their own projects. I am delighted to see that many of our young people have adopted a positive, constructive outlook on life, and I am confident that our new education model is heading in the right direction.

In 2016, we achieved the first major milestone, seeing the first cohort of graduates who have all completed their academic Service-Learning subject in the new University curriculum. To a certain extent they have all been transformed by the experience of serving to learn and learning to serve. Certainly there is still much work to do to truly make community engagement a hallmark and a core value of our University. Nevertheless, we have already built up a critical mass of staff and students who heartily embrace Service-Learning.

Their dedication and contribution are exemplary, and I am very proud of them. This book is their story.

## Part One

## The Challenge & the Structure

Dr Stephen C.F. Chan, Head, Office of Service-Learning

Dr Grace Ngai, Associate Professor, Department of Computing & Associate Head, Office of Service-Learning Prof. Daniel T.L. Shek, Associate Vice President (Undergraduate Programme) Prof. Walter Yuen, Professor Emeritus, University of California – Santa Barbara

> Service-learning (SL) is increasingly recognized as an effective pedagogy for educating students to become socially responsible citizens. Many universities over the world have hence incorporated SL in their academic undergraduate programmes to varying degrees and in a variety of forms. At The Hong Kong Polytechnic University, all undergraduate students are required to take at least one credit-bearing SL subject starting from 2012. Each SL subject is designed to include three components: purpose-designed academic teaching, challenging, meaningful and demanding service, as well as structured reflection and assessment. In the 2016/17 academic year, about 4,500 full-time undergraduate students enrol in more than 60 subjects offered by a wide range of academic departments across the University. The subjects cover topics such as digital divide, learning difficulties, engineering design, healthy living environments, optometry, survey and mapping, orthotics, fashion as therapy, and ecotourism, to name just a few. The target beneficiaries are equally diverse: slum dwellers, disabled people, children with HIV, villagers without water nor electricity, new immigrants, mentally ill patients, ethnic minorities, and so on. To date, our students have served in Hong Kong, the Chinese Mainland, Taiwan, Cambodia, Vietnam, Indonesia, Myanmar, Rwanda and Kyrgyzstan. Preliminary results of SL are very encouraging. This book, Learn to Serve, Serve to Learn - The Hong Kong Polytechnic University's Experience of Mandatory Service-Learning, reports on the various aspects of the University's SL programme: the pedagogical design adopted, the strategies used, the challenges encountered, and the experiences gained so far.

## The University's Vision and Challenges

Prior to 2012, the universities in Hong Kong had been offering three-year undergraduate degree programmes to students who were on average 19 years old after having gone through 13 years of formal education. In 2012, there was a rare opportunity for a comprehensive reform in higher education when the undergraduate programmes became four-year programmes. Correspondingly, secondary school education was shortened by one year. One of the purposes of the change is to ensure that "higher education institutions will be in a better position to provide a balanced education to their students, through an integrated 4-year undergraduate programme, that allows for a broader knowledge base to support specialised learning" (Education and Manpower Bureau, 2005, p. 12).

Internationally, increasing emphasis has been put on the role of universities in educating students into socially responsible citizens with a heart to serve the community (e.g. Andrzejewski & Alessio, 1999; Purdue, 2005; Mohamedbhai, 2011; UNESCO, 2009). The Hong Kong Polytechnic University (PolyU)'s Strategic Plan 2012/13 – 2017/18 states that its core business is to "develop all-round graduates with ... social and national responsibility, and ... global outlook ... with responsible citizens ..." To this end, the University has successfully encouraged many students to engage with society through voluntary community service, mostly in the form of non-credit-bearing, co-curricular activities both local and offshore.

Prior to the curriculum changes in 2012, an average of approximately 1,000 students and staff at PolyU engaged in a variety of voluntary community service projects each year, similar to many universities across the world. Many of these projects were organized under the banner of the Community Service Learning Programme (CSLP), managed by the former Student Affairs Office of the University. The University nurtured these projects by a number of means. We encouraged our staff to assist students, taking the role of advisors. We made available a small amount of funding to support students' work, and some staff helped students to apply for additional funding. Each year CSLP gave awards to exemplary projects to recognize their efforts, and to encourage students and staff to engage even more in the community. Over a span of several years, they had carried out a number of outstanding projects.

In one of the exemplary projects, "Assistive Technology Development Initiative", a team of students from the Electronic and Information Engineering Department designed and developed a range of assistive devices to help handicapped students in a special school to use computers. Because many students in the school had difficulties in making precise motions with their hands and fingers, the project team designed oversized buttons to enable these students to interact with computers.

In another project, a team of students from the Department of Computing went to an orphanage/primary school in Gansu three times to install a computer network for the school. They computerized the school library by inserting RFID chips into 1,000 books and created an electronic catalogue and lending system. They ran a number of workshops on using the Internet, robotics, and office automation for the teachers

as well as the children. Finally, they set up a video conferencing system and arranged for a primary school in Hong Kong to provide weekly English lessons to the orphanage.

However, while the Programme encouraged a fairly large number of students to engage in a variety of projects, our staff and students often faced many difficulties. To start with, we sometimes could not carry out or even complete the projects as planned. Students often lost enthusiasm and failed to maintain momentum when distractions appeared or when they were under academic pressure (e.g. during assignment submission and examination periods). In addition, students were generally more interested in the actual provision of service than in the planning and preparation for the service or in following up with needed support. It was therefore difficult for students to take on large scale or technically challenging projects. They were more interested in the "action" parts of the project, and less inclined to take the time to seriously reflect on their experiences. This hindered their learning from the project.

There were also the issues of continuity and sustainability. Students stayed in the University only for four years. During the first year they might not be ready to engage heavily in services. During the final year they might be more focused on graduating and looking for jobs or opportunities of graduate studies. Hence there was effectively only a two-year window in which they were available for services. Every year is a transition year for an SL project, in which new student leaders had to be found and trained. Given these constraints, it was difficult to maintain consistency and to develop long-term projects and collaborative relationships with partners and communities.

As a direct result of these problems, most of the successful projects, especially those that involved the search for long-term solutions for target recipients or communities, were invariably led or supported by academic staff, who provided the contact, continuity and guidance necessary for a successful project. The focus of these projects was typically the service provided to the community, and there was little or no assessment of students' performance; hence the impact of the projects on students was uncertain. There was also little or no in-depth reflection by students; hence little learning. The students found the projects meaningful and fulfilling, but by and large, they could not articulate what made it so meaningful, and what exactly they had learned from the experience.

A key question then was: what could be done to make better use of the service as a way for students to learn? And the reverse question: how could we teach students to provide better service?

The introduction of the new curriculum gave PolyU an opportunity to seriously consider how we could do better to nurture students' intangible qualities of civic responsibility, social justice and ethics. After careful consideration, the University decided to stipulate a Service-Learning Requirement, whereby all undergraduate students are required to successfully complete a three-credit subject with an approved SL component in order to qualify for graduation. On the one hand, SL serves as a pedagogy to educate students on civic responsibility, social justice and ethics. On the other hand, integrating SL into the academic programmes helps us resolve many of the issues encountered in the implementation of projects.

At the time when the SL requirement was proposed, some academic staff were skeptical about SL as an academic pedagogy. Some staff were of the opinion that students should not be given academic credit for doing voluntary work, which arose partly because of the confusion between voluntary work and SL. Some were concerned that science and engineering faculty do not know how to teach community service and engagement, let alone assess student performance in these areas. Some worried that giving students academic credit for service would distort their altruistic motivation in serving the community. Yet others thought students should be given the opportunity to volunteer to serve, rather than compelled to do so. So, to stipulate or not to stipulate the SL requirement? It was not an easy decision. It took many months of painstaking exploration of alternatives and planning, many meetings to discuss arguments for and against, and a final debate at the highest management level of the University, before the stipulation was passed.

Implementing the decision, however, turns out to be even more challenging. Given the size of the student body (2800 students enrolling as first-year students, another 1500 enrolling as advanced standing articulation students), the implementation of SL is a mammoth task. The major challenges include:

- 1. Designing a rigorous academic structure for the development, offering, and quality control of SL subjects.
- 2. Cultivating long-term service projects and collaborative relationships with external collaborators such as non-governmental organizations.
- 3. Building a critical mass of academic staff with the passion and expertise to offer SL subjects.
- 4. Developing a robust mechanism for funding SL subjects and associated projects.

*Learn to Serve, Serve to Learn – The Hong Kong Polytechnic University's Experience of Mandatory Service-Learning* outlines the major challenges we have met, and the institutional strategies we have adopted to address these challenges. The PolyU model is obviously still under development. It is also not necessarily unique. In the development of the institutional strategy, we have carefully studied and researched experiences of many institutions, including University of San Francisco, University of Pennsylvania, Tufts University, Purdue University, among others, as well as the consolidated information at Campus Compact. We have adopted many of their good practices. However, we have also developed elements that are not found in other universities. In this book we will report briefly on the progress made so far. Readers will find the PolyU experience offers a serious and practical case study both for our own consumption and for other institutions and educators.

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As an important type of experiential learning, service-learning (SL) integrates community service with teaching and students' reflection to enrich students' learning experience, in order to achieve the intended institutional or programme learning outcomes. It enhances students' sense of civic responsibility and engagement on the one hand, and benefits the community at large on the other (NSLC, 2006).

SL has certain similarities with, but is not the same as, voluntary work. While voluntary work stresses community service without compensation or reward, SL calls for a balanced approach integrating community service with learning, and emphasizes learning through participation in services (Furco 1996). Hence students' self-reflection and assessment are critical elements of SL (Bringle & Hatcher 1999). Herein lies a major difference between SL and voluntary work. While voluntary work focuses on serving the needy, it does not automatically require the participant to learn anything significant from the service. SL does have such a requirement.

At PolyU, a relatively broad definition of SL is adopted. It focuses primarily on activities that serve people's needs directly and immediately, but nevertheless also includes indirect service activities relating more to enhancing civic responsibility and engagement. In terms of the nature of the service, it includes direct service activities such as tutoring of underprivileged children, renewable electrical power installations for remote villages, and health education for under-developed communities. It also includes indirect services such as field research on sustainable development and advocacy for social justice. In fact, many SL subjects include both direct and indirect elements. For example, to determine the real needs of a community for electrical power, a project team starts with community assessment on the specifics of the need before they carry out the actual service. On the one hand, the community assessment brings the team into contact with the community. On the other hand, the service itself generates experiences and data that enhance the understanding of the needs of the community. In terms of the location of the service, both local and offshore activities are encouraged.

Our students are given proper instructions and training to prepare them for the service. They are closely supervised during the service. Their achievement of academic objectives is recognized by academic credits. When the academic objectives, the learning activities, and the learning outcomes are clearly spelled out and validated, the academic merit of SL is established in the same way as other academic subjects. Many of the science and engineering faculty are initially unfamiliar with some of the elements of SL, such as community service and reflection. However, PolyU is a comprehensive university with a wide range of disciplines, including social science. Hence academic staff are able to acquire the needed knowledge from each other without too much difficulty.

PolyU has 29 academic departments grouped into eight faculty-level units. Each department offers a number of academic programmes. Each programme is typically composed of Discipline-Specific Requirements (DSR) and General University Requirements (GUR). GUR, as the name implies, are required of all undergraduate

students. It includes language subjects, general education subjects grouped in four cluster areas, and several other required subjects, including an SL subject, for a total of 30 credits and is equivalent to roughly one year's worth of studies. A student can also take a DSR subject which also fulfils the SL requirement; in this case the student must take an additional subject to make up the required number of credits for graduation. An SL subject can be offered by any of the 29 academic departments. It may target general community issues such as poverty relief or assisting the elderly; or it may target more specific issues such as assistive devices for the handicapped, housing problems, digital divide, or dyslexia. The subject may require generic skills such as optometry, accountancy, nursing or graphic design. It may be designed for all students; or for students from a specific discipline of study.

Put simply, an academic subject qualifies as an SL subject if it satisfies the following:

- 1. It contains clear academic objectives and expected outcomes for the students, which may be generic, discipline-specific, or both. Four common learning outcomes have been specified for SL subjects, while individual subjects may specify additional learning outcomes. The four common outcomes are:
  - (i) Apply the knowledge and skills they have acquired to deal with complex issues in the service setting.
  - (ii) Reflect on their role and responsibilities both as a professional in their chosen discipline and as a responsible citizen.
  - (iii) Demonstrate empathy for people in need and a strong sense of civic responsibility.
  - (iv) Demonstrate an understanding of the linkage between the academic content of the subject and the needs of society.
- 2. It has a significant amount of community service activities (typically at least 40 hours, roughly one-third of the total amount of the expected student effort for a three-credit subject, as shown in Table 2.1), which address identified needs in the community in a meaningful way, and must be supervised and assessed.
- 3. It includes a rigorous process for student reflections, on the linkage of their studies to the needs of the community and the services, their personal role and growth, and the impact of their services.

	Table 2.1	Expected student effort for an SL subject	ct :
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e-Learning Module	10 hrs
Class contact	
Discipline-related Lectures, Tutorials, Seminars and/or Workshops	10-15 hrs
Project-specific Seminars, Tutorials and/or Workshops	10-15 hrs
Reflection and review tutorials and sessions	5-12 hrs
Other student study effort	
Readings, self study, and planning and preparation for the service project	30 hrs
Direct rendering of service	40 hrs
Reflection and review	25 hrs
Total student study effort	130-147 hrs

In line with literature and the experiences of other universities, we recognize that the common SL learning outcomes can be achieved in many different ways. Each subject may differ in the background of the students taking the subject, the associated academic discipline, the type of services involved, the type of clients served, the location, etc. At PolyU, SL subjects are offered by a wide range of academic departments rather than a specific department such as social work. By 2016, four years after the policy came into effect, 25 out of 29 academic departments are offering at least one SL subject. Table 2.2 lists the subjects approved as of summer 2016.

Faculty 學院	Subject Offering Department 開辦科目學系	Subject Title 科目名稱	Subject Code 科目編號
	Department of Applied Biology and Chemical Technology 應用生物及化學科技學系	Educating Rural Farmers on Healthier Food Production	ABCT2S01
		Service-Learning in Nutrition and Healthy Diet	ABCT2S02
Faculty of Applied Science and Textiles	Department of Applied Mathematics 應用數學系	Quantitative Methods for Community Service	AMA3S01
應用科學及紡織學院	Department of Applied Physics 應用物理學系	Enhancing Scientific Literacy through Daily Physics	AP2S01
	Institute of Textiles and Clothing 紡織及製衣學系	Engaging Fashion as a Communication Media for the Needy	ITC2S01
	Department of Management and Marketing 管理及市場學系	Service Learning: Building Green Communities with Environmental NGOs	MM3S01
Faculty of Business		Business Project Development and Implementation for Underprivileged Communities	MM3S02
工商管理學院	School of Accounting and Finance 會計及金融學院	Service-Learning: Financial Literacy for Low-income Youth in Hong Kong	AF3S01
	Department of Building	Housing for the Community	BRE2S01
	and Real Estate 建築及房地產學系	Social Justice in Private Housing Redevelopment	BRE2S02
	Department of Building Services Engineering 屋宇設備工程學系	Science for Healthy and Sustainable Living Environments	BSE2S01
Faculty of		Indoor Environment for Serving the Elderly	BSE3401
Construction and Environment 建設及環境學院	Department of Civil and Environmental Engineering 土木及環境工程學系	Built Environment Enhancement for Underprivileged Communities	CSE3S01
	Department of Land Surveying and Geo-Informatics 土地測量及 地理資訊學系	Navigating Ethnic Minorities	LSGI2S02
		Land and Resource Management for Sustainable Development in Rural Area	LSGI2S03
	Department of Computing 電子計算學系	Technology Beyond Borders: Service Learning across Cultural, Ethnic and Community Lines	COMP2S01
		Service Learning and Civic Engagement in the Information Age	COMP3911
	Department of Electronic and Information Engineering 電子及資訊工程學系	Serving People with Special Needs through Assistive Technologies	EIE3S01
Faculty of	Department of Industrial and Systems Engineering	Comprehending and Overcoming Learning Hurdles in Science, Technology, Engineering, and Mathematics (STEM) for Local Schools	ISE2S02/ ISE2S02S
Engineering 工程學院	ring 工業及系統工程學系	Engineering for the Needy	ISE3S01
	Department of Mechanical Engineering 機械工程學系	Engineering Design for the Community	ME3S01
	Interdisciplinary Division of Biomedical Engineering 生物醫學工程跨領域學部	Reducing the Scientific Divide in Secondary Students through STEM (Science, Technology, Engineering and Mathematics) Projects	BME2S03/ BME2S03S
		Assistive Technologies: Service Learning towards the Elderly and Disabled	BME3S02
		Biomedical Engineering Services to Under-privileged People with Physical Disabilities	BME4S01

#### Table 2.2 List of credit-bearing SL subjects

Faculty 學院	Subject Offering Department 開辦科目學系	Subject Title 科目名稱	Subject Co 科目編號
	Department of Applied Social Sciences 應用社會科學系	Understanding Learning Difficulties	APSS2S0
		Understanding Children in Poverty in Hong Kong	APSS2S04
		Promotion of Children and Adolescent Development	APSS2S0
		Striving for a Sustainable Livelihood in Guangdong	APSS2S0
		You can Make a Difference to our Planet	APSS2S0
		Servicing School Dropouts	APSS2S0
		Service Leadership through Serving Children and Families with Special Needs	APSS2S0
		Community Psychology	APSS3S0
		Engaging with Diversity	APSS3S0
		Growing Resilience of Children in Post-Disaster Contexts	APSS3S1
Faculty of Health and Social Sciences 醫療及社會科學院	Department of Rehabilitation Sciences 康復治療科學系	Inter-professional Health Promotion & Rehabilitation Services in Hong Kong	RS2S02
西原双位百代学院		Serving People with Special Healthcare Needs in the Chinese Mainland	RS3S01
		Enabling Occupation: Home and Community Practice	RS4280
	School of Nursing	Collaborative Care in School Health and Safety	SN2S01
	護理學院	Healthy Lifestyle Challenges for Developing Communities	SN2S03/ SN2S03S
		Mentoring Health Ambassadors for School Communities	SN2S04
		Promotion of Healthy Ageing in the Community	SN3S02
	School of Optometry 眼科視光學院	Learning through Providing Eye Care and Vision Health to the Community	SO2S01
		Public Health Optometry	SO4006
	Department of Chinese and Bilingual Studies 中文及雙語學系	Service-Learning - Preserving Cultural Heritage for Ethnic Minorities in Contemporary China	CBS2S02
	十人从支加学示	Language Arts for Community Projects: Teaching Chinese as a Service Learning Experience	CBS2S03
		Service Learning through Helping Primary Students with Specific Reading Difficulties	CBS3S01
		Enhancing Biliteracy & Trilingualism through Language Service	CBS3S04
		Teaching Chinese as a Second Language in Local Schools	CBS3701
Faculty of Humanities	Department of Chinese Culture 中國文化學系	Appreciating and Applying Chinese Literary Masterpieces in Modern Daily Life	CC2S01P
人文學院	Department of English	Language Arts for Creative Community Projects	ENGL2S0
	英文系	Teaching English as a Service Learning Experience	ENGL3018
		Empowering Teenagers through Teaching Workplace English	ENGL3026
	English Language Centre 英語教學中心	Serving the Community through Teaching English	ELC2S02
	General Education Centre 通識教育中心	Social Poverty in Developing Countries	GEC2S01
School of Design		Service-Learning through Design and Building for Remote Communities	SD2S01
設計學院		Communication Design for Sharing and Inheritance - 'The Book of Life'	SD2S02
School of Hotel and		Ecotourism in Rural and Developing Regions	HTM2S01
Tourism Management		Hospitality Management and Operations in Developing Regions	HTM3S02/ HTM3S02
酒店及旅遊業 管理學院		Accessible Tourism: Concepts, Challenges, and Practices	HTM3S03
		Community Tourism: Tour, Training, Operator, and Event from and for the Community	HTM3801

Broadly speaking, there are two major types of SL subjects. There are the "general education" (referred to as GUR) subjects. They are intended to enhance students' general knowledge. They do not require specific prerequisite subjects or knowledge beyond what could reasonably be expected of an average undergraduate student: basic language skills, analytical skills, computer literacy, etc. Hence many GUR subjects are open to all undergraduate students, without prerequisites. There are, nevertheless, some GUR SL subjects that are designed for students with certain specific backgrounds, such as engineering, health-related disciplines, business, etc., and are intended to contribute to the general education of students of that particular background.

At the other end of the spectrum are SL subjects that are designed for students studying in a specific discipline, i.e. DSR SL subjects, and examples are optometry, English, occupational therapy, etc. These are designed so that students specializing in professional disciplines can use their specialist knowledge to serve, and in the process enhance their professional expertise. These are generally designed for students in their senior (i.e. third or fourth) years of studies.

All SL subjects, including those that are open to all students, are expected to have strong and clearly-defined academic objectives and learning outcomes. Students are given rigorous training in the academic elements and relevant skills prior to engaging in the prescribed community service projects. They are rigorously assessed in the achievement of the expected learning outcomes. For example, the "Technology Beyond Borders" subject is focused on information technology. One of the main topics of study is the "digital divide" between communities with advanced IT technologies and those who are without. Students learn about the digital divide, appropriate technologies and methods for bridging it, participate in service projects applying those technologies and methods, and make observations and reflect upon how their SL experience supports and connects to those topics learned in the classroom.

The wide range of SL subjects on offer ameliorate to some extent the compulsory nature of the SL requirement. Some students object being required to take a subject they may not be interested in. Even among those who are favourable towards community service, some may still resent being compelled to "do something good". At least, the wide range of subject contents, locales, service types available provides students with options and a sense of control.

The first strategic decision regarding SL was to make it credit-bearing. The second was to make it compulsory for all undergraduates. There are two major arguments for the second decision. Firstly, the learning objectives of civic responsibility, social justice and ethics are critical components of all-round education, and hence should be required of all students. This point was firmly established as part of the strategic objectives of the University.

Secondly, it is often the case that those who would not volunteer for community service that need the exposure. We believe that these students are afraid to try something that they are not familiar with. Some may lack confidence in social interactions. If they are left to themselves, many would prefer to stay with traditional academic subjects. However, all students should be given a chance to venture into closer contact with the community. As with many good things in life, often it is inertia that prevents us from trying something that is hugely rewarding. We agree there may be adverse impact when SL is made compulsory, but we believe the expected benefits were significant enough. Nevertheless, it was decided that we should closely monitor the implementation of the requirement to ensure that the expected benefits outweigh the possible setbacks.

In order to ensure that students get the benefits, we should also provide them with well-planned support and guidance, in the form of a structured subject supervised by well-trained academic staff. The requirement of a single SL subject was eventually deemed an appropriate balance among a number of considerations and concerns that had been raised. Those who want to can take additional SL subjects. Or they can continue to participate in extra-curricular projects. Those who do not wish to do more can stop after taking one SL subject.

At many universities, particularly those that are resource-rich, SL is carried out in small classes of, say, 20 students each or even less. Generally, students elect to take the SL subject or project voluntarily. Such a self-selected group of students are

highly motivated and self-driven, and the teaching need not be very structured, and this will in turn allow a high degree of autonomy for the students in designing and carrying out their projects. Some SL subjects at PolyU also fit this pattern.

Making SL credit-bearing and compulsory at PolyU, however, necessitates the offer of a large number of SL subjects, and also many places for students. Because of the high student number, it is common that SL subjects are offered to large classes (e.g. over 100 students) and this is one of the distinguishing characteristics of SL at PolyU. Because of the compulsory nature of the SL subjects, some of the students may not be highly motivated. Hence there are some SL subjects in which the service projects are highly structured, which enable us to accommodate the less motivated students.

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## The Making of a Service-Learning Subject

PolyU recognized that the implementation of the Service-Learning Requirement is a major endeavour which requires the development of a wide range of subjects and associated projects. The University also has to institute academic policies, administrative procedures, support structures, and financial support mechanisms. Consequently, a Committee of Service-Learning Subjects was established to oversee the academic development and quality assurance of SL subjects in the University. The Committee is composed of experienced academic staff from different Faculties and departments who are knowledgeable in SL and academic procedures. In conjunction, the Office of Service-Learning (OSL) was also set up to promote and support the development and operation of service-learning subjects and associated projects.

An SL subject is created through the following procedures. A call for subject proposals is issued to all Faculties by a sub-committee set up under the Committee of Service-Learning Subjects. The composition of the sub-committee ensures that a broad spectrum of disciplines and departments are represented, and that a balanced viewpoint is present. It vets all proposals, and decides whether a proposal is suitable or unsuitable, or whether it should be revised for further vetting. The sub-committee's decisions are submitted to the Committee of Service-Learning Subjects for deliberation. Proposals which satisfy the Committee's requirements will be recommended to the University for final approval.

The OSL supports the work of the Committee and the sub-committee throughout the process. It also assists the subject lecturers in developing the proposals, liaising with potential collaborators such as non-governmental organizations, setting up the service projects, assessing the risks involved in the delivery of service, soliciting further funding support where required, and so on.

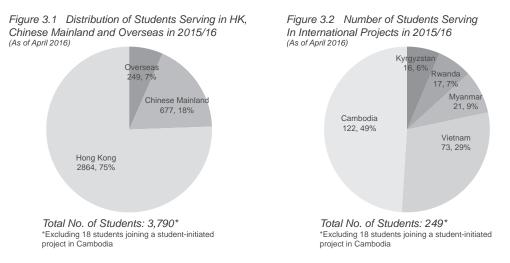
The OSL has developed an e-Learning module which covers the basic concept and practices of SL that can be used in place of classroom teaching. The module is designed to be completed by students independently in roughly 10 hours and has been integrated in many SL subjects. The module ensures consistency in the teaching of the core concepts of SL as defined by PolyU, and helps to reduce the teaching load of the subject lecturers, allowing them to concentrate more on the specific content of their SL subject. We have shared the module with some interested partners and are planning to make it available to a wider audience.

Prior to the implementation of the Service-Learning Requirement in 2011, there were few faculty members who had significant experience in developing, delivering and assessing credit-bearing SL. We have projected that at full implementation, we need an estimated 100+ faculty members to teach 60+ SL subjects, some of which will be taught jointly because of the large class size, heavy supervisory duties, or the multi-disciplinary nature of the subjects or services. Hence staff development in SL is critical. A number of actions have been taken, many of which turned out to be highly effective.

At the beginning, workshops and seminars were used to promote the concept of SL, as well as to educate staff on aspects of developing and teaching an SL subject. Such

workshops/seminars were organized once a month on average on a broad range of topics, such as the policy on SL, how to write a proposal and syllabus, how to assess students' performance, how to develop offshore projects, etc. At first, we relied heavily on invited speakers, often from overseas institutions. As we built up expertise in the various aspects of SL, we increasingly looked to our own teachers and staff to provide the workshops.

While most (around 80%) of our students participate in SL projects in Hong Kong, an increasing number serve in offshore projects. These offshore projects have been conducted on the Chinese Mainland and in foreign countries such as Cambodia, Indonesia, Vietnam, Myanmar and Rwanda. They serve multiple purposes in addition to educating students through their delivery of service. Hong Kong is small and relatively racially homogeneous, and many of our students are from working class families and may not have travelled outside Hong Kong before, even on vacation. The offshore projects afford our students an additional learning experience by interacting with people from different cultures and races. Students also learn a lot when they have to work in low-resource sites of many of these projects to achieve their goals, such as using ICT to help the local community.



SL projects, particularly those carried out offshore, often incur additional expenses for travelling, accommodation, etc. While students are expected to cover part of the expenses to ensure ownership and accountability, funds are also made available to subsidize some of the costs. It is encouraging to note that many individuals and institutions have supported the SL projects with generous donations, seeing the benefits to the students and the communities they serve.

# Part Two

Selected Service-Learning Subjects

Enabling Occupation: Home and Community Practice Tony Wong Department of Rehabilitation Sciences

## 4.1 A DSR Subject Incorporating Service-Learning

#### 4.1.1 Developed from a previous elective subject

"Enabling Occupation: Home and Community Practice" is a core subject in the BSc Programme in Occupational Therapy which incorporates a service-learning (SL) element. It thus fulfils both the discipline-specific requirement (DSR) of the programme as well as the SL requirement of the University. It has been designed based on a small-scale elective subject previously offered in the Department of Rehabilitation Sciences which aimed to help students develop their professional knowledge and practical skills in occupational therapy through the offer of service in Non-Governmental Organizations (NGOs) instead of traditional settings such as hospitals, clinics or rehabilitation centres. The rationale behind is to equip students to meet the changing needs of the society for therapeutic services, where occupational therapists will be required to deliver their services in the home of a client or in a community centre which offers support and resources that the client may need.

Students who took the elective found the subject rewarding because it gave them the opportunity to work with people from other disciplines, such as social workers and NGO administrators. They also reported that the experience had enabled them to learn beyond their discipline knowledge when compared to the formal placement exercise, which, by necessity, was more restrictive in the assessment in terms of components and criteria. Students' positive feedback has stimulated the teaching team<sup>1</sup> to enhance the subject to become a core subject of the programme with an SL component. It was launched in the 2015/16 academic year.

#### 4.1.2 Organization of the new subject

Since the subject has also been designated as a core subject of the programme, there are some differences in the way it was offered as an elective. First, the student number has been enlarged (83 in the 2015/16 academic year), and so there are more students in a group (with 12 to 14 students in a group). Second, the subject now spans two semesters; the lectures, tutorials, as well as the planning, organization and delivery of at least 40 hours of direct service are carried out in the first semester, and the report writing and final presentation are completed in the second.

A major change in the subject is students' role in the planning and implementation of the service. Previously, the service to be rendered was planned and organized by the teachers, and students were there to provide the service. In the new subject, students need to play a more active role: they are involved in the negotiation with the collaborating NGO to come up with a service programme that will both align with their own plan and meet the organization's priority needs. The teachers would only alert them to be mindful of issues such as whether their expectation is too high or

<sup>&</sup>lt;sup>1</sup> The teaching team members are Tony Wong (Subject Leader), Andrew Siu, Eddie Hai, Joy Lau, Josephine Wong and Phoebe Cheung.

whether resources are available. Students would be given the autonomy to choose the kind of service they would like to provide. Last year, students were divided into six groups to provide different types of service to different client groups, including the elderly, small children, people with mental health problems, and people with physical disabilities. Even after the assignment of an NGO which may already have some service activities in mind, students can still suggest new plans if they think appropriate.

There are four lectures and associated tutorials/consultations for the students prior to their meetings with the NGOs. The major aim of these sessions is to get students to think beyond their own professional role when they provide the services, because their task on hand may require them to take up more than one role. Apart from considering their professional role as an occupational therapist within the community, they may also have to act as an educator of the staff of the NGO (for example, they may have to teach the staff of an elderly centre the techniques of how to take care of the aged), and be involved in the administration and operation of the NGO when they take up different job positions. Rehearsal sessions will also be run for the students to get them prepared for the meetings with the organizations. They have to draft activity plans, run group activities, organize the division of labour and back up, and prepare contingency plans. However, when it comes to the actual meetings with the NGOs, the teachers would not intervene and would only keep their ears and eyes open during the process.

The following table gives an overview of the expected student study effort in the subject:

Class contact	(54 hrs)
Lecture	8 hrs
Tutorial and seminar presentation	6 hrs
Direct service	40 hrs
Other student study effort	(80 hrs)
Self-study	20 hrs
Preparation of reflective journal	20 hrs
Group work: preparation of project, assignment and presentation	40 hrs
Total student study effort	134 hrs

#### 4.1.3 Assessment of students' "performance"

The assessment of students' "performance" is also different from that of the previous elective subject. For a subject which aims to help students learn through a service experience, its assessment must be different from that of a traditional placement exercise. It should focus more on the feedback and evaluation of the different parties involved (for example, from the peers and the recipient organizations), and, in particular, on students' own reflection.

Students are assessed through continuous assessment on an individual (60%) and group (40%) basis. The components include peer and recipient organization's assessment, a group project report and presentation, as well as an individual written reflective journal. While the teachers will assess students' work using the profession's domains (for instance, whether the students have applied their professional knowledge and treatment techniques when they deliver their service), the organizations as the service recipients will give their evaluation on generic elements such as punctuality, politeness, initiative, responsibility, and so forth. Since students often work as a group/sub-group, there is a need to help the assessors (some of them may be the

supporting staff of the organization) to identify the individual students. Last year, the teaching team resolved the problem by affixing students' photos in the evaluation forms for the assessors.

The reflective journal plays a very important part in the assessment. Strictly speaking, we sometimes think that how deeply students learn often depends on how deep their reflection is. The teaching team therefore prefers not to give students a template for writing the journal because we do not want to receive 12 or 14 copies of journals in a similar format. We have not set down rules about what should or should not be included in the journal. Instead, we encourage students to write down what they have experienced and what they have learned through the experience.

From what we saw in the journals, some students had truly reflected on the difficulties encountered, and admitted that they had not achieved the best results. However, they were aware that they had learned how to communicate with different people from different backgrounds, and how to solve problems under the constraint of limited resources. These would be the kind of holistic problems that they would have to deal with if they work in an NGO in future. Overall, we have found that the majority of students have made good use of this opportunity to honestly reflect on their experience, and from this perspective, we consider an important learning objective of the subject fulfilled.

#### 4.2 What Students Have Shown Us

We are much delighted to note that students have learned more than we have expected. The following is a good example. One group of students was assigned to a church to help some small children there to develop self-care abilities. But during the discussion with the administrators of the church they soon discovered that some other children were in need of a different type of service. These children were new migrants who had to adapt to the culture of Hong Kong. The students floated the idea of mounting a social skills programme for these children, and it was quickly accepted by the church administrators. So the students devised a training programme to help the children develop proper behaviours in situations such as having a meal in a restaurant, riding on a public vehicle, visiting a museum or library, etc. An immediate question that they had to resolve was how they could apply their health care knowledge and techniques to help a group of normal children rather than children with disabilities. In connection with this, they also had to design an assessment strategy that would help them evaluate whether the children had achieved their intended learning.

The students' suggestion was also supported by us because it indicated that they had taken the initiative to come up with new ideas, and that they were aware of the social phenomenon at that time when some sectors of the society had developed some biased views towards new migrants, and they wanted to help the children, albeit a small group, to integrate into the society quickly. Many of the students, on reflection, said that apart from having gained new experience during the training process, they also enjoyed themselves much during the bus trips, the restaurant experience, and the museum visits. Here is a direct quotation from a student's reflective journal.

Finally, I really enjoyed throughout the whole program in serving these children. Although it was not easy to build rapport and take balance between play and education, it was a great opportunity for me to experience and personally grow in taking more initiative to participate and think of things that would help our participants. At the very beginning, I do not really understand why OT service would be held in a church. However, now I realized that service would help those immigrant children with love and with social skills enhanced during their daily life.

Similarly, another group of students had taken one step further to better serve their clients. This group of students was to provide services in a centre for the elderly. Seeing that the Mid-Autumn Festival was coming near, they took the initiative to make use of the occasion to conduct reminiscing therapy for their clients. They helped them recollect the origin of the festival, the traditional celebration activities, and the kind of food people would take to celebrate the festival. They even included a lantern-making activity, with different parts of the lanterns prepared beforehand to cater for the different levels of abilities of the group members. This activity was not part of the students' original service plan, but the whole group had a very enjoyable time together because of its inclusion. Not only the social workers who worked in the centre, but also the staff there were highly appreciative of the students' initiative.



The students were also serious about the outcomes of their services, and they designed their evaluation compatible to an academic assessment. In the first case, the students interviewed the children as well as their parents to find out if the children had gained benefits from the programme. Some children said that they were not afraid of doing shopping by themselves any more, some said that they could now take the initiative to talk to people, and some mothers found that their children were more expressive after the training. In addition, the students also measured the effectiveness of their programme using a behavioural chart. We were quite touched when we read from their reflective journals about their feelings when they saw the changes in the behaviours of the children.

Some may wonder if students' sense of social responsibility and empathy can be enhanced simply through taking an SL subject. We are fortunate that this is not a major issue for us, as many of our students choose the profession because they want to serve the community in the first place. Even if they are not too sure about this in Year 1, they would have developed this mind set later. In the first case mentioned above, it was purely the students' own observation of the social issue that had led them to go beyond their original plan to design meaningful service activities for those children. The students regarded them as members of the society, and wanted to bring about changes to improve the phenomenon. This is good demonstration of their social responsibility. In the second case, the students' empathetic feelings about their client group prompted them to make use of the Mid-Autumn Festival to give the group an enjoyable experience. They would not have made this extra effort without empathy.

## 4.3 Our Own Reflection

#### 4.3.1 Difficulties we have faced

Indeed, we have gained a lot of satisfaction from offering the subject by what our students have shown us. But undoubtedly there have been difficulties that we have faced with when incorporating SL in a DSR subject. Finding space in a highly packed curriculum to accommodate the three-credit subject is one of the problems. In the last

round, there were six groups of students and each group was led by a teacher as the supervisor. Although the supervisors only took up an advisory role, the amount of time we spent on participating in meetings and negotiations, as well as on reviewing students' performance was enormous. Teachers' workload can never be truly reflected in the official documents. The time issue is applicable to students too, when they have to squeeze 40 hours out of their tight class timetable and placement schedule to provide direct service to their client groups.

We may also have to deal with unexpected issues when we offer our service to organizations. A problem that we encountered last year has led us to further consider standing firm on the nature of our collaboration. In that instance, we found that the organization had planned to charge the client group a fee for the therapeutic activities our students offered. We could not agree to this idea because first, our students were not professional therapists yet; charging a fee would imply the provision of professional service and we should not shoulder such a responsibility. Second, the charging would seriously distort the nature of SL. It took us a lot of negotiations before it was resolved that while the service recipients would need to pay the overhead costs, the therapy provided by the students should be free of charge. This instance has alerted us to think more carefully about the selection of organizations having their own "agenda" when they are overly receptive to our proposals.

Nonetheless, we have had a fruitful experience in our attempt to incorporate SL in a discipline-specific core subject. It would not be possible without the commitment of the teachers, the support from the Department, and the willingness of the students. At the institutional level, the support from the Office of Service-Learning in the form of advice and administration was useful as well. For example, the Service-Learning Handbook developed by the Office would be of practical use to teachers who wish to launch SL subjects. Externally, we are aware of the respect that the NGOs pay to the logo of PolyU when we have deep collaboration with them through this opportunity. Their respect to the University must have been earned through the good work of our predecessors, and we should play our role too to sustain this reputation.

#### 4.3.2 What is SL all about?

Service-learning is more than spending 40 hours on a service task. It requires students, with teachers' guidance, to identify a problem that is also taken by the NGO as their priority, be convinced by the reason for solving it, and to find an effective way to do so. The following example demonstrates what this means. The Hong Kong Society for the Blind was trying to solve the problem of new staff members being injured when they helped the visually impaired inmates to take showers. The first idea that came to the mind of the students who took up the project was to provide the new staff members with proper training by making reference to the Occupational Safety and Health Regulations. They also noted that the other significant group being involved in the process was the inmates, who should also be "trained" so that the process would be safe for their helpers as well as for themselves. The students applied the concept of activity analysis to help the staff members to better understand their job components so as to avoid injury. They decided to produce a training video for the purpose. But obviously this would not work for the inmates, as they could not watch the video. Innovatively they had the video script turned into an audio for the inmates to help them go through the shower process mentally. This innovative "training" turned out to be extremely effective, and the impact was beyond the organization's expectation!

On reflection, the teaching team has learned that we should not play down the role of students in the whole process. They may not have the experience, but they can be very creative. Teachers should regard themselves as a member of the group rather than someone who knows everything, and too much intervention would only kill students' creativity. On the other hand, it does not work if all the planning is left to the NGO, as students may not be given enough support to realize their service plan. Teachers have to judge when is the right time to support the students in order to help them achieve the learning goals. All in all, we have found the experience in leading a SL subject meaningful and enjoyable, and believe that learning does take place beyond the four walls of the classroom through a service experience. 5

# Orthotic Services for Underprivileged People with Physical Disabilities

M. S. Wong, Aaron Leung, Alex Kee & Peter Tsang Interdisciplinary Division of Biomedical Engineering

## 5.1 Background

The service-learning (SL) pedagogy has long been adopted by many universities internationally. Research has shown that SL brings about many advantages. Through delivering a service to those in need, students have a chance to apply their academic knowledge and skills to solve real-life problems, and develop their generic competencies and sense of social responsibility. Their service benefits not only their clients, but also the community at large.

When the new four-year curriculum was introduced in Hong Kong's higher education institutions in 2012, The Hong Kong Polytechnic University decided that it was an opportune time to include SL as a mandatory component of all undergraduate programmes. Nevertheless, many teachers and students from different disciplines of the University have already been involved in different voluntary community services long before 2012, based on the belief that teachers and students as a team could make good use of their professional knowledge and technical skills to help the needy.

Providing a clinical service to those in need is particularly legitimate for a paramedical discipline such as ours. For 10 years since 2006, we have been organizing students enrolled on the Prosthetic and Orthotics (P&O) concentration of the Biomedical Engineering B.Sc. Programme to offer voluntary clinical services to underprivileged people with physical disabilities on the Chinese Mainland. PolyU is the only university in Hong Kong that provides free prosthetic and orthotic services to patients on the Mainland, and the number of service recipients now amounts to over 500.

Although the study of P&O goes hand in hand with a voluntary service project, the subject itself is not offered as an SL subject because it is a specialized course, and its focus is on P&O rather than on service. Some objectives of the course, however, are similar to an SL subject: students apply their knowledge and skills acquired from the discipline studies to address the needs of underprivileged patients, and reflect on their development of personal qualities such as ethical, social and national responsibilities.

## 5.2 Training and Assessment of Students

Students learn the theories and practice of P&O through interactive lectures, tutorials and practical sessions. Then students join a service trip, and by then they should be familiar with the concepts related to anatomy, physiology and clinical reasoning that support their advice on rehabilitation, such as orthotic devices to be employed and training required.

During the service period, students need to take up case management, submit written assignments, perform practical/clinical tasks, and attend debriefing sessions. Students' performance in the service is assessed via case presentations, practical tasks assigned, reflective reports, and service recipients' questionnaire feedback. These assessments in totality reflect students' overall understanding and performance in the project, and whether they have served with a heart.

# 5.3 Collaborating Universities and Organizations in the SL Project

The SL project is carried out in collaboration with four other universities, two from the United States and two from the Mainland, and one Mainland organization. Each summer, there are arrangements for students from the University of Pennsylvania (UPenn) and Washington University at St. Louis (WUSTL) to come and participate in the project. The arrangements work like a student exchange programme; students from PolyU also have the opportunities to join the community service projects organized by these two universities. On the Mainland, the universities and organization which collaborate with us are Shaoguan University, Shantou University, and Guangdong Disabled Persons' Federation.

## 5.4 The SL Projects

The service is delivered in selected towns and cities in Guangdong Province in the summer. Our major group of service recipients are children with cerebral palsies who cannot obtain orthotic services either because of financial difficulties or because there is a lack of expertise in the area. They are referred to us by Guangdong Disabled Persons' Federation. Each student is assigned as the case manager to take care of one to two children. Students from PolyU and the two overseas universities form small teams to diagnose the problems of their clients and advise orthotic prescriptions to solve their problems. They also fabricate the orthosis or other devices to meet the clients' needs. Each year about 50 children are benefitted by our service.

We also target our service at other underprivileged groups. In the 2016 service project, we helped the elderly patients living in the Shaoguan Leprosy Village by producing new prosthesis for them. We also helped to improve their facilities and living environment where necessary and possible.

Our experience shows that each party involved in the service projects has gained something out of it. The following direct quotations from our students' reflective reports submitted after the 2016 service project are testimony to this observation.

#### Professional skills improved in real practice

"For the trip in Guangzhou, I treated one case with my partner from UPenn. The patient suffered from a mild stroke (hemiplegia on her left side) six years ago and had a more severe one a year after. She came with her present orthosis which was a hinge AFO. The patient walked with a drop foot and varus gait without an orthosis, but she walked guite natural with her present orthosis. However, she complained for the impact sound when she was walking with the hinge AFO and the bulky ankle joint which limited her to wear trousers. Hence, as suggested by Dr. Wong, the posterior leaf spring AFO was prescribed for her in order to reduce the complexity of the ankle joint and the impact sound while walking. The greatest challenge of handling this case was the orthotic prescription. The reason was that I had no experience of posterior leaf spring AFO before. I had no much idea on the design and the biomechanics of this type of AFO when I was fabricating the orthosis. Personally, I believed apart from asking others, comparing the differences while the patient was walking with the two orthoses could help me familiarize more with the principle of the posterior leaf spring AFO. Hence, I spent some time observing the patient walk with her present hinge AFO and the prescribed posterior leaf spring AFO respectively. I was glad that at the end we could fulfill the treatment objective and I could learn from real practice even though the theoretical knowledge has not been totally established. In addition, it is a great experience for me to get along with and sidetrack the patients who are children, through different means such as using stickers, toy cars and chatting with them."

"... we ... took casts for the amputees in the village so as to make the prostheses for them. For the two days afterwards, we stayed in the Shaoguan Disabled Persons' Federation to do the prosthesis fabrication. All of our groupmates made effort to make the prostheses. ... We were glad to see that the prostheses fitted the amputees."

#### **Development of generic skills**

"The service trip offered me ... an opportunity to enhance my communication skills, problem-solving skills, teamwork and critical thinking, ..."

"There were not only practical skills and theories I learned, but also the soft skills including communication skills, team work and professional consideration for patients. I am looking forward for the service trip next year!"

#### Development of empathy and sense of responsibilities

"After travelling to Leprosy Village, I realized that you could only know how those people live and how is their living environment when you had personal experience. ... The service trip ... developed my interest in helping the under-privileged people who living in rural area or living in poor environment. It is worthwhile for me to spend the two-week time or even more time to join the service trip."

"This service-learning experience has a profound impact on my personal development. It required us to step out of our comfort zone. Since we live in an ever-changing society, each of us need to develop a deeper understanding and appreciation of other cultures. It is unlikely that any of us will remain sheltered within our small communities forever, but even if we do, we have a responsibility as educated citizens to help bring about change and growth at home. In order to prepare for this challenge, we must develop heightened awareness of our own ethnocentrism and understand how personal stereotypes influence our behaviour towards individuals and groups."

#### Learning in cross-cultural interactions

"... the WUSTL and UPENN students were very nice, friendly, willing to ask questions and help others. Moreover, they were approachable and enjoyed group activities. Although I was a bit quiet, I tried to talk with them sometimes and I thought it was a good time. For the work of making AFOs and insoles, the cooperation was nice. We had suitable labor division and finished the work smoothly. When the WUSTL and UPenn students had problems such as the use of sanding machines and cast modifications, the HKPU students would teach them with their experience. On the other hand, when the HKPU students needed help, the WUSTL and UPenn students would provide help immediately. Furthermore, I appreciated that the WUSTL and UPenn students tried their best to play with the children and communicate with the parents in spite the difficulty of using different languages."

"Service-learning provides a conduit to develop skills in cross-cultural interaction. Through our experiences, we have an opportunity to learn and practice non-biased behaviour in our relations with others. ... I really enjoyed experiencing the culture difference between the Chinese Mainland, Hong Kong and the United States."

For the American students who had come a long way to participate in the project, they returned home with a brand new learning experience.

"After the brief meeting session and project overview lecture we jumped right into learning about orthotic design and production processes. As the PolyU students have more previous experience than us, they are showing us the process. There is so much to be learned. While it is easy to simply observe each of the steps in the process, I am more interested in understanding the reasoning behind each of these steps. ... Going into this service trip I had not expected to be working directly with patients this much. My previous service projects with healthcare have been limited in terms of patient interaction exposure due to patient confidentiality legalities within the United States. Here the culture is less focused on the preservation of things like privacy, which has enabled this experience for me. Seeing these cultural differences in practice has changed how I feel about them."

"... this community service learning project was the first time I have travelled outside of the United States and Canada. I was able to experience a whole new culture and be surrounded by a language which I could not understand. The experience was full of new which can be both exciting and anxiety-provoking, but I was comforted by the welcoming faces of the students from Hong Kong Polytechnic University and Shaoguan University. This experience has influenced my future career path. Through personal communication with patients on the community service learning trip, I have realized that I would like to have personal experience with patients during my career. With a major in biomedical engineering and a minor in mechanical engineering, I have been planning to enter the medical device industry post-graduation. In the medical device industry, there may not be patient interaction. Through possible career opportunities or service projects, I hope to include patient interaction. One career option would be a position in a hospital laboratory, such as the Motion Recovery Research Lab we toured at Sun Yat-sen University Hospital. Overall, I am grateful for the opportunity to participate in the HKPU Community Service Learning Project. I have gained knowledge in the area of prosthetics and orthotics, served individuals in Guangzhou and Shaoguan, developed new friendships, learned about a new culture, and discovered challenges of local Chinese communities."

"Working with patients gave me a glimpse into the life of a doctor, and gave me the impetus I needed to decide that I want to be a doctor in the future. Working with patients and developing solutions based on their needs was a very rewarding part of this experience, and has played a large role in helping develop my personal philosophy as well as in the development of my conviction in my career decision. My memorable experiences during this trip were not limited to the work in the clinic, but were actually more related to the entire atmosphere of the trip."

### 5.5 Impacts of Our SL Projects

In the past 10 years, every SL project has brought memorable experiences, satisfaction and enjoyment to all parties involved.

The clients and their parents/families are satisfied because they can have access to orthotic services which they previously cannot afford or which are not available in their area. Our service has provided them with a better quality of life.

Through taking part in the SL project, both PolyU and the overseas students have gained knowledge in the area of P&O, and become more competent in clinical skills. In addition, the project has enabled PolyU students to develop not only generic competence in communication, problem-solving and critical thinking, but also empathy towards the needy and a stronger sense of social responsibilities. On the other hand, the experience of working directly with patients, which is very different from the American P&O practice, has inspired many American students to reflect on their own career path to take. Both groups of students have also extended their personal network.

Our service has helped local collaborating practitioners to enhance their knowledge and skills in P&O as they work with us in the service process and provide follow-up treatment/care to the children afterwards.

We have adopted a "close-loop" model to prepare students for the rendering of service. The model involves the "handing down" of knowledge and experience from graduates to senior students to junior students. The idea was developed when many graduates who were working in hospitals volunteered to return and contribute to the project. So the design is for the alumni to provide senior students with clinical knowledge, and senior students, in turn, share their knowledge and previous service experiences with junior students who are about to deliver their service. During the service period, the junior students communicate what they have learned to their overseas counterparts through working together in the project. We have found that the model works well.

We are particularly pleased to note that our provision of voluntary service to underprivileged patients has become a culture of the P&O programme. The new P&O generation of students (including the alumni) are very enthusiastic about maintaining this culture, as they expand their services to other communities in need on the Mainland and in Hong Kong.

# Learning through Providing Eye Care and Vision Health to the Community Dr Chi-wai Do & Dr Henry Chan

School of Optometry

# 6.1 Learning through Community Service – the Past

The School of Optometry (formerly the Department of Optometry & Radiography) has been established in The Hong Kong Polytechnic University for more than three decades. Throughout the years, the School's curriculum has undergone changes to meet the changing needs of the Hong Kong society as well as the development of the University. Nonetheless, apart from clinical training, one important feature in the curriculum has remained unchanged: the provision of outreach vision screenings to the community.

Previously, students from the subject "Community Optometry" provided the vision screening services in collaboration with non-governmental organizations (NGOs) and charity bodies. Later, we found that there were overwhelming requests for similar services, but we only had a limited number of students appropriately trained for the purpose. For instance, there was a case when an NGO was put on the waiting-list for a few years before its request was met. The voluntary and somewhat haphazard nature of the service also posed limitations: it was difficult to plan for the service before we had enlisted enough student volunteers. In addition, the service could only be provided during certain periods of the year (usually between January and April) because it was linked to the subject.

The sole reliance on our staff and students to provide the service was changed when the former Students Affairs Office (SAO) mounted the Community Service Learning Programme (CSLP). In the Programme, different schools/departments organized their students to apply their classroom knowledge and skills to provide a voluntary service to the University community. The School of Optometry also joined the Programme: our students offered a vision screening service in a booth set up on the campus podium. In anticipation of the high demand for the service, we decided to recruit student helpers outside the School and provide them with some basic training so that they could assist in the vision screening process, thereby easing our students' workload. We were much delighted that this worked well; the teaming up of optometry with non-optometry students to provide vision assessment service was found to be feasible and actually quite effective.

Later, the Health Assessment Project initiated by the School of Nursing gave us an opportunity to reflect more seriously about the benefits to PolyU students when they took part in community service. The faculty-based project included sub-projects from constituent Schools and Departments of our Faculty, each designed to train participating students from other Schools/Departments within the Faculty to conduct health assessments outside their own discipline. That is, optometry students would train their peers from other disciplines about vision assessment, and vice versa. Our students found the arrangement useful because they learned from their fellow students different ways of assessing the same health problem of the same patient.

The fruitful experience from CSLP and the Health Assessment Project led us to consider designing a subject which benefits all PolyU students through service-learning (SL), and at the same time allows optometry students to learn more about the perspectives of students from other disciplines.

# 6.2 Learning through Community Service – the Present

#### 6.2.1 DSR and GUR subjects running in parallel

Due to the change of the Hong Kong education system, starting from 2012, universities in general have to provide one more year of education for their bachelor's degree programmes. The School thus redesigned its curriculum so as to be in line with the change. Prompted by the two service projects mentioned above, we revised the subject "Community Optometry", and renamed it "Public Health Optometry"<sup>1</sup>. One of the revisions was the enhancement of community service as a formal component of the subject. Since the "new" subject contains a strong element of service, we also proposed it to be a Discipline-Specific Requirement (DSR) SL subject starting from the 2014/15 academic year.

"Public Health Optometry" includes a mandatory service component, thereby ensuring that optometry students will provide a certain amount of community service by the end of the course. At the same time, the successful experience we gained from the "combined team" model in CSLP has inspired us to develop and propose another SL subject which is open to all students from other disciplines. The new GUR (General University Requirement) subject, "Learning through Providing Eye Care and Vision Health to the Community"<sup>2</sup> was launched in the second semester of the 2013/14 academic year.

There are many advantages with the establishment of these two parallel subjects, such as being able to involve more students in meaningful and purpose-driven outreach screenings. Since the subject is offered in all semesters, we can schedule the service throughout the year and not just during the semester break and the second semester. As well, the scale of the service becomes bigger, because more students can be engaged in the activity. And thanks to the full support from the Head of School, Prof. Chi-ho To, for the administrative assistance from the School.

#### 6.2.2 Academic focus of the DSR subject

The DSR subject "Public Health Optometry" is intended for year-4 optometry students. Students with relevant background knowledge and clinical experience from optometry-related subjects such as Clinical Optometry 1, 2 and 3, Ophthalmic Optics, as well as Dispensing 1 and 2 are provided with outreach opportunities to apply their classroom skills in community service rendering.

The subject lasts for three semesters, and consists of four components: (1) the SL module (which is common to all SL subjects), (2) the discipline-specific module to equip students with the knowledge and skills needed for organizing the service project, (3) project-specific tutorials/review sessions and service site visits to help students better understand the potential issues associated with the implementation of the vision screening project and the nature of the target community group, and (4) service projects.

<sup>&</sup>lt;sup>1</sup> The teaching team of "Public Health Optometry": Dr Chi-wai Do (Subject Leader), Dr Henry Chan (Subject Leader) and Dr Patrick Ting.

<sup>&</sup>lt;sup>2</sup> Teachers of the GUR subject are: Dr Chi-wai Do (Subject Leader), Dr Henry Chan (Subject Leader), Dr Andrew Lam, Dr Chea-su Kee, Dr Allen Cheong, Dr Thomas Lam, Mr Peter Pang, Dr Lily Chan, Dr Patrick Ting, Dr Lydia Yu and Dr Geoffrey Chu.

The discipline-specific module includes the following topics:

- Vision screening: general principles and essential factors for consideration
- The roles and responsibilities of optometrists in the community as a primary eye care provider
- Community health care needs and social responsibilities
- Provision of optometric care to underprivileged groups
- Lighting
- Visual hazards and ocular protection in occupations and sports
- Visual ergonomics
- Computer vision syndrome (CVS)
- Sports vision and driving vision

#### 6.2.3 Academic focus of the GUR subject

The primary aim of the introductory-level GUR subject "Learning through Providing Eye Care and Vision Health to the Community" is to equip students with some basic optometric knowledge and raise their awareness of ocular health care issues that affect our community at present and in the future. Students will learn to use certain basic, non-invasive, user-friendly screening instruments. Unlike optometry majors, they are not expected to master all the optometric examination techniques. Instead, we encourage students from different disciplines to work as a team, and to apply their own professional knowledge and skills to innovatively tackle the task on hand when they provide the service.

The subject spans two semesters, and is open for enrolment every semester. Similarly, it has an SL module, and three other components: (1) the discipline-specific vision care module, (2) project-specific seminars and workshops/tutorials, and (3) two SL projects.

The vision care module aims to assist students to understand the basic concepts of vision screening and to familiarize them with some simple yet important clinical tests for vision assessment. These are taught in the form of lectures and practical laboratory sessions in the first semester. The project-specific seminars and workshops/tutorials are designed to help students organize and implement a vision screening project, which spans two semesters, by themselves under supervision.

The vision care module covers the following topics:

- Basic structures and terms commonly used in eye care
- Vision screening: general principles and essential factors for consideration
- Community health care needs and social responsibilities
- Provision of vision care service to underprivileged groups
- Proper attitudes and behaviours in service delivery
- Basic knowledge and skills in providing vision screenings
- Developing a service project proposal/plan
- Professional ethics on patient confidentiality
- Impact of vision screening delivery for the underprivileged in blindness prevention
- Impact of delayed diagnosis and referral on medical and rehabilitation expenses

#### 6.2.4 The SL Projects

The aim of our vision screening projects is to raise public awareness of ocular health care and to identify people who may be considered "at high risk and/or at risk" in developing vision disorders or eye diseases for timely referral for management or monitoring, if appropriate. For example, epidemiological data published by World

Health Organization have shown that uncorrected refractive error is a leading cause of blindness in the world. In addition to that, many common eye diseases such as cataracts, glaucoma and diabetic retinopathy are asymptomatic during the early stages of development. The early stages of these eye diseases are critical time periods when treatment is most effective, and they can pose significant risks of permanent vision loss if left untreated.

Requests for our vision screening service have mainly come from NGOs and charity bodies, many of which we collaborated with in the past. Our target beneficiaries are people in the community who have difficulties accessing vision and eye health care services, including the elderly, school children, new immigrants, low-income families, refugees, ethnic minorities as well as those with physical or developmental disabilities. We have also extended our service to the Chinese Mainland and other developing countries such as Vietnam and Cambodia.

When we consider the requests for service, we will assess the organizations in terms of their clients, the number of participants anticipated, the preferred time period for the service, and so forth. For example, if the residents of an organization have developmental disabilities, we have to allocate more senior optometry students and staff to assist our students from the two SL subjects during service provision. We will then discuss with the requesting NGO for confirmation of the screening activity. Based on the preliminary information of the organizations we have gathered, students can select the organization (the client group) and the requested sessions according to their own interest and time availability. They can also choose whether to deliver their service locally or offshore.

Both the DSR and the GUR subjects require students to participate in two vision assessment projects, and render at least a total of 20 hours of direct service in each. In their first project, "junior" students (who are still in their first semester studies) learn from their "senior" peers (who have completed their first semester studies) by helping in their second project. In turn, the "junior" students will organize their second project by themselves when they have completed their first semester studies and become "seniors". During their first project, "junior" students will act as helpers and will be guided by their supervisors throughout the project so that they can (1) obtain some hands-on experience/training, (2) better understand the basic operation and logistics of conducting a vision screening activity, and (3) learn more about the needs of the target beneficiaries. This experience will help students organize and implement their own vision screening project later.

The vision screening projects are designed and arranged in such a way that in each project, DSR and GUR students work together as a team. This is an advantage of having parallel DSR and GUR subjects. About 15 to 20 optometry and non-optometry students form a group to be responsible for a vision screening project. For the second project, if the group has selected a local NGO, they will visit the site and discuss with the organization to understand the characteristics and needs of the beneficiaries as well as the environment and constraints of the screening venue. Details such as the equipment set-up, participant enrolment and arrangement, lighting requirements and means of data monitoring during the screenings have to be determined during the site visits. Based on the information gathered, students will explore how existing facilities can be used to design a service-provision layout to maximize service efficiency. Students are encouraged to work independently as a group to communicate with NGO representatives directly during all these planning and discussions with the NGO while their supervisors offer advice and guided suggestions when necessary. Student themselves will also decide on the frequency and the actual time of the project-specific tutorials with their supervisors to discuss progress or solve problems.

During the course of the SL project, optometry students will interact with and provide advice to GUR students to ensure that they have a solid understanding of the basic operations and logistics involved in conducting the screening activity. Cases of participants who fail the vision tests will be discussed with their supervisors; and there will be further discussions with NGO representatives, the School and the participants in order to arrange appropriate follow-up.

#### 6.3 Assessment and Reflection

The assessment components are the same for both subjects.

First, there is a competence assessment after the lectures and practical/laboratory sessions. Students' preparation and proposals for their service projects are monitored and assessed by teachers through the project-specific seminars and workshops/tutorials.

Second, students are assessed during the screening activity by our academic faculty and staff. During the screening event, optometry students take a good health history of the participants, carry out preliminary examinations, as well as conduct a refraction estimation, binocular vision and ocular health assessments as appropriate, using the professional knowledge and skills they have learned from other clinical subjects. Non-optometry students also take health history, highlighting their concerns, and conduct vision screening assessments using specific instruments they have learned from our teaching. Throughout the event, supervisors guide and assess students' performance in terms of organization, planning, management, teamwork, problem-solving skills, communication skills, and so on. For optometry students, their clinical competence and professionalism are also assessed. Colleagues from the collaborating organizations are invited to provide feedback and evaluation to determine whether students have achieved the expected learning objectives.

Third, there are post-activity presentations for assessment. After the screening activity, students have to summarize and present their project findings. They will evaluate the implications of their results and how meaningful the project has been for them and for the community. Guided debriefing sessions will be held after the completion of the screening for students to summarize and share their SL experiences, emphasizing the responsibilities of their roles in the community.

Lastly, students are required to submit an individual reflective report to consolidate their learning experiences, and to suggest possible ways to fine-tune or improve the organization or planning of their service project, the working relations and their contribution to their team and service recipients. This is an important part of the assessment.

Understandably, the assessment criteria for the two groups of students are not the same. We have higher expectations of the performance and clinical competencies for optometry students. For instance, in the service project reflection, optometry students' discussion is expected to be more in-depth in terms of optometric knowledge and management, with references to support their design and planning of the screening activities. In comparison, the assessment of students enrolled on the GUR subject focuses more on general learning outcomes, self-reflection, service-rendering attitudes and group work contribution. If necessary, teachers will give non-optometry students one-to-one remediation to ensure that they meet the service-rendering skills assessment requirements. We do not expect them to look at the eye screening issue from the same angle of their optometry peers. Rather, we encourage them to apply their own professional knowledge and be creative in solving existing problems and overcoming limitations during the course of the service provision.

# 6.4 Benefits from the Subjects

#### 6.4.1 Learning gains for both groups of students

Our arrangement of conducting the two subjects at the same time is beneficial to both groups of students.

It is our observation that optometry students normally do not have any problems in carrying out vision assessments. The service projects, however, have provided them with an opportunity to organize a vision screening event so that they can consolidate their clinical skills and enhance their clinical exposure. Through interaction with different groups of service recipients from the community, they can better understand health care issues and concerns relating to the optometry profession, and are able to reflect on the roles and responsibilities of optometrists in the community. Working with peers from other disciplines has also helped them develop teamwork and communication skills.

Optometry students are trained to become clinicians and must follow a set of protocol when carrying out their professional tasks. This apparent constraint may prevent them from solving problems creatively. However, their collaboration with peers from other disciplines can stimulate them to think about alternative ways to tackle problems. A good example is the development of a mobile application program by a student from the GUR subject to facilitate the electronic recording of vision test results. Previously, test results were entered manually on heaps of blank record forms that students brought with them to their outreach service sites. A lot of time was spent on data entry afterwards. The student, who came from the Department of Electronic and Information Engineering, suggested developing an application program for instantaneous data input to reduce the time and effort spent on the process. The electronic tool allowed students to input the results at the test station into their mobile phones and forward them to the recording system. In addition, overall results could be generated easily using pre-set conditions for pass or failure of the vision tests. The program has proved to be a very useful tool for the team. For optometry students, this has shown how problems can be tackled from other perspectives. On the other hand, the engineering student has found great satisfaction in his contribution to the project.

As shown in the FHSS collaborative project mentioned earlier, students who have come from other disciplines within the same Faculty have found the subject particularly meaningful to them. Their feedback has shown that what they have learned from the subject as well as from each other has supplemented their health care knowledge gained from their own discipline.

#### 6.4.2 Cultivating social responsibility and empathy

We believe the GUR subject not only has raised non-optometry students' awareness of the importance of ocular health care, but also has helped them develop a sense of social responsibility. They would better understand the needs of the visually impaired in the community so that they can use their own knowledge and skills to improve their quality of life when they become a professional in their own field one day. A GUR student with an interior design background told us that she rarely had any opportunities to interact with the elderly before taking the subject. After she had taken the subject, she was more aware of old people's mobility problems when they have eye disease, and would have more consideration about their needs in her interior design work in future. This is a good testimony to students' development of social responsibility and empathy towards the needy after completing the subject. Many students have expressed in their reflective reports that they often take normal vision for granted until they discover that a lot of people, including children, the elderly, and even adults have poor vision because of eye disorders. They find themselves very fortunate, and feel empathetic towards the less fortunate and would start to think how they can help them. In one service project, a group of students were trying to conduct vision assessment in a home for the aged in Tuen Mun. There were about 40 elderlies waiting for the assessment. Most of them had lost their physical independence; they were either wheelchair bound or they needed to use walkers. The use of bulky instruments for the assessment was out of the question because these participants could hardly approach the instruments. Optometry students had to use smaller, hand-held devices instead, and they often had to bend down on their knees or lean over for 15 or 20 minutes in order to do the assessment. Some GUR students wrote in their reflective reports that they were touched by the deep involvement shown by their optometry peers and wanted to share their work too. We learn to pay more respect to each other's profession as a result.

#### 6.4.3 Our gains from working with students

The experience of working with students in the service projects has also been very fruitful for the teachers involved. We find that we should never underestimate the abilities of our students. The creativity of one student has led to the development of a very useful application program which has greatly improved the efficiency of our service. This has led us to think more about how we can better design our service activities so that they will inspire students to appreciate the core meaning of our work. We believe when this is achieved, they can be very creative and will make use of their knowledge to contribute to the enhancement of our service. The student who has developed the mobile "app" for us has already completed the subject. But he has continued to show an interest in our work and volunteered to be our helper in other service projects. (As a matter of fact, his final-year project for his own engineering studies is also about using electronic devises to support eye health care.) He continues to inspire us in our SL work.

#### 6.5 Further Thoughts on SL

There are also many other students who have served with a heart and contributed to the projects in many different ways. Perhaps at the Faculty or School level we can extend our SL work further by forming an alumni club which pools together enthusiastic SL students to continue to serve the community after graduation, using their own professional knowledge as well as the knowledge they have learned from each other. They can provide their service through their own professional network or by participating in PolyU's service projects as volunteers.

Another idea that we have developed is that we can use our service as a topic for research. We will be able to establish a Big Data bank if we can set up a standard protocol for vision screening and continue to gather the results through the SL subjects. The data collected from different sectors of the community will reveal their different needs for ocular health care or help to detect early stages of eye diseases for effective treatment. Eventually these Big Data will be useful for the government's formulation of public health care policies. Some other communities/local governments on the Mainland are already moving in this direction. We see the opportunities out there, and it pays to start thinking about taking our services to the next level through deeper and greater collaboration within and between disciplines.

# Engaging Fashion as a Communication Media for the Needy

Dr Frency Ng & Dr Patrick Hui<sup>1</sup> Institute of Textiles and Clothing

# 7.1 The Care Apparel Concept – How It Started at PolyU

When one thinks of fashion, one often associates it with clothes, shoes, or accessories that please the eye. But can it have other functions besides satisfying the aesthetic sense? International research studies show that clothes can be designed for functional purposes to help the needy such as the elderly or the disabled. Inspired by such studies, we did a research on the same topic in 2005. The study was considered to have completed satisfactorily with the publication of an academic paper. But it also led us to think more seriously about using fashion to serve the community. First, we tried to find out if there were any manufacturers of functional garments for the needy. While we found a few in North America and the UK, there was none in Hong Kong. It is difficult, if not impossible, to make from those overseas producers a purchase that is good for local use because their operation is very small, and they have only limited variety and styles to choose from.

We began to consider whether we could do something in that direction by integrating the concepts of "specialized clothing" and "social care" to serve those having difficulty in dressing themselves or having other special clothing needs. We thought about setting up a care apparel centre. The idea was supported by a philanthropic graduate, who provided a generous donation, and the management of the Institute of Textiles and Clothing (ITC), which allocated space for the centre. In 2007, the Troels H. Povlsen Care Apparel Centre (CAC) was set up. "Care apparel" means clothing that is specially designed to meet the needs of the elderly and the disabled in two ways: (1) it tries to reduce their dependence on others for assistance and enables them to take care of their personal needs as much as possible, and (2) it tries to meet their appearance requirements, thereby helping them to build self-confidence and self-esteem, and to integrate into society more easily.

Since its establishment, CAC has been offering a voluntary service to non-governmental organizations (NGOs) in designing and manufacturing functional clothing for their elderly or disabled clients. But we do not think that CAC should just operate like an ordinary tailor shop; it should help promote the care apparel concept of using specialized clothing to serve those who are in need. So we have tried to involve more people in this meaningful voluntary service, including experts from ITC, clothing designers and technicians, rehabilitation specialists, health care professionals, and students. Even colleagues from other departments and alumni of ITC have offered help. Finally, it would also be useful to document our experience and clients' feedback for sharing with the industry as well as the academic community.

Besides designing and producing tailor-made specialized clothing for the needy, CAC each year organizes the important event "Youreable Fashion Design" which comprises a booklet publication and a fashion show. The event aims to provide the

<sup>&</sup>lt;sup>1</sup> We work as a team to promote the concept of care apparel. Frency Ng is the Director of Troels H. Povlsen Care Apparel Centre of the Institute of Textiles and Clothing, and Patrick Hui is the leader of the service-learning subject "Engaging Fashion as a Communication Media for the Needy".

underprivileged participants with an opportunity to work with our students to design and make garment outfits for themselves or their loved ones. In collaboration with the partner NGOs, the event has already been staged for six times since 2009.

# 7.2 Becoming an SL Subject in 2015/16

What are the reasons for us to formalize our voluntary work by proposing for it to become a service-learning (SL) subject? Our voluntary service has already been delivered through CAC for a few years before PolyU decided to mandate SL as a requirement for graduation starting from the 2012/13 academic year. All along we have received very positive feedback from our clients and the collaborating NGOs about our service. So one reason to support our proposal is that the "formalization" will give due recognition to the efforts of colleagues who have volunteered to participate in the service out of sheer goodwill, including the staging of the very labour-intensive "Youreable Fashion Design" project. This recognition is an important motivation to keep colleagues to continue with the work, and to attract new colleagues to join the service.

Another reason is that the subject will provide adequate resources for us to produce the annual fashion design show at a formal and professional level. Previously the fashion shows were mounted on the Podium of the University. In the last (2015/16) academic year, we were able to stage it in the University's Hotel Icon. As well, we were able to engage professionals such as photographers and make-up artists in the show with the funding provided. The formal status of the event also gives the service recipients a memorable experience and a feeling of importance and respect. Finally, as the service component is a mandatory and assessable part of the subject, students are motivated to commit to the service, both in terms of their time and effort.

Our proposal was accepted, and the subject "Engaging Fashion as a Communication Media for the Needy" was launched as an open-for-all General University Requirement (GUR) SL subject in the 2015/16 academic year. The number of students registered in this first run amounted to 140, with about 60% coming from ITC.

#### 7.2.1 Subject components

In order to meet the requirements of an SL subject of the University, we have strengthened the theoretical and assessment components, and included the fashion design show as the SL project.

In addition to the e-Learning Module on the basic concept and practices of SL (which is common to all SL subjects), the subject consists of the following three components:

- 1. Discipline-specific lectures, tutorials, seminars and/or studio sessions: Lectures are used to convey the knowledge and skills specific to the subject. Tutorials and studio sessions are interactive sessions to encourage discussions and practical exploration of fashion design with styling knowledge and skills.
- 2. Project-specific seminars, tutorials and/or workshops: These sessions aim to enhance students' understanding of the target clients and other issues relating to the SL project, and to develop students' generic skills in planning and delivering the service.
- 3. SL project: Students will deliver their service in the form of planning, designing and producing fashion outfits for a fashion show and a booklet showing the photos of the final products, working hand in hand with their clients such as the elderly, disabled, and ex-mentally ill patients.

Topics covered by each of the components are listed in Appendix 7.1.

#### 7.2.2 Subject organization

The subject spans two semesters and is offered twice in each academic year. Students are expected to fulfil a total of 130 hours of study effort, and to render 40 hours of direct service. The lectures and project-specific seminars/studio sessions are held over seven weeks in the first semester. Students from other disciplines learn to use the sewing machine in specifically arranged practical sessions. Nonetheless, technical competence is not the core requirement of the subject. Both ITC and non-ITC students will be included in the same service team to ensure that there is an effective division of labour in the project, and a cross-fertilization of ideas for the achievement of the project target.

The actual delivery of service as well as the final booklet publication and fashion show are held over seven sessions in the next semester. The first three sessions of the service part involve finalizing the service recipients' designs, the creation of the actual designs and the construction of the garments. The fourth session is for a photo shoot at ITC's photography studio, and the photos taken will be included in the booklet to be published. The fashion show is held in the fifth session either within the University or a public venue depending on the availability of the venue. Reflective workshops are held in the last two sessions for students to share their service experience, and for us to obtain feedback.

#### 7.2.3 The SL project

The needy people that students serve in the project are the elderly, disabled, and ex-mentally ill patients from selected NGOs. Students form teams of four to six and use the basic fashion design knowledge and skills they have learned in the first semester to render their service. They plan, coordinate and conduct small workshops for the service recipients on fashion design, styling and garment making, and help them create and style an outfit for themselves or their loved ones. Each team includes both ITC and non-ITC students, who are encouraged to use their own disciplinary knowledge and skills to solve problems and achieve their project target.

Students have to pay visits to their clients to understand their needs and their design ideas for the garment they have in mind. After the whole team (including the client as the designer) has agreed on the design, the students look for the right kind of fabrics and start the garment making process. Teachers as well as technical staff of CAC will advise or assist in pattern cutting, sewing and garment fitting where necessary. Students also take photos for use later.

At the end of the course, the teams present their finished garments in a fashion show held in the University or in a public venue. A booklet showing the photos of the garments is also produced. A professional hair and make-up sponsor is sourced for the photo session and the fashion show.

#### 7.3 Student Assessment and Reflection

Students will be assessed both individually and as a team. The assessment components and the relative weighting are as follows:

Individual assessment:

- 1. Performance in the e-Learning Module and Project-specific seminars and workshops: 20%
- 2. Performance in the rendering of the service: 30%
- 3. Reflective Journals and reports: 30%

Group assessment:

4. Quality of the finished garment, and the final fashion exhibition and/or the fashion show: 20%

The e-Learning Module and Project-specific seminars and workshops include assignments and learning tasks that are designed to assess students' ability to link SL with the academic content of the subject, and their understanding of their roles and responsibilities in society.

Students' attitude and performance during the rendering of the service are the major components for assessment. They include students' degree of engagement with the service recipients, their collaboration with other students, and their interaction with the service recipients and the partner NGOs. These components are a reflection of students' ability to communicate effectively, their sense of civic responsibility, professional ethics and empathy for people in need, as well as their ability to work collaboratively and to apply their knowledge and skills to deal with complex problems in the service setting. We also obtain feedback from the service recipients and the partner NGOs regarding the quality of the service delivered.

Students are required to write reflective journals and reports both during and after the SL project to demonstrate their ability to (1) link their SL experiences with the academic content of the subject, (2) reflect on their service experience and learning gains as well as areas for improvement, and (3) reflect on their roles and social responsibilities. To guide students to use reflection as a tool for learning, discussion and review sessions are held both during and after the SL project.

The assessment of the quality of the finished garment and the final exhibition and fashion show reflects in totality students' understanding of the discipline-specific concepts, their ability to apply their knowledge to the service project and work as a team, and their capability to communicate effectively and empathize with the service recipients. Each team works to present their finished garment with the designer at the fashion show, and where possible with the person for whom the garment is made.

#### 7.4 Benefits of the Subject

#### 7.4.1 Students' learning gains

One may think that the subject is more suitable for ITC students because they will find it comfortable in producing the garment required at the end of the course. But our experience has shown that both ITC and non-ITC students are able to benefit from the subject and contribute to the SL project. For ITC students, the service component gives them an opportunity to apply their theoretical and practical skills learned from their ITC subjects in a real-life situation, thus reinforcing their understanding of those subjects. On the other hand, non-ITC students are able to gain exposure to a new subject on care apparel manufacturing, and acquire a basic understanding of fashion and image styling as well as garment making. More important, they can contribute to the success of the SL project by utilizing their disciplinary knowledge and skills. For example, nursing students' knowledge of rehabilitation will be very useful in the design of specialized garments to meet the client's functional needs, and students from Marketing or Bilingual Studies can help to draft the texts of the booklet or to prepare postcards for publicity purposes.

The combined efforts of students from different disciplines can lead to extraordinary results. In the last run of the subject (2015/16), one of the service recipients would like to express her gratitude to her mother after they had gone on a tour to Singapore together. She was impressed by the Super Trees, a man-made structure erected in the

Gardens By the Bay as a tourist attraction, and wanted to give her mother a dress with a tree-like design. There were four students in the team assisting the service recipient, and two of them were male students of accounting and engineering disciplines respectively. These two students could hardly help with the sewing work, but they made great contribution to the finished product by searching for information on the design of the structure, sourcing the right material for making the tree branches, and pasting the branches on the right places on the dress before sewing. All these were very time consuming tasks, and they did their work well. We were much impressed when the finished product looked fabulous.



The SL project has enabled students to work with a diverse group of people for the achievement of a set target, thereby enhancing their communication and teamwork skills. In particular, working closely with underprivileged clients of different ages and varying degrees of disability has helped students learn how to communicate with people in need without arousing their sensitivity to their inadequacies. The collaboration has also alerted them that the underprivileged have their own ideas and requirements too.

From our observation, we believe that the SL experience has broadened students' horizon to encompass societal concerns. We have noticed that students have become more matured at the end of the course, and their views about the needy have become more positive too. In the last "Youreable Design Show", we saw how each team of students had worked hard to help the designer as well as the wearer present the garment on the catwalk. They had to ensure that the presentation could be managed by their elderly or disabled designer, and that it would be appealing to the audience at the same time. We all know too well that presentation on-stage is very difficult work: a few minutes' presentation on the stage would take the team hours of practice. We always tell our students that all their hard work in making the event successful and enjoyable for their underprivileged clients will pay, because they have given them not just a garment, but also a good memory.

#### 7.4.2 Benefits to the service recipients

The tangible benefits to the underprivileged participants in the SL project are that through working with our students they can acquire some basic ideas and skills for the creation of a fashion design, a styled image and a piece of wearable garment. The clients are proud that their designs can be shown to an audience in a professional manner. They become aware that they have their own abilities, and that with assistance, their dream can be realized.

We believe that the process is just as important to the service recipients as the end product. The fashion design process has served as a means for them to demonstrate their creativity and therefore helps them rebuild their self-confidence and self-esteem. Through interacting with students, they also improve their communication capability, and hence are able to better collaborate with others and better integrate into the community. Many of the service recipients told us that the project and the subsequent fashion show were an important and happy event for them in their life. We believe that we have fulfilled our goal of using fashion as a medium for communicating with and caring for the needy.

# 7.5 Teachers' Reflection

We have great satisfaction when we see what started as a small scale voluntary service becomes at the end a formal SL subject in which many students are able to take part in such meaningful work with systemic support. We are quite excited to note that the subject is one of the much sought after SL subjects among PolyU students. We believe this is an indication that we have succeeded in promoting the notion of using apparel to care for the needy beyond ITC, and made a step forward in building a harmonized community for the abled and the disabled.

Nonetheless, there are problems that we have to address so that SL can be sustained in the University. A common problem that all SL teachers face is workload. In our SL projects we actually ask our underprivileged clients to take part in the creation of the finished garment. A lot more time is required, not only in socializing with them in order to win their trust in our service, but also in communicating with them about their design ideas. Assisting students in sourcing the right material to bring about the effect of a design is also a very time-consuming task. The time for all these tasks which are carried out after class can never be reflected in the subject timetable.

The workload issue also leads to the problem of succession. Many colleagues are worried that the workload of an SL course does not match that of a three-credit subject, and thus have reservations about taking up the work. This may be a fair decision for young teachers who have their own priorities in the development of their academic career. Perhaps part of the problem can be solved by pairing up a senior teacher with a younger colleague in running the subject. Presumably senior teachers are already more settled in their academic career, and so they can afford spending more time on organizing and planning the subject. Younger colleagues can play an assisting role at the beginning, and when they in turn can spare more time later, they would have already acquired the experience and would be more comfortable in taking up the responsibility.

The issue of sustainability also applies to the collaboration with NGOs. It is pertinent that we show to our partner NGOs that we are really trying to provide a service to the needy and to the organizations, and we should not give them the impression that we come to collect data for a research purpose. Having a trustful relationship with our community partners is crucial to maintaining a collaboration that brings about mutual benefits. As more educational institutions subscribe to the idea of SL, the competition for NGOs for partnership becomes bigger. PolyU should be more forward-looking and start exploring ways to innovate and upgrade our collaboration with and service provision for collaborating NGOs, or they may not wish to work with us.

The smooth running of a SL subject often depends on the available support resources. Bureaucratic administrative decisions regarding the use of resources sometimes affect our work too. For example, sharing of resources across departments is currently difficult, if not impossible. It would be very useful if there is a provision for sharing resources between departments through mutual agreement. In our case, for instance, our efficiency in the design of the garments would be much enhanced if we can be given access to 3-D printing facilities in the University. As another example, the University's decision to contract out furniture delivery and other logistic services to an external company is also a concern to us because every year we have to pay a relatively high cost for getting the furniture we need for the fashion

show and other related activities. Some flexibility in the policy may help to ease our work in budget planning.

To conclude, we have gained satisfying experience in delivering the SL subject. Through the formal structure, we are able to involve more students to serve more people in need, and students have learned to apply their knowledge and skills to solve real-life problems and have enhanced their communication and teamwork skills. Together we have offered to the service recipients not only a wearable stylistic garment of their own design, but also a joyful memory.

# Appendix 7.1

Topics covered by the subject

- 1. e-Learning Module on the concept and practices of SL:
  - Principles, concepts and myths of SL
  - Benefits of SL to students, the university and the community
  - Ethical issues on SL
  - Basic concepts and theories of social problems, developments and justice
  - Social responsibilities of global citizens as intellectuals and professionals
  - Proper attitudes and behaviours in service delivery
  - Developing a service project proposal/plan
  - Effective team work and problem solving skills in SL projects
  - Reflection as a tool for learning
- 2. Discipline-specific lectures, tutorials, seminars and/or studio sessions on fashion design concepts, Issues, skills and making-up process
  - Fashion creativity as a communication medium
  - Psychological and sociological influences of fashion such as social perception and social influence of fashion on the community
  - Professional practice of service provider
  - Fashion trends
  - Fashion sourcing
  - Fashion design and styling for different lifestyles and body shapes
  - · Method of taking body measurements
  - Basic garment pattern and fitting techniques, and sewing sequences for the making of a completed garment
- 3. Project-specific concepts, issues and skills
  - Understanding the historical, cultural, and socio-political background of the target clients/underprivileged communities
  - Health, safety and other issues relevant to the service project
  - Moral and ethical concerns specific to the project and beneficiaries



# 8.1 Rationale for Offering the Service-Learning Subject

One of the pressing issues in Hong Kong is the provision of adequate housing for its population. There are many reasons that give rise to the housing problem in Hong Kong. Without a long-term housing policy, any injection of efforts and resources by the Government can only bring about temporary results and cannot solve the problem fundamentally.

The complicated housing problem has led to other issues in the society. One of these is the rapid rise in the number of illegal sub-divided units (SDUs) in recent years. As housing is in high demand, prices and rents of properties rocket, and many landlords have tried to obtain an even higher economic return by sub-dividing their flats into a number of small units so as to accommodate more households within the flat. The units, which sometimes can be as small as 4m<sup>2</sup>, are self-contained with toilet and/or kitchen facilities. Due to poor workmanship in the alterations of the original flat structure, the substantial extra loading on the water and electricity supplies for more households in the flat, and essentially non-compliance to safety regulations, the health and safety conditions of SDUs have caused much public concern. Yet, more and more SDUs are found in poor districts of Shamshuipo and Yaumatei, as well as in more affluent areas such as Wanchai and Sheung Wan. This indicates that SDUs are popular not only among the poor but also among those who are in the higher income group. Despite the many possible hazards such as concrete spalling, water leakage and electricity short-circuit that residents of SDUs have to face, people still prefer to live in such units because they do not have to share living facilities with other households, and because the rents seem to be more affordable as tenants only pay for a small part of the rent for the whole flat.



Another problem that requires attention is urban decay. The term refers to the process whereby old districts of a city fall into disrepair, and buildings in these districts are often dilapidated due to lack of maintenance. Urban decay is found in some old districts in Hong Kong, such as Shamshuipo, Kowloon City and Wong Tai Sin. Although many dilapidated buildings in these districts require substantial repairs or renovation, the residents there, who are mostly in the low-income group, cannot

afford to pay for the work. This group of poor people, many of whom are elderlies, singletons, immigrants, and the less educated, become the most vulnerable in the society when faced with the housing problem.

Hong Kong's thorny housing problem cannot be solved easily. Nevertheless, it is possible that we use our expertise and professional skills to help to improve the conditions of the underprivileged group who are living in SDUs or dilapidated buildings. A teaching team<sup>1</sup> in the Department of Building and Real Estate including the author has thus developed the service-learning (SL) subject "Housing for the Community" with the aim of involving our students in an SL project that can help to improve the living conditions of the underprivileged community or alleviate the difficulties they face. Through engaging students in a service experience, we wish to help them to apprehend the housing problems faced by the disadvantaged group, apply classroom knowledge to solve real-life problems, and achieve all-round development by cultivating generic skills in critical thinking, problem-solving, teamwork, and communication, as well as an awareness of contemporary societal problems and a sense of empathy towards others.

# 8.2 The SL Subject

The SL subject "Housing for the Community" has been offered as a GUR (General University Requirement) subject specifically designed for students from the Faculty of Construction and Environment since the 2011/12 academic year. Students applying for the subject are required to have completed the following two subjects: "Construction for Better Living (Freshman Seminar)" and "Managing the Built Environment". Applicants also go through a selection process. In order to be selected, they have to demonstrate that they are mature, independent, pleasant, caring, and willing to serve, as well as able to read and write in Chinese and speak fluent Cantonese.

Beside the e-Learning Module on SL, its components include discipline-specific lectures, seminars and tutorials, project-specific hands-on training workshops, and an SL project (field study) which requires students to deliver 40 hours of service to the disadvantaged community.

To help students to get a true picture of the pressing housing issues in Hong Kong and, in particular, of the housing conditions that disadvantaged people face in districts that are experiencing urban decay, we have developed the subject in collaboration with the Urban Renewal Authority (URA), Engineers Without Borders, the Chartered Institute of Housing (Asian Branch), and other Non-Government Organizations (NGOs) such as the Society for the Community Organization.

#### 8.2.1 Pedagogical design

The subject makes use of a 3-tier approach (Fig. 8.1) which aims to enable students to gain an understanding of the housing problems of the disadvantaged groups through a service experience, and to assess to what extent adequate housing as defined by UNHabitat has been achieved in the districts under study. The objectives and the intended learning outcomes of the subject are listed in Appendix 8.1, and a brief explanation of UNHabitat's definition of adequate housing is provided in Appendix 8.2.

In Tier 1, lectures are organized to provide students with the basic academic and technical knowledge of building in preparation for the field study in Tier 2. Seminars are given by the collaborating professional bodies and NGOs to discuss issues

<sup>&</sup>lt;sup>1</sup> Members of the teaching team are Dr Barbara Leung (Subject Leader), Dr K. F. Man and Edmond Wong.

relating to the housing conditions of the most vulnerable group in the society, and to introduce students to the assistance schemes and services available to the households. The design of the field study using a Three-Pronged Model (Fig. 8.1) is also developed at this stage.

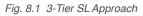
To prepare students for the actual field study, there are interactive, hands-on training workshops for them to develop the survey forms and interview techniques before the site survey and home visits. There are also technical workshops to equip them with the necessary knowledge and skills to perform building inspection and small household repair work so as to help improve the living environment of the disadvantaged group. Since students may encounter people with different backgrounds when they visit the households, there are role play sessions for students to learn the importance of exercising self-control and to avoid getting emotional if unexpected incidents occur.

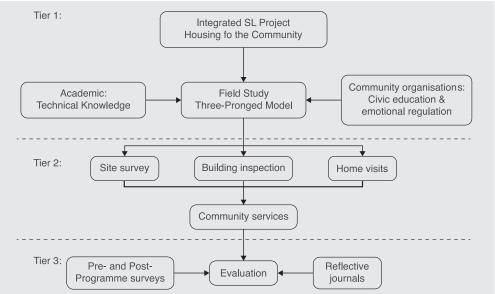
Upon the completion of training in Tier 1, students will conduct field study in Tier 2. Students are divided into groups and assigned to deliver their service in different districts which are classified as undergoing urban decay. According to the Three-Pronged Model, the field study consists of the following parts:

- 1. Site survey study of the public facilities and community services in the surrounding area.
- 2. Building inspection examination of the conditions of the buildings in which the selected households are located.
- 3. Home visits investigation of the satisfaction of the residents about their housing conditions and problems they encounter.

Based on the information gathered in the field study, students provide tailor-made services to meet the specific needs of the households they have visited. Group presentation sessions are held after the field study for students to report on the survey findings and the services that they have conducted.

After the field study has been completed, the evaluation starts in Tier 3. At this final stage, students reflect on their experiences in the field study, synthesize the information collected, evaluate the situations encountered and contextualize their civic responsibilities. Pre-and post-programme evaluations are also conducted via questionnaires, final reports and reflective journals to obtain students' feedback on the field study and their learning experience.





Source: Leung and Luk (2015)

#### 8.2.2 Student assessment and reflection

The subject adopts continuous assessment and students' performance is assessed as follows:

- 1. Community service rendered -40%
- 2. Group presentation -20%
- 3. Final Report and Reflective Journal 40%

The SL project (the field study) requires students to render 40 hours of direct service to the underprivileged community. Students are assessed on their skills in implementing the activities, communication and problem-solving, as well as their attitude towards and commitment in the service. Feedback from the partner NGOs and the service recipients are also taken into account.

The group presentations are assessed according to the following criteria: students' oral communication skills, their familiarity with the topic, the quality of the visual aids, coherence of the discussions given by individual group members in the presentation, and the group's responses to questions raised in the Q&A session.

Finally, students are required to submit a Final Report and a Reflective Journal. While the Final Report indicates students' understanding of the contemporary issues related to the housing needs of the community, the Reflective Journal allows students to reflect on their learning experience from the field study and from providing a service to the community.

#### 8.3 The SL Project Conducted in 2014/15

In the last SL project (2014/15), students were assigned to three districts, namely Shamshuipo, Yaumatei and Hunghom, to deliver 40 hours of community service. They planned and conducted site surveys, building inspection and home visits in the districts with support from collaborating professional bodies (e.g. URA) and NGOs. Through this service experience, students gained a better understanding of the housing issues that the underprivileged community was facing, and reflected on the roles that they could play both as a real estate professional and a responsible citizen in helping the residents.

Useful information was obtained from the work and service carried out. The surveys of facilities in the districts were conducted with reference to UNHabitat's definition of adequate housing. On the one hand, it was found that although the three districts under study were affected by urban decay, public and community facilities with regard to the provision of educational, medical and recreational services were found to be adequate in meeting the daily needs of the residents. On the other hand, findings from the inspection of buildings in the three districts were less satisfactory. Serious safety and hygiene problems were found in many of the buildings, mainly due to the installation of illegal structures for SDUs. The problems included concrete spalling, obstructed fire exits, obsolete fire-fighting equipment, and dangling electricity wires. Rats and cockroaches were also often seen.

During the home visits, the residents were surveyed to obtain the following information for further analysis or follow up:

- The unique characteristics of the districts under investigation.
- The demographic characteristics of the members of the households visited.
- The residents' satisfaction of their housing conditions.
- The problems they encountered and their needs regarding the provision/quality of the housing.
- The availability of recreational facilities and community services in the surrounding area.

Based on the information obtained from the visits, assistance and/or services were tailored to meet the specific needs of the residents. For example:

- For residents of buildings which were under the urban renewal or redevelopment programme, professional advice on the legal proceedings, interpretation of relevant documents, and/or information of assistance schemes available were provided to the residents.
- For residents of buildings which were under a voluntary maintenance scheme, assistance was offered to help the residents to contact relevant parties and/or apply for subsidies.
- Small repairs were offered to households to improve the health and safety conditions of their units. These included the installation of hand-rails and anti-slippery mats in bathrooms for elderlies, repair of damaged water taps, provision of small electrical appliances to families with financial difficulties, etc.

Partner NGOs helped to conduct service matching for the students and the households, and students recorded all the services rendered in detail in log books.

It was found that most of the residents living in SDUs or dilapidated flats were elderlies. Although the units were provided with a cooking space and a washroom, they hardly met the health and safety requirements specified by UN. In addition to the issue of sub-standard housing, other problems that the residents faced included under-consumption of space (crowdedness), tenure security and affordability. For example, cases such as a family of three jammed in a cubicle of 100ft<sup>2</sup>, concrete spalling, water seepage and electrical short-circuit were common due to unauthorized alteration works inside the flat.

#### 8.4 Our Reflection

Upon completion of the programme, we conducted pre- and post-project evaluations to ascertain the impact of the subject and the SL project on students and the community.

Findings show that students treasure the learning experience of the subject. They found the technical workshops offered by the teaching team, the professional bodies and the NGOs were particularly useful for their field study. We observed that students had applied what they had learned to help solve the problems faced by the residents. They were able to find relevant assistance schemes or carry out small repair work for the residents.

Regarding the development of personal qualities, students said that they became more aware of the problems faced by the underprivileged groups after taking the subject. They had developed a sense of empathy and thought more about their social responsibility. The following quote from a student's reflective journal is quite representative of the views of most students:

"Getting myself enrolled in this course has broadened me with new perspectives when looking at housing problems, which include the lack of facilities, social welfare and services, poor building structure and others. These problems cannot be alleviated unless different parties bear their own responsibilities... By getting ourselves to home-visit the disadvantaged households, I become more aware of and understand the real needs of these families. We have always been sitting in classroom, getting lectured and studying issues that others have raised, so what is better than getting into a real situation, knowing what people needs, and finding out the problems and solutions by ourselves?"

Nevertheless, some students said in their reflective journals that they felt frustrated when they saw that their services were only piecemeal and could not help to solve the housing problems faced by the disadvantaged group. Here is a quotation from a student's reflective journal:

"In our case study, the households clearly reflected that living in a small cubicle is not the type of living that they want, but they have no choice ... Being students, we have no power and no money. ... Although we cannot give them tangible help, we would like to fulfill our roles. We believe that each tiny contribution from everyone can change the society in the long run. As a member of the society, we should act rather than just sitting in the classroom, go and seek for changes."

Research shows that SL has a positive impact on students' learning and personal development (Eyler et al, 1997; Leung & Luk, 2015). From our findings and from what we have observed, our SL subject not only enables students to apply theoretical and technical knowledge and skills to solve real-life problems, but also facilitates their all-round development as a real estate professional and a responsible citizen.

The service rendered had also benefitted the disadvantaged community living in the SDUs or dilapidated flats. They felt the care shown to them by students during the home visits. Many of them found the information regarding assistance schemes provided by students useful for resolving some of their housing problems. Small repair works carried out by students, in particular, had helped to improve the living conditions of the elderlies.



We hope we can continue with this meaningful work to help students sustain their professional and personal development through serving the community.

#### Acknowledgements

We would like to thank the Society for the Community Organization, the Urban Renewal Authority, the Chartered Institute of Housing (Asian Branch) and the Engineers Without Borders for their support in the organization of the seminars, workshops and community services.

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#### Appendix 8.1

Housing for the Community

Objectives

- 1. To broaden and deepen students' knowledge of real estate and housing and their impacts on the community.
- 2. To enhance students' understanding of government intervention in the real estate and housing markets and policy implications on housing for the community.
- 3. To foster students' application of their knowledge in helping the underprivileged and disadvantaged members who are in housing need.

Intended learning Outcomes

Upon completion of the subject, students will be able to:

- 1. Utilize economic principles to analyze the performance of the public and private housing markets and the equitable distribution of land and housing resources.
- 2. Apply the real estate knowledge and skills they have acquired to help the underprivileged community affected by urban decay.
- 3. Demonstrate empathy for the disadvantaged people in housing need and a strong sense of civic responsibility.
- 4. Reflect on their role and responsibilities both as a real estate professional and a responsible citizen.

#### Appendix 8.2

UNHabitat's Categorization of Adequate Housing

Although many discourses define adequate housing limited to physical conditions, UNHabitat has offered a categorization of adequate housing in a broader sense which circumvents not only affordability and security of tenure, the habitability of the housing unit and the building condition, but also the community services and supporting facilities for the livelihood of the households shown in the following table. The definition of adequate housing ascertained by UNHabitat (2009) is of significance because the ten prescribed dimensions have been accepted by the general public ever since as the underlying principles of the form of shelter to be provided in meeting adequate housing.

Adequate housing	UNHabitat categorization
Affordability and security of tenure	Security of tenure Affordability Accessibility
Habitability of housing unit	Habitability
Building condition	Materials Facilities
Community Services and Facilities	Availability of services Infrastructure Location Cultural adequacy

Categorization of adequate housing by UNHabitat

Source: UNHabitat (2009)



# Reducing the Scientific Divide in Secondary Students through STEM (Science, Technology, Engineering and Mathematics) Projects

Dr Hin Chung Lau Interdisciplinary Division of Biomedical Engineering

# 9.1 Rationale for Offering the Service-Learning Subject

STEM is an acronym for Science, Technology, Engineering, and Mathematics, which encompasses subjects such as biochemistry, computer science, mechatronics, physics and many others. STEM subjects are usually multidisciplinary and affect every component of our daily life. For Hong Kong to remain competitive internationally and be able to meet the challenges in an era of rapid developments in science, technology and economy around the world, it is essential that we raise public awareness of the importance of STEM and provide our students with a sound STEM education.

The 2015 Policy Address of the Chief Executive of Hong Kong emphasized the development of Innovation and Technology as an important means to maintaining Hong Kong's competitive edge. Further to the Address, the Government solicited public opinions on the implementation of STEM education in schools in order to actively promote Innovation and Technology in Hong Kong. As academics in the relevant discipline, a group of educators in the Division including the author believed that we could and should have a role to play in achieving this objective. At the same time, we were mindful of the difficulties encountered by students in learning STEM in disadvantaged schools. We thought we could make a contribution by training and organising PolyU students to plan and run STEM workshops for disadvantaged students to raise their level of scientific literacy and to develop scientific thinking. To fulfil this aim, we decided to propose a service-learning (SL) subject "*Reducing the Scientific Divide in Secondary Students through STEM (Science, Technology, Engineering and mathematics) Projects*"<sup>1</sup>.

# 9.2 Pedagogical Design of the Subject

Our proposal was accepted and the subject has been offered since the summer of 2013. It is run twice each year, as a two-semester subject spanning Semesters 2 and 3 (BME2S03), or as a one-semester subject in the summer term (BME2S03S). The ultimate objective of both subjects is to make PolyU students aware of the impact of scientific literacy on young people and the community, and to train them to plan and run STEM workshops for the target student groups in disadvantaged secondary schools. It is also expected that through this service experience, students can improve their generic abilities such as innovative problem-solving, communication and teamwork skills. (A list of the objectives of both subjects is given in Appendix 9.1.)

Previously, both subjects were available only to students from the Faculty of Engineering, the Faculty of Construction and Environment, and the Faculty of

<sup>1</sup> The teaching team comprises Dr Hin Chung Lau (Subject Leader), Dr Thomas Ming-Hung Lee and Dr Yan Ping Huang.

Applied Science and Textiles. Starting from the 2015/16 academic year, the subject is offered as a GUR (General University Requirement) subject open to all undergraduate students of the University.

#### 9.2.1 Subject components

The subject consists of four components: the e-Learning Module on SL, discipline-specific lectures, project-specific seminars and training sessions, and a SL project (the STEM workshops). Students are expected to fulfil a total of 135 hours of study effort, including 40 hours of direct service of organising a University campus tour for the target students and running STEM workshops in different schools.

The e-Learning Module on SL, developed by the Office of Service-Learning, is common for all SL subjects. It introduces students to the concept and practices of SL, and helps them understand the purpose of SL and develop a correct attitude. Students are required to successfully complete the module within the first four weeks of the first semester of the subject.

Following the completion of the e-Learning Module on SL, discipline-specific lectures are organised to let students understand the principles of scientific literacy, and how secondary school students' fear of STEM-related subjects can adversely affect Hong Kong's competitiveness internationally. Methods of scientific thinking are introduced to prepare students to design STEM workshops that will help the service recipients (target students) to make inquiries, formulation, hypotheses, prediction and experimentation with a scientific mind.

Prior to the delivery of the service, there are different seminars to help students to plan and deliver their STEM workshops. Teachers from the collaborating schools are invited to give seminars on the backgrounds of their schools, the challenges faced by their students in studying STEM-related subjects, and teaching/classroom management skills. In the seminars, the PolyU teaching team discusses with students on ethical concerns related to working with young people in the school setting. We also invite student scholars of SL (former students of the SL subject who have been awarded the Service-Learning Scholarship) to act as student leaders to share their first-hand experience in reducing the scientific divide in secondary school students, and to provide support as appropriate.

In addition, there are project-specific training sessions to refresh students' memories of the different STEM theories that they will use in their service. Students also learn the knowledge and skills they need for the development of the workshop activities and related teaching materials for the STEM workshops they are going to run. The topics include: introduction to biomedical engineering and muscle signal, basic electronic circuits, energy transfer in electric motors, basic software programming, and optical science. Upon completion of the training sessions, PolyU students will be able to innovate different game designs such as the pin-ball machine, the doll-catching claw crane, obstacle avoidance games and table-top football games. Students are expected to spend about 40 hours of study effort on reading, self-study and preparing the materials for their STEM workshops.

#### 9.2.2 Student assessment and reflection

The e-Learning Module on SL and project-specific seminars and training sessions include assignments and learning tasks that are designed to assess students' ability to link SL with the academic content of the subject, their understanding of the problems of and their empathy for the disadvantaged community, as well as their reflection on their roles and responsibilities in society.

Prior to service delivery, students work in teams to develop proposals/plans for the STEM workshops, and organize activities which provide junior secondary school students with sufficient knowledge and skills to build a DIY game controlled by electromyography (EMG). Examples of STEM activities include designing DIY games to illustrate key STEM concepts, designing worksheets and hands-on experiments for students to practise applying STEM concepts, and running training sessions for students' exploration in computer programming. Details of the workshop activities are consolidated into a "Service Handbook" which acts as a mini-textbook and homework booklet to be distributed to the students on the first day of service. The proposal and the Service Handbook are assessed as they demonstrate students' understanding of the relevant STEM concepts and their ability to apply what they have learned in the lectures in designing activities to enhance their service recipients' scientific literacy.

Students' performance in the SL project is also assessed through a 1-page reflective journal submitted after the first 20 hours of service, as well as a 2-page reflective report and a team reflective presentation video to be submitted at the completion of service. The reflective journal and the presentation video require students to demonstrate, in both written and oral forms, their ability to (1) link their SL experiences with the content of the subject, (2) empathize the difficulties and challenges faced by secondary school students and address them responsively, (3) understand the impact of scientific literacy on young people and the community, (4) reflect on their SL experiences to identify their learning gains as well as areas for future improvement, and (5) reflect on their roles and responsibilities in society.

Students are supervised throughout the service period by members of the teaching team, teachers of the collaborating schools and/or the student scholars of SL. To guide students in using reflection as a tool for learning, reflection and review sessions are held at the end of each service day at the schools. Topics to be discussed in the sessions include (1) students' attitude and performance in the rendering of service, (2) their collaboration with other fellow students, and interactions with the service recipients, (3) their degree of engagement with the target students and their teachers, and (4) responses or reactions from the target students that may reflect the difficulties and challenges they face. Where appropriate, the teaching team shares the experience of other teams or from past service projects to stimulate students' discussions to help them to reflect more deeply. Students' discussions during the reflection sessions are testimony of their reflection on their learning experience, and the breadth and depth of their learning.

Since students work at different schools and the nature of the projects varies, we take particular care to ensure a fair and objective assessment across the different teams of students.

#### 9.3 The SL Project

The STEM workshops are planned for disadvantaged junior secondary school students. We target our service at schools in which a relatively large proportion of their students come from disadvantaged groups such as new immigrants, ethnic minorities or students with special educational needs, but lack resources to address the problems of the students. To identify suitable schools for collaboration, we conduct site visits to find out from teachers resources available to them and their future plan for STEM education in their school. We also explain to the teachers the purpose of SL for PolyU students, the importance of the learning aspect of our students, hence the necessity of providing feedback to PolyU students to help them reflect on their SL experiences, and how our STEM workshops differ from activities

organized by other volunteering bodies. Mutual understanding between the SL teaching team and the collaborating schools is essential in order that the service brings benefits to all the parties involved: PolyU students, the service recipients, and the schools.

The actual service consists of STEM workshops and a guided tour for the secondary school students to visit the Biomedical Engineering laboratories and STEM-related facilities at PolyU. The workshops are usually conducted on six separate days at the secondary schools. School teachers and student scholars of SL are sometimes invited to contribute in some of the workshop sessions where appropriate. The guided tour is organised to further promote the interdisciplinary nature of Biomedical Engineering and other STEM-related teaching and research activities at PolyU to the younger generation of Hong Kong.

The exact nature of the STEM workshops may vary for different schools, depending on the needs of individual schools. But they all have the common theme "DIY game controlled by electromyography (EMG)". The workshop activities and the related Service Handbook provide the secondary school students with sufficient STEM concepts and theories for building their own game from scratch. The games must be related to the STEM concepts and theories covered in their workshop activities and controlled by EMG, an electrical signal from using their muscle, instead of an ordinary joystick or keypad. This element adds excitement to the target students' game building exercise and can further enrich their learning experience in STEM.

#### 9.4 Benefits of the SL Subject

#### 9.4.1 For PolyU students

PolyU students learn a lot from the SL subject and its related SL project. The preparation of the STEM workshop activities prior to the service delivery is already quite challenging to our students. During the service period, they are exposed to the constraints faced by the teachers and students in the schools, and they encounter difficulties of teaching and classroom management. They are required to apply the knowledge and skills they have learned from the subject to deal with these real-life problems in the service setting.

Since the subject is targeted at Year 1 and Year 2 undergraduates of the University, students have the opportunity to work collaboratively in multidisciplinary teams to achieve the project goals. Past projects show that students had benefitted from working as a multidisciplinary team and achieved brilliant results, though they have also learned that such a team could be dysfunctional. They have to communicate effectively both with each team member to deliver an effective service, and with the teachers and students of the school in order that they understand the school's needs and empathise with their situation.

Through direct contact with the younger generation in STEM workshops, PolyU students are able to better understand the impact of scientific literacy on young people and the community, and to reflect on their roles and responsibilities as a professional in their chosen discipline and as a responsible citizen in society.

#### 9.4.2 For the secondary school students

We observe that many of the disadvantaged students in the collaborating schools are equally bright compared to students of the so-called mainstream schools. Their exposure to more innovative and interesting ways of looking at STEM concepts has helped them improve their scientific literacy and develop a capacity for scientific thinking. They are much motivated to spend more time on their other studies. We have found notable indications of positive impact of the SL project on the service recipients. From students' responses to our questionnaire survey conducted before and after the STEM workshops, we have found the following results:

- 1. After the workshops, more students believe that a good foundation in mathematics and science is necessary for studying technology subjects, indicating that they are more aware of the roles of the two subjects in STEM.
- 2. Few students believe that understanding STEM concepts requires exhaustive training, showing that they have acquired a positive attitude towards STEM.
- 3. More students show an interest in technological products and would like to try their hand at repairing small items at home after exposure to a variety of hands-on experiments and the DIY game building workshops.
- 4. More students wish to engage in STEM-related career in the future.

The SL project has given junior secondary school students an opportunity to learn from their young workshop tutors, who are mostly Year 1 and Year 2 university students. These two groups of students have similar experience; they are both moving to a new, important stage of learning and this has facilitated their sharing of learning experience. Because of their close contact during the service period, secondary school students are aspired to become university students themselves one day.

#### 9.4.3 For the collaborating teachers

The SL project has helped the collaborating teachers to better understand their own students. They observed in the workshops how their students behaved in a different learning atmosphere, and became more aware of their full potential. This has stimulated them to further enhance their teaching methods or tailor their teaching content in response to their students' readiness and interest.

The SL project has also enriched the work of the teachers. For example, the collaborating schools usually allow their students to stay after school until their parents come to pick them up after work. As teachers of these schools are often overburdened with administrative duties or have student cases to work on, their students are simply asked to do their homework or read quietly in the classroom. The STEM workshops provide teachers with ideas and ready-made materials for organising after-school learning activities or coordinating interest groups for those stay-behind students.

Our partnership with the schools continues after the completion of the SL projects. Some of our teaching resources have been left with the schools, in support of their future activities such as for displays or demonstrations at schools' open days or science fairs, or for the establishment of schools' science clubs.

### 9.5 Our Difficulties and Reflection

We have come across a number of difficulties during the implementation of the SL project.

From the collaborating teachers' point of view, their biggest worry was whether PolyU students' STEM knowledge, and teaching experience are adequate for running the workshops. In order to gain the teachers' confidence, we have to make extra efforts to check and ensure that the content of the Service Handbooks prepared by our students is scientifically correct, and that the experiments are explained and demonstrated correctly in the workshops.

The collaborating schools often do not fully understand the aims of our service, and we have to reiterate the principle of SL to our collaborators. It is crucial that they

understand although our students may not be experienced in teaching or good at managing classroom behaviours, it is important that they have learned by reflecting on their performance, their roles, and their social responsibilities.

Sometimes our students are not able to handle all the workshops as well as we have hoped. It is our duty to help them through observing the difficulties they encounter during the teaching process, stimulate their interactions with the service recipients, and facilitate their reflection. Nonetheless, we have observed that the service recipients valued the learning opportunities provided by our students and they treasured their relationship with them. Many of them took photos with their young teachers and gave them thank-you notes and origami lucky stars as a token of their appreciation. Some of them even expressed the wish to see them again in the second run of the workshops in their school.

Other issues that are worth consideration relate to the duration of the workshop sessions. The first is that it is difficult to find a common time slot of 40 hours that suits both PolyU students and the secondary school students to mount all the STEM workshops. As a result, those schools which can accommodate the 40 hours of direct service are likely to be selected as our collaborators. Another issue is about the arrangement of the subject. Our university students normally have about four to six weeks to prepare for their SL project, depending on which semester the subject is offered. Their feedback shows that they feel the course is too rushed, the academic content contains too many STEM concepts, and the SL project to see if it is better to focus on one particular STEM theme.

Despite all the difficulties encountered, we consider that the SL project is meaningful and has benefitted different parties. The STEM workshops have made positive impacts on the target students, and the SL experience has facilitated our PolyU students' academic and generic development. The school teachers have a better understanding of their students' academic potential. For the teaching team, running the subject has helped us reflect on our own teaching styles for improvement.

The true impact of STEM education on young people may take years before it becomes apparent. And we believe the 40-hour workshops are never sufficient for teaching the numerous STEM concepts to secondary school students. However, we are confident that our team has made a step forward in cultivating students' positive attitude towards STEM and in deepening their understanding of STEM concepts.

We will have no hesitation to recommend the SL pedagogy to teachers, because the experience of learning with and from students is more powerful than one can think of.

#### Appendix 9.1

The objectives of the subject are to:

- 1. Introduce to students the concept and practices of service learning.
- 2. Raise students' awareness of the difficulties and challenges faced by children and teenagers studying in disadvantaged schools.
- 3. Develop students' scientific thinking and scientific literacy.
- 4. Educate students about the impact of scientific thinking and literacy on young people and the general community.
- 5. Enhance students' generic competencies of innovative problem-solving, communication and teamwork.
- 6. Nurture students' sense of social awareness, responsibility and engagement.

The subject also aims to strengthen the integrative learning and application skills of secondary school students in Hong Kong with the following objectives:

- 1. To develop students' interest and self-directed learning abilities towards STEM.
- 2. To cultivate students' positive attitude towards STEM.
- 3. To deepen students' understanding of STEM and its relevance to industry and everyday life.
- 4. To raise students' understanding of university life and enlighten their future subject selection and career exploration journey.

Serving the Community through Teaching English Anna Ho English Learning Centre

#### 10.1 Why We Have Opted for Service-Learning

I believe that service-learning (SL) provides invaluable opportunities for students to learn. Such belief was nurtured through serving as a project assistant during my university days.

I served as my professor's project assistant and participated in a voluntary teacher training programme in Zhongshan in Guangdong, China. After serving on this programme for an extended period of time, I began to notice some changes in me. I became more confident in public-speaking, more flexible and spontaneous when dealing with "surprises", and later when I started looking for jobs, my SL experience became a highlight on my curriculum vitae and made me a more interesting candidate at job interviews.

When I started my teaching career at PolyU, I wished to provide similar learning opportunities for my students. Thanks to the English Language Centre (ELC), I served as the advisor to the student body English Club, through which a number of local and offshore voluntary language service programmes were developed. We ran these language service programmes in the form of extra-curricular activities for almost 10 years before PolyU decided to make SL a mandatory requirement and started calling for subject proposals in 2011. I responded to the invitation and took the opportunity to further develop and formalise what we had been doing.

Our submitted proposal was accepted, and the subject, "Serving the Community through Teaching English", was piloted for a year before it was officially launched in the 2012/13 academic year by the ELC as an open-for-all GUR (General University Requirement) subject. We have been pleased with the acceptance of our proposal for two reasons. First, it is a recognition to both students and teachers that their work and service are academically vigorous. Second, by granting SL a formal status, proper training time and space can be provided to students, enabling them to perform to their best ability.

#### 10.2 The Subject

Academically the subject focuses on effective English oral presentation skills. Students are guided to appreciate and to acquire the keys to effective presentation, which are in essence understanding their audience and achieving the speaking objectives. Understanding that every practice is a learning experience, we have designed many practice tasks throughout the course. For instance, students practise story-telling skills and giving instructions in the classroom. The complexity of these skills have often been underestimated. But experienced teachers will know these are essentials skills to effective teaching.

Students are also coached and guided to design and develop their very own teaching kit, which normally requires around 25 to 30 hours of preparation work prior to their service. Having repeatedly practised the essential skills to effective teaching and

having finalized their teaching kits, students will then embark on their teaching service. Their mission is to render a 40-hour English language workshop for target service recipients.

The delivery of the service takes place in the second or third semester, depending on their service location. Students serving clients in Hong Kong render the service in weekday evenings, twice a week for about six to seven weeks. Students serving in Mainland China or overseas need to attend a 7-day to 10-day offshore service trip in the summer term.

# 10.3 Supporting and Assessing Students

Despite having the passion to serve and to teach, the great majority of our students find it very challenging to develop a coherently structured teaching kit. To help them overcome this challenge and be well prepared for their service, built-in consultation sessions with subject teachers are crucial in our course. Another challenging moment happens when actual teaching takes place. Students often find class management and getting learners' attention difficult, and so we also emphasize the importance of on-site support and timely feedback from subject teachers.

Other than supporting our students, subject teachers also serve as assessors on the course. Similar to other academic subjects in PolyU, our assessments aim to gauge students' extent of achievement of the intended learning outcomes. Oral presentation skills, being the academic focus of the subject, are what we primarily assess. For example, after students' teaching kits have been developed, they need to present them to the subject teachers. Their task is to inform and persuade their teachers that their teaching kits should be selected. Another assessment that relates to students' presentation skills in the classroom is a 15-minute video they are required to submit, showcasing their best performance during their teaching service. Our criteria of assessment are again about their effectiveness in achieving their speaking/teaching objectives and ability to meet their audience's/learners' needs.

We believe strongly that reflection helps transform service to learning. Throughout the whole subject students are given many formal and informal reflection opportunities. Constituting to part of the assessment, students need to submit two pieces of reflective writing, one after they have completed the teaching kit presentation and another after the teaching service. In the first piece, students are expected to reflect on their group collaboration and project development experience. In the second piece, students will reflect on their interaction experience with service recipients.

# 10.4 Expansion of Service Scope through a Formal Subject

In the first runs of the subject, the service was delivered in the form of English reading workshops for school children from underprivileged communities in Hong Kong (e.g. Shamshuipo) and in less developed areas in the Mainland (e.g. Dabu county of Meizhou city). The successful experience and the positive feedback received from students and service recipients have encouraged the teaching team to expand the service scope and service nature. In addition to Hong Kong and the Mainland, we also render teaching service in Taiwan and Cambodia, starting from summer 2016.

Apart from the expansion of service points, our service has also reached out to a larger clientele. When delivering our teaching service in Dabu, we realized that in order for the school children to improve their English, we should also focus on teacher training and development. Thus we have proposed a new strand of service: enhancing the speaking skills of Mainland English subject teachers in developing areas. Thanks

to the support from my colleagues in ELC, we have been able to set up a special team to focus on this area of service. What we facilitate is an English-speaking workshop, with ELC staff serving as up-front trainers and PolyU students serving as teaching assistants. PolyU students are responsible for leading group activities and providing service recipients with language support and individualized attention.

# 10.5 The Benefits Gained

#### 10.5.1 For PolyU students

What benefits have students gained from their SL experience? Can they apply the knowledge and skills learned to their teaching service? Are they able to reflect on their role and responsibilities both as a professional in their chosen discipline and as a responsible citizen? Looking back at our experience in the past few years, we consider that our students overall have achieved these objectives.

Although our subject trains students' English presentation skills, our contents and approach cover more than what is provided in a general ELC subject. The authenticity of the subject has a significant impact on all the speaking tasks that students are required to do. For instance, in one of the assessed presentations, students need to develop teaching kits for an authentic group of clientele, and persuade a real audience (their teachers) that their teaching kits should be chosen for the intended group of users. Students need to address two core objectives in their presentation: (1) informing the audience and getting endorsement, and (2) winning over their peer competitors and getting the teaching kits chosen. These two objectives will impact the speaking strategies they adopt, the deployment of responsibilities among team members, the language and diction displayed, and so on and so forth. This presentation is not just about informing an audience, but also about getting their buy-in or endorsement.

Here is an example of how we help students develop these presentation skills in the subject. In the 2015/16 academic year, students were divided into nine groups. Each group developed their own set of teaching kit. Four of them were coached by one teacher and the remaining five by another; but the teachers swapped their groups in the assessment of the teaching kits and students' presentations. Eventually only the best six teaching kits out of the nine were selected. During the presentation, students had to inform the assessor, who had little prior knowledge about their teaching ideas, as well as persuade him/her to buy-in their plan for their proposed teaching. Winners of this "teaching kit presentation challenge" had the honour to showcase their teaching plans again to other groups before they set off for the service trip. Throughout the whole process, students had many opportunities to hone and refine their presentation skills, with target groups and speaking purposes slightly different each time.

Students also learn through reflection. Our visit to Dabu is a good illustration. Before arriving at the three schools we were to provide service to, we gave the students a special task – observe, compare and evaluate the teaching environments and school settings. During one of our final reflection sessions, the students pointed out that all the classrooms in one school were equipped with electronic whiteboards, and yet the pupils sat on benches. They wondered if the school management had set their priority right – they seemed to prefer to spend money on high technology or "vanity" items rather than on proper furniture for the true benefit of young pupils. Students suspected those facilities were probably for showcasing to government officials and parents. This sort of reflective discussion is of paramount importance in a SL subject. Unlike discussions in a traditional language class, in which we admittedly tend to lead students to arrive at the answers we already have in mind, in our SL subject we expect students to make novel observations and raise questions in their reflections. The exploration and discovery process has proved to be an enlightening as well as enjoyable learning experience for students.

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Undoubtedly students show immense empathy for their clients when they see the poor conditions of the schools, and the difficulties local teachers face. Some of them even develop a feeling of helplessness. "Can we help simply by delivering a service in such a short time?" is the question often raised. Personally I am not discouraged by this feeling of helplessness. I told them that when I was at their age, I did not know that I could one day offer an SL subject, and influence others to engage in a meaningful activity. That question to me is a sign of an enhanced sense of social responsibility. As teachers, we have to create sparks that could ignite the fire deep within our students' hearts, and when the time comes, the fire will lead them to find a way to serve others.

#### 10.5.2 For the school children

Our primary service beneficiaries are elementary school children. Many of these young learners of English have never used English outside of the classroom. For instance, pupils in small towns such as Dabu are often not motivated to learn English because the language is rarely used in everyday life (one can hardly see a signboard written in English). But interestingly, the very presence of the international mix of PolyU students has promoted a real communication need for these young learners. When we were in Dabu this past summer, a group of kids were curious about the nationality of an Indonesian PolyU student. These children had the preconception that English-speaking people could only be fair-skinned foreigners from the Western world. These kids used their limited vocabulary to guess about the Indonesian student's origin and eventually were thrilled to learn the new word "Indonesia". This authentic encounter with the world outside Dabu has greatly motivated these school children to learn English.

The reading workshops also offer a new learning experience to the pupils. The teaching kits used in the workshops are specially designed to complement the formal teaching efforts in schools, which rely too much on textbooks as the primary source of reading materials. Our interactive and learner-centred approach to teaching also supplements existing teaching methods that rely heavily on mechanical drills, grammar practice and rote-learning. We believe by introducing a different teaching approach, we can add value to the students' learning.

Our students teach stories they wrote. These stories often project messages for the target learners. There is a story I particularly like. It is about a baby lion Leo who wanted to see the sea. His wish was inspired by a turtle who told him that the sea was where he was from. Leo left his home in the mountain and started his long journey in search of the sea. He met a lot of hardship on the way, but he did not stop, and on his way to find the sea, he grew into a big handsome lion. When he finally saw the big, blue, beautiful sea, he met a little turtle who was curious about where he came from, and so Leo encouraged the baby lion to go and see the mountain. The teaching activity that followed was built upon the story, and the pupils were asked whether they had their own dreams too. Our students taught English, but they also wanted to inspire "their students" to explore the world beyond their little town.





## 10.5.3 For the English subject teachers

Through attending the English-speaking workshops led by our ELC staff and PolyU students, the Mainland English subject teachers have become more appreciative of the importance of clear articulation in their language delivery, and are able to use English more confidently to express themselves. They have learnt new pedagogical skills through participating in an array of English language activities in the workshops. Our international students, serving as teaching assistants, have facilitated real and meaningful communication among these teachers, and helped them develop greater awareness of the natural delivery of the language, as well as confidence in speaking English.

During our later service visits to the schools, we were much encouraged to find that the teachers had adopted a more interactive approach in their teaching and used fewer military-like drills in language practice. We believe that they have acquired some relevant teaching ideas for their classes through participating in activities themselves and through observing our teaching in the classes.



## 10.5.4 For SL teachers

The subject has now been offered for six academic years, and the numbers of teachers and service recipients are growing. Every year, we receive high demand from the Mainland for our reading workshops for school children. We therefore have to recruit volunteers through the PolyU English Club to assist our SL students in order to meet all the requests. Last year (2015/16), we also ran three teacher training speaking workshops in Dabu. Our interactive workshop approach received very positive responses from the District Education Bureau as well as the teacher participants. They have invited us to mount more teacher training workshops in the coming year.

What we have achieved in the subject has definitely given us a strong sense of satisfaction, but I also regard our participation as an opportunity for a different form of staff development and empowerment. As proposer and teacher of the subject, I myself have gained much experience in helping students apply theory in real-life practice, and cultivating in them a sense of social responsibility. Now, with more teachers joining the team, I have assumed a coordinating role and acted as mentor to new teaching team members. I hope I could sum up my experience and share it with my colleagues. I believe more can be achieved when more colleagues join hands together, and bigness can lead to greatness. For new comers to the subject, I have seen the growth of confidence in them as they take up the multiple roles required of them: teacher, assessor, mentor, liaison officer, manager, etc. Teachers who embrace these challenges and enjoy working with students will find the experience very rewarding.

## **10.6 Challenges for Teachers**

It is commonly thought that the amount of workload of an SL subject is not proportional to the number of credits it carries. The problem has become more acute for a subject leader when the number of collaborators grows, because the amount of coordination work multiplies. Quality time is also required to improve students' presentation skills and vet their teaching kits. In the short term and to a certain extent, the coordinator can try to find ways to manage his/her own situation. However, the problem has to be reviewed and solved at the institutional level in the long run. A better incentive scheme which includes a more realistic calculation of workload will help to sustain staff's enthusiasm, and attract other teachers to join the team when current SL teachers may be deployed, retire, or leave for other jobs.

Teachers of our subject face many challenges. The first of course is how to train students to become teachers within a short period of time, how to be aware of their difficulties, and how to enable them to overcome the difficulties and carry out their service satisfactorily. Then there is often the challenge of how to handle unenthusiastic students who take the subject because it is a requirement for graduation. The teacher has to think of ways to inspire them and improve their attitude. Student must learn to commit and perform as a team, or we could lose the trust and respect of our clients.

Teachers who are new to SL may face more challenges, particularly when students' service is delivered outside Hong Kong. The challenges or risks come from unexpected happenings during the journey, such as students forgetting to bring their travel documents, traffic delays, illness, safety concerns, and so on. It will be useful for new teachers to gain first-hand experience by joining an offshore service programme before they start their own subject. Learning by doing is always a good strategy.

## Land and Resource Management for Sustainable Development in Rural Area

Department of Land Surveying and Geo-Informatics

## 11.1 From Community Service to Service-Learning: A Brief Background

One of PolyU's educational goals is to nurturing students to become responsible global citizens with a strong sense of social responsibility and a global outlook. In line with this goal, the Department of Land Surveying and Geo-Informatics (LSGI) has been promoting the idea of learning through service since 2005. With the support from the former Student Affairs Office (SAO), we developed projects for the Community Service Learning Programme (CSLP), with the dual aims to serve the communities in Hong Kong and the Mainland on the one hand, and to stimulate students' interest in the relationship between land and human activities on the other.

In 2011/12, PolyU decided to promote and implement service learning (SL) as a core academic pedagogy. At that time, the CSLP began to phase out to give way to SL. Our past CSLP experiences inspired us to propose "Land and Resource Management for Sustainable Development in Rural Area" as the theme for an SL subject. It would provide LSGI teachers with a good opportunity to motivate students to learn land management and geographic information through a service project. Students would also gain a different learning experience of working with people and university students in other places if they choose to carry out the SL project outside Hong Kong.

Why do we choose rural areas for our service? It is discovered that due to the lack of knowledge, serious problems like carbon emission, poor waste management, deforestation, inefficient farming and water source pollution are common in rural areas in developing countries. We think that we can work with our students as a team to help improve the situation of many of these rural areas by using land surveying and geo-informatics knowledge and techniques.

It was against this background that we carried out a service project in Indonesia in 2012 in collaboration with the Duta Wacana Christian University (DWCU) in Yogyakarta, Indonesia and a local village in Kulonprogo, a remote rural area in Yogyakarta. The village has a rich local culture but the people there have a low educational level and an unstable income. We thought that we could further improve the situation of the village by making it one of our service sites.

## 11.2 The SL Subject

"Land and Resource Management for Sustainable Development in Rural Area" is an open-for-all GUR (General University Requirement) SL subject offered by a teaching team at LSGI<sup>1</sup> since the 2012/13 academic year. The subject spans two semesters (Semesters 1 + 2, Semesters 2 + 3, or summer term + Semester 1) and is offered thrice in each academic year. Students are expected to spend about 135 hours

<sup>&</sup>lt;sup>1</sup> Members of the teaching team are: Prof. Wu Chen, Joseph Lam (Subject Leader), Dr Geoffrey Shea Dr Conrad Tang, and Miss Ran Zhang.

of study effort for completing the subject, including 66 hours of e-learning, in-class sessions, self-study and preparation for the service project, 43 hours of direct service, and 26 hours of reflection and review.

#### 11.2.1 Subject components

The subject consists of the following components:

- 1. e-Learning Module on SL: The module developed by the Office of Service-Learning OSL (OSL) includes readings, exercises and assessments that are designed to introduce students to the basic concept and practices of SL.
- 2. Discipline-specific lectures, tutorials, seminars and/or workshops: These are designed and conducted by LSGI to equip students with the discipline-specific knowledge and skills required for planning and conducting the SL project.
- 3. Project-specific seminars, tutorials and/or workshops: These aim to enhance students' understanding of the underprivileged community and other issues relating to the SL project, and to develop students' generic skills in planning and delivering the service project.
- 4. SL project: The SL project is designed to develop students' general competence in innovative problem-solving, teamwork and communication, and to enhance their sense of social responsibility, social awareness and engagement. They will be required to develop a long-term strategic plan to empower the local community to attain sustainable development.

The topics covered by the first three components are listed in Appendix 11.1.

#### 11.2.2 Objectives of the subject

Students taking the subject will be equipped with the technical knowledge of the discipline and generic skills for decoding the rural reality. They will use the information and data to propose plans that will empower the rural communities to overcome their problems and achieve sustainable development. They will learn to appreciate the local wisdoms and culture, and be aware of the problems that the rural communities are facing. They are also expected to learn to respect others, and treasure the power of teamwork, sharing, reflection and inter-discipline dialogue.

## 11.3 The SL Project

The aim of the SL project is to train our students to employ land surveying knowledge and techniques to enhance the wisdoms of a rural community for sustainable development and for supporting the development of rural settlement. Our services have now extended from Hong Kong and Indonesia to Cambodia, the Mainland and Taiwan in recent years.

In addition to the project-specific seminars and workshops, preparatory training for the SL project also includes a mock service of eight hours in Hong Kong before the service trip. Apart from training students the necessary skills and adjusting their attitude in rendering service, the mock service provides teachers a chance to observe whether students are suitable for joining non-local service trips, which are often more demanding. Students who are considered to be unsuitable for non-local service will be advised to engage in service projects in Hong Kong.

Prior to service delivery, students collect spatial information about the service site from previous land records. They also collect the information through techniques such as oral history recording and the application of GPS and GIS at the site. The decoding of the spatial-temporal data collected enables students to understand the land-human relationship of the local community.

Students are required to interact closely with the local community under the guidance of the collaborating university and organizations so as to understand the local culture and the characteristics of the rural environment. For example, in the Indonesian project, DWCU served as a bridge between our team and the service recipients. The DWCU team provided teaching related to local conditions, sustainable development and rural settlement, and their students partnered with PolyU students to serve the local community with their professional knowledge. They also helped our students overcome the language barrier, culture shock and difficulty in understanding the local community.

From the analysis of the spatial-temporal information collected, students identify the needs and difficulties of the rural community and work out strategies to help them overcome the limitations and develop the potential for sustainable settlement. At the completion of the service, students need to present their findings and make recommendations to the local community and government officials. They are also expected to teach the villagers the necessary knowledge and techniques to execute their recommendations for sustainable development in the area.

In previous SL projects, students attempted different service tasks according to their own preferences. The tasks included waste management, heritage conservation, cultivation enhancement, water quality improvement, health information management, and geographic information application.

To achieve sustainable impacts, the service rendered by students has two dimensions. The direct service includes mapping products or information kits such as rural asset maps accompanied by application workshops, which are delivered directly to the local community. For the indirect service, students prepare development strategies and techniques for the village and teach the villagers or local NGOs (non-governmental organizations) to use these technical skills for long-term impacts.

PolyU students from different disciplines are expected to demonstrate inter-disciplinary cooperation to achieve the project objectives. Geomatics students collaborate with students from other disciplines when interviewing the local community and collecting information. They also work together to present their development plan. This helps to enhance students' communication and teamwork skills, and widen their learning scopes through peer interactions.

## 11.4 Student Assessment and Reflection

Assessment is important to evaluate students' efforts and the effectiveness of their service. Assessment of students' performance is conducted in four phases, and the relative weighting and criteria are detailed below.

- e-Learning Module and project-specific seminars and workshops (20%) These sessions include assignments and learning tasks that are designed to assess students' ability to link SL with the academic content of the subject, their empathy for the underprivileged community and their understanding of their roles and responsibilities in society.
- 2. Planning and preparation (20%)

Through peer discussions, close interactions with the local community and surveys, students work in groups to identify the difficulties and needs of the villagers. Each group is required to write a project proposal/plan and suggest development strategies to the local community. The group's performance is assessed according to the following criteria.

- Understanding and application of academic knowledge.
- Ability to identify the local community's problems and development strategies.

- Depth and breadth of consideration in the project plan and design.
- Suitability, quality and innovativeness of the project plan (objectives, scopes, and map design).
- Skills in presenting the project proposal.
- Skills of communicating with the beneficiaries.
- Ability to work in a team and attitude towards other team members.
- Leadership skills.
- Sense of care and social responsibility.
- Completion of tasks fully and on time.
- 3. Service implementation (30%)

Students are required to implement their proposal for developing a strategic plan for the beneficiaries. They work out solutions for enhancing the development of the local community. Students' group performance in this phase is assessed according to the following criteria, with reference to the feedback from the collaborating partners and beneficiaries.

- Understanding and application of knowledge of sustainable development.
- Depth and breadth of consideration for local culture and wisdoms.
- Suitability, quality and innovativeness of the proposed development strategies.
- Problem-solving skills.
- Skills of presenting solutions to the local community's problems in writing.
- Ability to work in a team and attitude towards other team members.
- Sense of care and social responsibility.
- Positive work attitude and behavior.
- Completion of tasks fully and on time.
- 4. Reflection (30%)

During the service period, students are required to write individual reflective journals weekly to reflect on the service in the different stages to enhance their academic and ethical learning. Through describing the service process, students analyze the local land and resource management practices, and link their SL experience with their academic knowledge. After completing the service, they also need to critically reflect on the whole project by preparing a final group report, a project website and an oral presentation. They are expected to review what they have learned from the service and the impact of the service on their future.

Based on students' reflective journals, group report, presentation and website, the teachers assess their performance according to the following criteria:

- Detailed discussion of the preparation and implementation of the project.
- Detailed discussion of their understanding of the needs of the community, sense of social responsibility, interpersonal impact and growth, application of professional knowledge and skills, and overall feelings.
- Organization skills in reporting incidents.
- Writing and oral presentation skills in reporting.

Reflection is an important tool for learning. Since it may be too abstract or difficult for students to carry out meaningful reflection at the initial stage of the subject, we organize reflection and review sessions both during and after the project, and teach students to reflect by observing, learning and sharing at different stages of the subject. The reflective journals submitted by students show that they treasured their service experiences and had benefitted from the reflection routine.

## 11.5 Benefits of the Subject and the Project

## 11.5.1 For PolyU students

The SL project develops students' general competence in innovative problem-solving, teamwork and communication, and enhances their empathy for the needy as well as their sense of social responsibility, social awareness and engagement. Since they have to demonstrate their proposed development strategies to the beneficiaries, their presentation skills are strengthened.

Students have a chance to apply their newly learned professional knowledge of rural development, settlement, sustainable development and geo-information for land and resource management in rural regions, and this in turn reinforces their understanding of their acquired knowledge and skills. The experiential education approach is of great benefit to students' learning.

Through observing the rural environment and learning the local wisdoms first hand, students gain new insights and broaden their practical knowledge of actual settlement issues. On the other hand, the non-local SL experience raises students' awareness of global issues and the challenges and needs of underprivileged communities in rural areas outside Hong Kong. The new horizons and insights help to enhance students' academic performance as well as their future career development.

The GUR subject encourages inter-disciplinary collaboration and learning among students. This can be best illustrated by the following example. During an SL project, design students majoring in digital movie production worked together with geomatics and engineering students to produce a movie which educated the villagers about the serious problem of carbon emission resulted from traditional trash management. The movie also demonstrated the benefits of green life in rural areas through the working examples of a serving NGO. The inter-disciplinary cooperation among students not only facilitated exchange of professional knowledge, but also helped to equip the underprivileged community with better knowledge to achieve sustainable development.

#### 11.5.2 For the service recipients

The rural communities that students serve have generally been neglected for years due to urbanization, poor natural resources, unbalanced development policies or other reasons. During the service period, students identify the major problems and needs of the local community through close interactions with the villagers, the community administration and the serving NGOs, as well as through the systematic analysis of the spatial information collected. As a result, the direct service products and the indirect development strategies or techniques that students prepare usually meet the needs of the local community. We are pleased to note that some rural communities are still using some of our service products or skills to enhance their community development even after our students have completed their service.

#### 11.5.3 For the teaching team

As teachers of the subject, we have also benefitted from non-local service projects. Through collaboration with the teaching teams and students from universities in other places, our insights and teaching experience in SL are enriched. The opportunity to collaborate with prestigious universities (e.g. Peking University, Yunnan University, National Cheng Kung University, Australian National University, and Duta Wacana Christian University) and international NGOs (e.g. the International Youth Hostel Association) is invaluable because it allows us to have technology and knowledge transfer with these institutions.

## 11.6 Teachers' Reflection

The credit-bearing subject has been offered since 2012/13, and we have made refinements to the different components each year based on the experience gained. We believe the smooth running of the subject afford our students enough opportunities, resources and guidance to get the most out of their SL experience.

We are aware that the problems and limitations of rural development will not be overcome with short-term service efforts; rather, we need to have continual, well-planned service projects to support long-term development.

Nevertheless, we have encountered problems in some areas which need to be addressed so that the subject can be more effective and sustainable. One problem is related to students' attitude and mindset. We have observed that some students did not have a clear idea about SL or were less inclined to perform services. We had to make a lot of effort to change students' attitude and mindset but sometimes our efforts were to no avail. Some students focused on the subject scores rather than the impacts of the service. For them, easily scored items and convenient time slots were more important than the clients' needs and availability. Some students even withdrew from the subject near the end of the semester, which induced uncertainties in the service arrangement.

Many university students are leading a busy life. They may not reserve enough time and effort for their lectures, service preparation and service engagement. Their busy university life particularly creates difficulties for service projects that involve team work commitment. Indeed, it is not easy for students to switch from Internet connections to close human interactions, to go out of the classroom to help the underprivileged communities, and to realize the difference between the simple voluntary service idea they learned at secondary school and the concept and purpose of service learning.

Fortunately, there are some students who treasure their SL experience. They compiled their learning outcomes and reflections into three published books. Their self-initiated attempts illustrated their yearning for sustainability of service impacts and the SL culture.

## Appendix 11.1

The academic components of the subject include:

- 1. Concept and practices of SL (the e-Learning Module)
  - Principles, concepts and myths of SL
  - Benefits of SL to students, the University and the community
  - Ethical issues on SL
  - · Basic concepts and theories of social problems, developments and justice
  - · Social responsibilities of global citizens as intellectuals and professionals
  - Proper attitudes and behaviours in service delivery
  - Developing a service project proposal/plan
  - Effective team work and problem solving skills in SL projects
  - Reflection as a tool for learning
- 2. Discipline-specific concepts, issues and skills
  - Sustainable development in rural areas: economic sustainability, green development, education, health, water supply, cultural diversity, mixed farming, community needs and limitation of environment's ability
  - Land and resource management: land ownership, land boundary record system, cadastral map, natural resource allocation, soil conservation, forestry plantation and water supply
- 3. Project-specific concepts, issues and skills
  - Understanding the historical, cultural, and socio-political background of the target clients/underprivileged communities
  - Health, safety and other issues relevant to the service project
  - Moral and ethical concerns specific to the project and beneficiaries
  - Understanding the factors affecting rural development and settlement in the local area: quality of life, economic activities, local community, global market, urbanization, tourism, education and infrastructure
  - Geographical data versus types of thematic maps: nature of data, classification of thematic maps and data classification schemes
  - Field data collection of Geo-information for resource management
  - Operation of GIS software



## Educating Rural Farmers on Healthier Food Production Gilbert Y S Chan & Alex C Y Chan Department of Applied Biology and Chemical Technology

## 12.1 From Consultancy to Serving-Learning

The service-learning (SL) subject "Educating Rural Farmers on Healthier Food Production" has been offered since the 2013/14 academic year. But the story can be traced back to 2008, when the Wenchuan earthquake shook the Sichuan Province in China. One of the areas hit by the earthquake was Shifang, a region about 100 km north of Chengdu, the capital city of Sichuan. Shifang has been a major area for the production of the mushroom Muer (Auricularia auricular, or Jew's Ear) since the end of the last century. The production of this black mushroom in the region was partially affected by the earthquake. As resources poured into the striken areas to assist their recovery, people including farmers in Shifang quickly resumed their traditional work or farming activities.

However, the local government soon found that they were faced with a new problem: the fast expansion of the cultivation of Muer in the region as a result of the availability of abundant resources had caused serious pollution problems to the environment. The annual mushroom production from this single city was about 100,000 tonnes, and the quantity of agricultural produce to agricultural waste was one to one. Due to the farmers' practice of dumping the waste in the fields, about 100,000 tonnes of organic waste was produced annually.

About five years ago, I went on a consultancy visit to Shifang organized by the Chinese Mainland Affairs Office (CMAO) of the University. The purpose of the visit was for the consultants to gain an initial understanding of the problem in the region. As a biologist, I found that there was much room for improvement in the farming process to minimize the impact on the environment. One example was to persuade farmers to stop using carcinogenic substances in the cultivation process.

In 2012 and 2013, I joined the University's Community Service Learning Project (CSLP) and went to Shifang with a group of students. The aims of the project were to help the farmers there to adopt new agricultural practices for safe and healthier food production, and enhancing students' knowledge of agriculture. In order that more students can gain the same meaningful experience, I proposed to expand and formalize the small scale voluntary service progamme to become an SL subject. The subject was launched in the 2013/14 academic year.

## 12.2 The SL Subject

The SL subject "Educating Rural Farmers on Healthier Food Production" is hosted by the Department of Applied Biology and Chemical Technology (ABCT) as a GUR (General University Requirement) subject for all PolyU undergraduates, and there are four members in the teaching team<sup>1</sup>. It is offered twice in the academic year, once in Semester 1 and once in Semester 2, with the SL projects being conducted during the semester and in the semester break.

<sup>&</sup>lt;sup>1</sup> The teaching team comprises Dr Gilbert Chan (Subject Leader), Alex Chan, Anna Cheung and Xi Wei.

## 12.2.1 Objectives of the subject

The objectives of the subject are to educate students on the basic concepts and practices of modern agriculture and to raise their awareness of issues in the agricultural and food supply chain. Through hands-on experience in farming processes, students learn about the inadequacies of current agricultural operations, and become aware of the need for more efficient and safer agricultural processes which farmers can adopt to protect the environment and increase production.

In addition, students are expected to be able to apply their academic knowledge learned from the subject and their own discipline to their SL activities. By engaging in the SL project, they are also expected to enhance their generic competencies in communication, problem-solving and teamwork, and develop a sense of empathy for people in need.

A list of the objectives of the subject can be found in Appendix 12.1.

#### 12.2.2 Subject components

The subject consists of four components: (1) the e-Learning Module on SL, (2) discipline-specific lectures, seminars and laboratory sessions, (3) project-specific seminars, group discussion sessions and workshops, and (4) SL projects.

The e-Learning Module on SL is offered by the Office of Service-Learning (OSL) to enable students to gain a basic understanding of the concept and practices of SL.

The disciplinary knowledge of the SL subject is introduced to students through a series of lectures, seminars and laboratory sessions, including concepts on good practices of modern agriculture, new developments of modern agricultural technology, models of responsible agriculture, Chinese food culture, issues and problems faced by farmers in China, and possible gaps in current practices for improvement.

The project-specific seminars and workshops provide students with the background information of the service sites, including the farmers, their crops and the imminent issues they are faced with. Guest speakers are invited to give seminars as appropriate. Students are also shown videos of the sites to gain a more comprehensive understanding of the farming processes.

Details of the topics covered in the discipline- and project-specific components are found in Appendix 12.2.

Two rural farming communities in China and one farm in Hong Kong have been selected as the major sites for the SL projects. Each of them has its own needs or problems. They are Shifang in Sichuan, Heyuan in Guangdong, and Love Farm in Hong Kong. Students have to deliver 40 hours of direct service to their selected farming community.

Students work in groups to prepare for their service plans/proposals. Those who deliver their service in China have to discuss with the teaching team the specific tasks they will conduct, and to mount a pre-service presentation to consolidate their plans before setting off for their destination during the semester break. Students who work on the local farm complete their service within the semester after their project proposals have been approved.

#### 12.2.3 Student assessment and reflection opportunities

The following components are assessed:

- 1. e-Learning Module on SL and discipline- and project-specific lectures and seminars (20%): Students are required to complete the Module within the first four weeks of the semester, and attend all the lectures, seminars and workshops.
- 2. SL project plans/proposals (20%): Students' SL plans/proposals are assessed on their basic understanding of the farm and/or group to be served, and their application of disciplinary knowledge in the service to help the farming communities or the service recipients.
- 3. Performance in the rendering of service (30%): Students' performance in their rendering of service is assessed with regard to their engagement in the activities, communication and collaboration with clients and teammates, problem-solving skills, etc. The farming partners or the NGO concerned also assess students' performance based on a set of guidelines provided and issue a reference letter to each student. Part of the assessment is made with reference to this reference letter.
- Reflective Journal/Report (30%): Students' learning is also assessed based on the Reflective Journal/Report that they submit. Students should demonstrate their ability to (1) link their SL experiences with the academic content of the subject, (2) reflect on their SL experiences to identify their learning gains and areas for improvement, and (3) reflect on their roles and social responsibilities.

## 12.3 The SL Projects

Since the launch of the subject, the SL projects have been carried out at the three target sites, Shifang, Hong Kong and Heyuan, as planned. Below is a summary of their issues and the services we have rendered recently. The story of Shifang, in particular, gives us a glimpse of the issues found in some of the farming processes, and how students' services help to improve the situation.

### 12.3.1 Shifang, Sichuan

#### The cultivation of Muer

The cultivation of Muer in Shifang is a family operation. The production cycle of Muer takes one complete calendar year. From early summer to about mid-autumn, raw materials such as saw dust, corn stalk, cotton seed coat and lime are mixed for packing into mushroom bags.

The bags are sealed and disinfected by a coal-fired steamer for almost 24 hours. The process releases CO2 into the atmosphere, producing photochemical smog in the area. It is estimated that the carbon footprint of Shifang amounts to 5,000 tonnes annually.

Mushroom mycelium is then put into the disinfected bags, a process called inoculation. Farmers usually subculture the commercially available primary stock to working stock in order to cut cost. Unfortunately, this increases the contamination rate of the bag contents, which will render the bags useless for producing mushroom. The inoculation process also involves the use of formaldehyde, a carcinogen which releases toxic fume.

The inoculated mushroom bags are kept in a tank for two months for asexual growth. Farmers inspect the fungal growth regularly and remove bags that have been contaminated. By this time, each thin plastic bag has already been moved around manually for at least 10 times and may have got torn. Again, its content would easily be infected by unwanted fungi or bacteria.

After Chinese New Year, an uncontaminated mushroom bag becomes white with mycelium. Muer is the reproductive organs of the fungus. Healthy mushroom bags will then be removed from the tanks and put on shelves in another humid tank, ready to be sprayed with well water. Traditionally spraying was done manually with a hose. (It is now done by a semi-automatic mist spraying system which we installed.) Muer is ready to be harvested from early May to late August.



The price of Muer can be 25% higher if it is washed after harvest. However, farmers usually give up this process because they simply do not have good methods or machines to wash one to two tons of the fungus each day. If production is promising, harvestable Muer weighs 2 kg per mushroom bag, of which 85% is water. So harvested muer has to be dried before sale. The drying of Muer depends on the weather: it can be achieved within one sunny day, or three cloudy days. However, good sunny days are uncommon in Sichuan.

#### Issues to be addressed

The farmers have been cultivating Muer in the above-mentioned manner for years (perhaps with some changes due to our service, such as the semi-automatic water spraying system). So what else can we offer to them?

Almost all of the processes are done manually; they are therefore labour intensive and inefficient. The use of toxic substance is also not recommended. We hope we can develop better, more efficient and healthier methods to help them improve the processes, avoid the use of toxic substance, and increase their yield.

Another problem is the disposal or recycling of spent mushroom bags. Some farmers burn the bags, some take them to the collection points, and some simply dump them in open areas nearby. When we were first invited to visit Shifang, our job was to build proper incinerators to help them handle the spent bags. However, the burning of the spent bags with the plastic bags containing them produces dioxin and should be banned. Up till now, there are still no practical ways to handle the large amount of spent bags generated in the region each year.

#### Students' services rendered in 2016

Altogether 40 students joined the week-long project in early 2016, and they were divided into five teams to carry out the tasks they had planned, including demonstrations of alternative farming devices/methods they have developed. Prior to the visit, students had about three months to discuss, plan and perform laboratory experiments for their tasks, applying the knowledge they had learned from the subject and from their own discipline. They also made available prototypes of their devices, produced by the University's Industrial Centre. During the visit, apart from participating in some of the cultivation processes, students' major tasks were to demonstrate the new devices or alternative cultivating methods to the farmers for their consideration of adoption. Their suggested alternatives included the "bullet" system for inoculation, using machines for packing mushroom bags, using ozone for disinfecting the water spray and for post-harvest washing, and using an infra-red system for drying.

We plan to continue to conduct the next few rounds of the SL project in Shifang. Only by continuing to improve the new devices and measures that we have installed can we sustain the impact of our services there. For example, we are still doing R&D work on the alternative uses of spent mushroom waste. The following table gives a summary of students' suggestions to solve the current issues of Muer cultivation.

Traditional method	The challenge	Students' suggestions
Fungal stock subculture	Use of toxic fume	Phase out, replaced with bullet system
	High contamination rate (1%)	
Packing mushroom bags	Labour intensive	Develop packing machine
Mushroom bags disinfection	Each cycle takes 24 hours	Introduce effective disinfection method at medium temperature
	Labour intensive	
	Air pollution	
Inoculation	Use of toxic fume	Introduced the bullet system, each bag takes 2sec
	Labour intensive (each bag takes 25 sec)	
	Lack of labour to perform this offensive job	
Asexual growth	Irrigation with contaminated water	Irrigation water disinfected by ozone
	Uneven spray of mist	
Sexual growth (formation of Muer, harvesting)	Contamination rate (5%)	Introduced ozone floatation washing
	No post-harvest washing	
	Sun drying impossible on rainy days	Introduced an infra-red system for drying
Disposal of spent mushroom bags	No practical means for proper disposal	R&D on alternative uses of spent mushroom waste
	Open dumping causes environmental contamination	
	Open burning together with the plastic bags produces toxic fume	

Comparison of traditional farming methods and students' suggested alternatives

### 12.3.2 Love Farm, Hong Kong

Love Farm is an organic gardening farm which was established by colleagues of ABCT in 2014 in collaboration with Hong Chi Association<sup>2</sup>, a non-governmental organization (NGO) dedicated to serve people with intellectual disabilities and their families. The set-up provides a platform for members of the Association to receive horticultural therapy, or training in gardening so that they can eventually work on other farms in Hong Kong and become semi-independent financially.

The farm has faced many challenges. In July 2015 Love Farm almost had to cease operation because the landlord did not renew the lease of the farm site. Fortunately we were able to find another site to continue our work, but it was just a piece of barren muddy ground and we had to transform it to farm land from scratch. It was like "mission impossible". But the service team did not give up, and worked hard to re-establish the farm. The work included constructing an underground irrigation piping system, building greenhouses, grass trimming, weed, removing the stones, ploughing and seed sowing, building pavements and paths, painting the facilities, repairing farm fences, making scarecrows, and so on. We were indeed pleased when we saw the waste land finally turned into a farm full of flower blossoms and vegetables.

<sup>&</sup>lt;sup>2</sup> 匡智會, formerly The Hong Kong Association for the Mentally Handicapped.

Forty-four students participated in the SL project in Semester 1 of the 2015/16 academic year. On five to seven selected weekends in the semester, they had to leave their home at 7 a.m. in order to arrive at the remote farm at 9 a.m. and carried out exhaustive farm work until 5 p.m. On top of that they also had to work on their own group projects and present their work at the end of the semester. Examples of students' group projects included "Interacting with the Intellectually Disabled", "Herb Products for Hong Chi", "Horticultural Therapy on Love Farm", "Green Living and Rooftop Farming", "Farm Work Risk Assessment", and "Organizing Organic Fun Days in the Community".

Again, we will continue to conduct our SL projects on the farm in the future so as to continually improve the set-up and maintain the impact of our services. Currently we are experimenting with the use of a semi-aquaculture system for horticulture in an area on the podium set aside by the University. The system can be installed on the farm when it is proved practicable.

### 12.3.3 Heyuan, Guangdong

Heyuan mainly grows crops and fruit. It is also the main source of Hong Kong's water supply, so major industrial or polluting activities are not allowed to practise there. The area therefore is most suitable for organic or high value agricultural farming. However, most of the farmers there still rely on traditional practices, and the produce is not of high sale value.

In early 2016, 16 students in three groups carried out their SL project in an organic farm in Heyuan. The operation was similar to that in Shifang and Hong Kong, but the emphasis was on organic vegetable production such as herbs and black garlic.

## 12.4 Benefits of the SL Projects to the Target Groups and the Students

The SL projects have brought direct benefits to the target groups by addressing their needs and problems. In Shifang, the service team has helped the farmers to enhance their efficiency by using better tools or healthier farming methods. Not only their livelihood is improved because of increased production, but the environment is also protected. The Heyuan project has helped the farmers to link their farming with market needs. In Hong Kong, services rendered on Love Farm has helped the intellectually disabled to better adjust to the society through horticultural therapy, and has provided them with basic gardening techniques to enable them to find jobs on other farms and become semi-independent financially. The success of the projects has been confirmed by Hong Chi Association. The projects have also promoted organic farming in Hong Kong, and the produce of the farm is usually donated to underprivileged groups such as the elderly, poor families and organizations for the physically handicapped.

The subject aims to help students to develop holistically through a service experience. Students choosing the SL subject have no prior knowledge about agriculture at all. In studying the subject, they learn real-life problems of different farming communities, and apply their knowledge from the SL subject and from their own discipline to help farmers solve their problems. For example, engineering students who work with farmers in Shifang plan to develop a system for transporting the mushroom bags so as to avoid wear and tear in the cultivation process, hence reducing the production cost. Farming on Love Farm has another meaning for students from the nursing discipline. There they apply their theoretical knowledge of nursing, and gain an experience of practising horticultural therapy with the intellectual disabled. Working with people who have different backgrounds or levels of education allows students to develop their communication and problem-solving abilities, as well as a sense of social responsibility and empathy towards less fortunate groups in society. In Shifang, students realized what a challenge it was to explain their model of enhancement and the related theory to the farmers. In Hong Kong, we observe that our students have been enlightened by the full attention that the farming "trainees" paid to their gardening activities, and they have changed their own attitude towards work. Many of them have become more proactive and worked more energetically. In their reflection journals they said that working with the intellectually disabled had given them an unforgettable experience and enrichment to their lives.

### 12.5 Teachers' Reflection

Most people in Hong Kong know very little about agriculture or where our food comes from. Even students studying food science in ABCT know only a small part of the food production process. They can perform tests to find out if a particular water sample is poisonous, but they may not know where the water comes from. Nowadays we are often concerned about the food processing procedures from farm to fork. Since all, or almost all, our food comes from farms, only by tackling problems at the origin can we ensure the safety and quality of the food that reaches our table.

The subject involves students working with farmers in frontline production, but its aim is not to train them to become farmers. Instead, it tries to raise their awareness of the importance of food safety and sustainable farming practices, and to inspire them to reflect on their roles as a professional in their chosen field and as a responsible global citizen. Indeed, we can see outcomes of the education: many alumni of ABCT now volunteer to work with current students in the experimental farm we set up on PolyU's campus. They do not simply work as gardeners; they are upcycling talents, organic growers, and practitioners of horticultural therapy. The more devoted alumni have formed a volunteer group to continue to engage in service activities, and to share with newcomers their experience and wisdom to support the development of the subject.

The subject also takes students out of their comfort zone to experience a new lifestyle. For a few days (or a few hours every weekend) they are in contact with nature. The laborious physical work helps them forget the pressure of academic work and feel relaxed. It is expected that eventually students understand from their service experience that it is not just about working for others; it opens up a window for them to see the world from different angles.

We learn from our experience that SL teachers must be good at multi-tasking, and be able to communicate well with different groups of people. The willingness to work with students at the frontline is essential in gaining the trust of students. The time we spend on the subject far exceeds the official number of hours allotted to a three-credit course. But it is worthy if you find meaning in it.

"The best way to find yourself is to lose yourself in the service of others."

Mahatma Gandhi

## Appendix 12.1

Objectives of the Subject

The objectives of the subject are to:

- 1. Introduce to students the concept and practices of SL.
- 2. Raise students' awareness of agricultural issues in China and/or Hong Kong and educate them about the challenges and needs of underprivileged communities.
- 3. Educate students about the basic concept and practices of modern agriculture and aquaculture.
- 4. Raise students' awareness of agricultural and food supply chain issues and educate them about the technologically feasible alternatives and challenges.
- 5. Allow students to have hands-on experience in the inadequacies and limitations of current agricultural operations and the need for better, more efficient and safer agricultural processes.
- 6. Enhance students' generic competencies in innovative problem-solving, communication and teamwork, and soft skills for working with people with less education and/or intellectual disabilities.
- 7. Nurture students' sense of social awareness, responsibility and engagement.

## Appendix 12.2

Topics covered in the Subject

- 1. Concept and Practices of SL
  - Principles, concepts and myths of SL
  - Benefits of SL to students, the university and the community
  - Ethical issues in SL
  - · Basic concepts and theories of social problems, developments and justice
  - Social responsibilities of global citizens as intellectuals and professionals
  - Proper attitudes and behaviours in service delivery
  - Developing a service project proposal/plan
  - Effective teamwork and problem solving skills in SL projects
  - Reflection as a tool for learning
- 2. Discipline-specific Concepts, Issues and Skills
  - Introduction to modern agricultural good practices: general knowledge to crop science and plant breeding; basic concept of soil management and fertilization; introduction to sustainable water management
  - Introduction to modern agricultural technology and concept of integrated pest management
  - Introduction to responsible agriculture: a model for responsible use of plant protection products and learn how to use them in a responsible way in order to increase economic results, avoid risks to human health (farmers and consumers) and reduce negative impacts to the environment
  - Chinese food culture: knowing the general history on food supply in China, provincial and racial differences, common diet and traditional medicine, and typical food supply chains
- 3. Project-specific Concepts, Issues and Skills
  - Understanding the historical, cultural, and socio-political background of the target clients/underprivileged communities
  - Health, safety and other issues relevant to the service project
  - Moral and ethical concerns specific to the project and beneficiaries
  - Basic food hygiene training: to learn the general principles of food hygiene as described by CODEX, and to understand specific codes of hygienic practice for relevant production sectors
  - Introduction to Hazard Analysis and Critical Control Point (HACCP) and Good Agricultural Practices (GAP)



## Service-Learning – Preserving Cultural Heritage for Ethnic Minorities in Contemporary China Dr Yu Shuo

Department of Chinese and Bilingual Studies

## 13.1 Service-Learning through Preserving Cultural Heritage of Orochen

I have taught for 30 years in the higher education sector, and I am often concerned about how knowledge can be applied to improve the situation of humankind. I have taught at different universities, including the following in three famous cities, Renmin University and Beijing Normal University in Beijing, Institut National des Langues et Civilisations Orientales in Paris, and The Hong Kong Polytechnic University (PolyU) in Hong Kong, and each of them has given me different but valuable teaching experience. There is definitely no doubt about the academic achievements of these universities, but in my view, perhaps with the exception of PolyU, there is one common gap in their curricula left to be filled. They all emphasize the importance of knowledge transmission, but pay little attention to develop students' capacities to link and apply knowledge to their life. Knowledge and its application in life are quite separated.

I am delighted to see PolyU starts to include service-learning (SL) in the curricula of all faculties. Such a design involves students of different disciplines in a community service project which requires all sorts of skills in community governance, and pools together the efforts of different professionals and the knowledge of different disciplines. In SL projects, students of different disciplines work together, apply the knowledge they have learned to address real-life problems, and critically evaluate and reflect on their work and the service they have offered.

Another reason why SL strikes a chord with me is my other experience which I gained during my stay in Europe. Because of my academic interest in history, anthropology with a transcultural approach which links past, present and future, different civilizations and "combining erudite knowledge of scholarship and disqualified knowledge of ordinary people" (Michel Foucault), I was involved in founding the China-Europe Forum when I was working in Europe. The transcultural project gave me an opportunity to work with a group of pioneers who advocate the linking of thought and action for the improvement of the human conditions and understanding. Statesmen, experts, scholars, artists and ordinary citizens from different fields gathered together at the Forum to reflect on global priority issues such as poverty, environmental destruction, food security, energy shortages, as well as endangered cultures and languages that affect human societies. The Forum advocated the importance of working with people at the grassroots level within the community. This practice is represented by "traditional ecological knowledge" (TEK), and is now commonly adopted in the West for knowledge creation, transmission and management. The availability of the Big Data processing technology has made it possible for us to tap into the local traditional wisdom of TEK, and turn it into a rich source of knowledge in support of scientific researches and global governance.

PolyU's decision to incorporate SL as part of the formal curriculum has motivated a team of teachers at the Department of Chinese and Bilingual Studies to propose a SL subject which provides students with a new kind of humanistic education to help

them develop critical thinking and reflect on their responsibilities as a global citizen. The subject involves students in the preservation of endangered minority cultures, and through this SL experience, we hope to introduce students to the TEK philosophy which links knowledge with society, and to alert them to ethical issues when they apply their knowledge to improve the welfare of humankind. The SL project of the subject also helps ethnic minorities to repossess their history and culture. The records obtained during the service will contribute to the TEK database as human treasures to be shared globally.

We have chosen Orochen people as our service target group because the Orochen is the fifth smallest ethnic group in China (with a population of just over 8,000 people according to the 2001 census of China) and has been listed by UNESCO as people having the most endangered culture. Until half a century ago, Orochen people were a group of nomadic hunter-gatherers living in the forested region of Khingan Mountains. They have been mobilized by the Government to relocate down the mountains and to settle in Heilongjiang Province and north-eastern Inner Mongolia. They have begun cultivating farmlands, and the once tough hunter culture is declining, but their agricultural civilization is only marginal. Before they become proficient in planting and harvesting crops, there comes rapid urbanization. Modern tourists come in, but they offer little benefit to Orochen people. Young Orochen men move to cities for jobs, and the elders pass away with regrets that they "cannot even plant crops properly". Teenagers strive to learn the Han language to sit highly competitive examinations. The Orochen language and their once vibrant oral culture that they take pride in is dying, because "kids would not learn it". By and large, over the past few decades, the Orochen culture has been eroded by modernization, collectivization and ethnic intermarriages. Cultural loss has caused a series of social problems, such as depression (in extreme cases leading to alcoholism and suicide), identity crisis, poverty and unemployment.

The situation faced by Orochen people reflects how grand historical changes have transformed the fate of a small ethnic group. In order to help preserve the Orochen culture and minimize the cultural loss, there is great urgency to record the oral testimonies given by the ethnic elders. Thanks to the support of Mr Hing Chao, President of the Orochen Foundation in Hong Kong, the teaching team is able to create the SL subject "Preserving Cultural Heritage for Ethnic Minorities in Contemporary China"<sup>1</sup>. Mr Chao, who has been working in the region for over a decade on cultural heritage preservation, has provided tremendous assistance in liaising with the local communities to facilitate the delivery of our service.

## 13.2 The SL Subject

The SL subject is offered as a GUR (General University Requirement) subject for all students of PolyU. The theoretical part of the subject is completed within the second semester, and the SL project in the summer term. Since PolyU does not offer any major studies in anthropology, students enrolled on the subject come from different disciplines, with little or no anthropological training at all.

### 13.2.1 Learning objectives

The objectives of the course are to save and preserve the Orochen cultural memories, to help Orochen people visualize a dignified life grounded on their existing living wisdom, to broaden students' horizon by showing them the indigenous history of mankind, and to inspire them to reflect on their generic social responsibilities as a global citizen.

More details of the intended learning outcomes of the subject are given in Appendix 13.1.

<sup>&</sup>lt;sup>1</sup> The teaching team comprises Professor Huang Chu-ren, Dr Yu Shuo (subject leader), Mr Hing Chao, Dr Yu-yin Hsu and Dr Yao Yao.

## 13.2.2 Subject organization

In addition to the e-Learning Module on the concept and practices of SL, which is common in all SL subjects, the subject consists of three other constituent parts: (1) discipline-specific concepts, issues and skills, (2) project-specific concepts, issues and skills, and (3) the SL project.

To start the course, students self-study the e-Learning Module on SL. In the first four months of the course, students attend a number of lectures, seminars and workshops to gain a diachronic overview of ethnic cultures and society, China's ethnic minority policies, and ethnographic fieldwork practices. Specialists from related organizations such as the Orochen Foundation are invited to give lectures or seminars as appropriate. Students also need to prepare for their fieldwork (the SL project) by reading relevant documents and histories, and develop a social survey questionnaire with the assistance of an academic advisor for use in the interviews with members of the ethnic group during the SL project.

Lists of the topics of the discipline- and project-specific concepts, issues and skills can be found in Appendices 13.2 and 13.3.

## 13.2.3 The SL project – ethnographic fieldwork

The SL project takes place in the summer for about 10 days. Students travel to the place where Orochen people reside, and are given opportunities to meet representatives from the partner organizations, who will assist them to inquire into the social needs/problems of members of the ethnic community through structural interviews in parallel with casual conversations. Within this period, students are required to commit themselves to no less than 40 hours (excluding preparatory work) of fieldwork that involves interviews with members of the Orochen community, particularly the elders, to register the local cultural practices and traditions, to record their oral history, and to help them revitalize the collective memory of living in the forest.

During the period, students live with the Orochen families in their villages. This facilitates their contacts and deepens their mutual understanding. There are sessions for students to discuss events and/or phenomena that they have observed during fieldwork. Students conduct and record the interviews during the day, and document the data and write their fieldwork diaries in the evening. The diaries, to be submitted to the supervisors after the first part of the fieldwork for getting feedback, provide raw material for their preparation of their own reflective reports later. At the end of the service period, seminars are organized for students' group presentations to the community, and for obtaining feedback from the supervisors. After they return to Hong Kong, students consolidate their learning experiences through group presentations, and organize the fieldwork results before sending them back to the Orochen community. They then wrap up the whole event by mounting an exhibition on the University campus.

### 13.2.4 Assessment of student performance

Continuous assessment is used in assessing students' performance. Students are required to attend all of the discipline- and project-specific lectures, seminars and workshops, and they are assessed in their assignments/learning tasks prior to participation in the SL project.

Supervisors from the partner organizations assess students' performance during fieldwork with reference to feedback from service-recipients. The areas to be assessed include students' teamwork performance and community involvement, their capacities in implementing activities, communication and collegiality, problem assessment and solving, as well as their commitment in SL and how they fit in with the ethnic community at large.

Assessment of students' performance is also based on the quality of three types of work that they submit: (1) records of the oral history and the social survey, (2) the fieldwork

diary, and (3) the reflective report. These submissions are indications of students' fieldwork skills and SL experiences, particularly in terms of their reflective appreciation of minority communities' living models and conditions as "ecologists", their demonstration of empathy towards the ethnic minority group and civic commitment to social work, as well as their understanding of the dynamic relation between cultural loss and social disintegration.

## 13.3 Students' Learning Gains

We are of the view that the theoretical parts of the subject and its related SL project have provided students with a new learning experience. In the past SL projects, we observed that students' interest in and desire for learning more about the Orochen had been aroused when they were introduced to a strange but real community with a history that was alien to them. They learned how to observe details and how to recognize cultural symbols in the fieldwork environment and through their contacts with the people. In the process, they experienced confusions brought about by "cultural shocks", which, when handled appropriately, had facilitated their development of problem consciousness and relational thinking. They discovered a priori commonality of the human spirit through observing and analysing phenomenal differences. The distance between the researcher and the informant was thus reduced, and students became empathetic with the ethnic group: their view of the Orochen as "they" was gradually changed to "we", indicating their acceptance of the Orochen identity. Through this experience students learned to reason step by step and improved their abilities to grasp, understand and analyze social phenomena.

The SL project aims to foster students' development of a personality which embraces responsibility, human sentiment and ecological awareness. We believe that this aim has been achieved. The face-to-face interactions with Orochen people and the first-hand experience of their living conditions have enhanced students' social perception and sensitivity to humanity. The Orochen's adherence to their hope to live a dignified life as well as their respect for nature have served as a mirror with which students reflect on their own existence, thereby helping them to understand the importance of preserving dying cultures from the viewpoint of humankind. The fate of the ethnic group has also awakened students' empathy and sensibility to the fate of humankind, and a sense of civic responsibility.

The following example is a good demonstration of students' development in the abovementioned capacities. In addition to recording the oral history of the Orochen, students also made practical proposals to help the Orochen community to preserve their heritage and to improve their living condition. The proposals included mounting museum displays of the Orochen cultural heritage, setting up B&B inns at Orochen homes, as well as designing historical tours along the Chinese Eastern Railway, and ecological ethnic tours. Making such proposals was not part of the SL project, but students took the initiative to present the proposals because they became aware that more concrete services were needed to effectively help the Orochen villagers. We were much impressed by the brilliant contributions in preparing the proposals made by students of different disciplines such as Tourism and Hospitality Management, Design, Clothing Technology, Languages, Computer Science, and so on. Even the Orochen community were amazed by the amount of work done within the short span of the service period. Meng Gang, Chief of Nanmu Orochen ethnic village, said emotionally to our students after hearing their group presentations, "You have done in a week what I should have started doing 20 years ago." Some of the students continued to participate in this meaningful preservation work by serving as fieldwork guides for the next class of students taking the course.

The learning mode of the subject has provided students with an interesting learning experience. Dull historical events were enlivened by real-life cases and on-site conversations with elders, which were much easier for students to comprehend abstract concepts such as rites, belief, kinship, and power games. Students also learned how to communicate and corporate with the local community, which was crucial to the success of the SL project.

## 13.4 Benefits to the Orochen

Students have helped the Orochen narrate different aspects of their life experiences in the mountains and details of their historic migrations, although these are scattered memories put together in a case by case format. The interview protocols and records of oral history have helped the Orochen reconstruct their history from an "emic" viewpoint.

Such records have in effect awakened the Orochen's consciousness of the rich culture they possess. The students, who are foreign to the Orochen, and their concern about the fate of the Orochen, have made an impact of varying degrees on the attitudes of the informants who narrated their own stories. Some of the interviewees said the interview was their first time they seriously inquired the meaning of their "clan", and studied and mapped the Khingan Mountains in which their ancestors had hunted and travelled. Interestingly, many disadvantages faced by our students in the delivery of their service, such as being ethically estranged, being young comers in the course of history, and being seen as temporary visitors who were not part of the existing system, had turned out to be the keys to unlock the memories of the elder Orochen. The elders broke their silence they had adopted since 1952 when the "anti-superstition" and "leave the altars" movements took place, and confided their obsolete memories in the youngsters who had come from afar. Even Bai Li, Chief of Guli Village, was amazed that our students were able to "make Nanny Wu talk" to them!

## 13.5 Difficulties Encountered and Further Thoughts

There were difficulties at different levels when the SL project was in progress. At a day-to-day level there was the problem of students adjusting to the living conditions of the Orochen village. Our students had to live with the villagers during the service period, but they found it hard to get used to their way of life, because Hong Kong students were long accustomed to having all the conveniences available in a metropolitan city. In Orochen villages, there were no shower facilities, for example, in the region in general, and toilets were built outside the lodging places. Imagine the problem students had when they could not take a bath for 10 days! Hence we were so proud of our students' courage and empathy in enduring their difficulties. Somehow, they resolved that they should live as the villagers, and should do what the villagers had hoped them to do. Perhaps this is also the advice I should share with other SL teachers when they are conducting their SL projects offshore: when in Rome, do as the Romans do.

At a political level, we found it difficult to go between the Government and the "service recipients". For over a decade the conflict and tension between the Government and the ethnic minorities had deteriorated because of the Government's harsh policies towards ethnic minorities and the ethnic groups' struggles to safeguard their rights to live on their lands and preserve their cultures. While we were mindful that we had to handle our relationship with the Government carefully, we surely stood on the Orochen's side (we kept reminding ourselves that the aim of the SL project was to help to preserve the group's cultural heritage). We thought we should provide a "service" to the group rather than just recording oral history. As mentioned earlier, students were aware of the need to provide an effective service to

the group too, and so they proactively proposed a number of ways to help the villagers. We saw tears running down the faces of the villagers when we said good-bye to them at the completion of the project. At that moment we knew we had done something right, and we had won their trust.

Undoubtedly, students were faced with many intellectual, cultural, environmental and social challenges in the process of learning the subject. First, they had to learn to become a practising "anthropologist" within a short time. Then during the fieldwork period, they had to adapt to a different lifestyle in an authentic cultural setting far away from home, and to experience the difficulties that the ethnic group had been having. Third, they had to learn to cope with the "cultural shocks", which were a result of the conflict between their busy, metropolitan time schedule and the laid-back rhythm of the ethnic group living on the Chinese border. Students were initially curious and excited about their mission, but soon they became frustrated and started to lodge complaints. It was at this point they learned how to make the best out of their situation through reflection and self-encouragement. Lastly, they had to learn to cooperate with one another, apply what they had acquired from textbooks to serve the society, and internalize empathy, respect and gratefulness, and cultivate a willingness to assume the civic responsibility of protecting the cultural diversity of humankind.

Perhaps it is still too early to pass the mission of saving cultures to the students. Although we cannot save a language or a culture through our own effort, we have made a first step to construct knowledge of humankind. Thus we consider that our students have done an excellent job in delivering their service. They started off their journey with a curiosity about a faraway culture, and when they returned they were shouldering heavy social responsibilities. Some students said in their reflective reports that they had grown up, developed critical thinking, learned traditional wisdom, acquired life experiences, and understood ethical assumptions. The SL project was an internship in humanity which endowed our young university students with confidence to participate in the construction of society in the future.

To express our gratitude to Orochen people who have confided in us their stories of survival and have treated us with hospitality, all teachers and students would like to present one of the outcomes of our SL projects, the published book *Mountains! Ah Mountains! The Oral History of the Orochen Hunters*<sup>2</sup> to the ethnic group and all readers who are concerned about them.

<sup>&</sup>lt;sup>2</sup> The book was published in Chinese and English by Beijing New World Press in 2016. The Chinese title of the book is 《山上啊,山上! —— 鄂倫春獵民口述史》.

## Appendix 13.1

Students are expected to achieve the following intended learning outcomes at the completion of the subject:

- 1. Understand the concept and practices of service-learning.
- 2. Understand the tension between the preservation of ethnic cultures and the economic difficulties caused by contemporary China's development, and become aware of minority cultural values and the danger of their extinction.
- 3. Understand anthropological concepts, the new concept of TEK and fieldwork skills, and be able to assist the service target group to record its oral history about its traditional wisdom and cultural heritage as well as its struggle to maintain ethnic human dignity in the face of abject poverty.
- 4. Develop a sense of empathy, social justice, generic social responsibility and lifelong engagement in cultural heritage protection.

### Appendix 13.2

The discipline-specific concepts include fundamental concepts of ecological and historical anthropology, as follows:

- 1. Founding myth of ethnicity with cultural diversity in their ecology
- 2. Representation system: cultural heritage, belief (Shamanism), rituals and relationship between man and his environment
- 3. Living in the forest: wilderness, and subsistence economy of hunter-gatherers
- 4. Marginality, long-term social, cultural and environmental impact
- 5. Basic Tungus language for fieldwork interviews
- 6. The Emic approach as fieldwork methodology, and oral history as collective memory and dynamic combat for right to survival and to speak
- 7. Introduction to the concept of Traditional Ecological Knowledge (TEK)
- 8. Protection of culture as fight against poverty

## Appendix 13.3

The project-specific concepts, issues and skills covered are as follows:

- 1. China's "civilizing campaigns", collectivization and agrarian economy, tensions between agriculture, forestry and husbandry
- 2. China's ethnic mobilization policies ("first-generation ethnic policies (1957)" and "second-generation ethnic policies (2011)") and relationship between the majority Han people and minorities
- 3. Health, safety and multicultural encounter, poverty and the danger of extinction of minorities
- 4. Summary history of the Orochen from the Qing period to the present
- 5. The ethnic cultural heritage project and the needs of Orochen people
- 6. Skills for conducting ethnographic interviews, writing fieldwork diaries and taking image records
- 7. Moral and ethical concerns and protection of privacy right

Healthy Lifestyle Challenges for Developing Communities Phyllis Pang School of Nursing

# 14.1 A Service-Learning Subject at the School of Nursing: How It Came About

It is generally opined that an individual's style and pattern of living has a great impact on his/her health. A definition of "lifestyle choices" given by World Health Organization (WHO) in 2002 shows the risk factors in question: "... the role of behavioural factors, notably unhealthy diet, physical inactivity, tobacco consumption and the harmful use of alcohol as key risk factors for non-communicable diseases which constitute a rapidly growing burden." While city people in developed countries adopt a certain lifestyle more or less by their own choice, residents in slum areas of developing countries, especially children, the elderly and the handicapped, are vulnerable to lifestyle-related health problems due to less controllable factors such as poverty, lack of knowledge, limited resources, and social, cultural and religious impacts.

Inspired by the School of Nursing (SN)'s mission of "contributing to the wellbeing of mankind by producing graduates with the attributes of reflective practitioners and future nurse leaders, ... and providing integrative health services and educational programmes for improving the health and health literacy of the community", we carefully considered the integration of the service-learning (SL) concept with nursing education at the School, and came up with the idea of an SL subject that aims to promote healthy lifestyles in developing communities.

In June 2013 I paid a fact-finding visit to Cambodia in preparation for the subject. There I took part in a pre-planned SL project which lasted for five consecutive days, with the support of two local non-governmental organizations (NGOs), Young Men's Christian Association (YMCA) and Happy Tree Community Centre. In 2014, I served as the faculty advisor of a student-initiated project that worked with the YMCA in Cambodia to perform a census survey on health issues of the residents in a slum. The SL project and the data collected in the survey were useful for us to design later the SL subject "Healthy Lifestyle Challenges for Developing Communities"<sup>1</sup>. In December 2014, I joined a preparatory trip to Cambodia with staff from the Office of Service-Learning (OSL) of PolyU, during which I met with local NGOs and confirmed the collaboration plan for service delivery in two slums.

## 14.2 The SL Subject

"Healthy Lifestyle Challenges for Developing Communities" is an open-for-all GUR (General University Requirement) SL subject which aims at eliminating the health risk behaviours and promoting healthy lifestyles in vulnerable communities in developing countries. It engages post-secondary students from Hong Kong, the Mainland and Cambodia in mobilizing and optimizing resources in slum areas in

<sup>&</sup>lt;sup>1</sup> The teaching team of the subject comprises Phyllis Pang and Ellen Ku.

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Cambodia where health care resources are limited. Through their participation in the subject, students learn from their supervisors/facilitators, team members and service recipients, and become better equipped with the skills of team building, critical thinking, problem-solving and communication, and a global outlook. The SL experience also exposes students to the real situation in developing communities and makes them realize that the health of service recipients can be improved through goal-oriented health promotion plans and compassionate care.

### 14.2.1 Intended learning outcomes of the subject

The subject is open for all PolyU undergraduates. Upon completion of the subject, students will be able to:

- Link their SL activity and experience with the academic content of the subject.
- Understand the impact of social, cultural and religious dynamics on health and wellbeing.
- Behave sensitively in the face of cultural and religious diversities and appreciate them, especially those pertaining to lifestyle issues.
- Analyze factors contributing to healthy lifestyles and health risk issues.
- Interview people effectively, make observations and perform assessments related to their health status and risk factors.
- Develop and deliver personalized health promotion plans based upon a holistic evaluation of their clients' lifestyles, environmental, societal, cultural and religious data.
- Work effectively in teams to solve problems they encounter in planning and delivering the service.
- Demonstrate their empathy for people in need and a sense of civic responsibility.
- Reflect on their roles and responsibilities both as a professional in their chosen discipline and/or as a responsible citizen.

Nursing students are trained to be future nursing leaders in mostly hospital or community healthcare settings. It is hoped that when these students enrol on the course, they will attain the aforementioned abilities, and therefore will be better equipped to perform their future roles as health educators, health promoters, health counsellors, care co-ordinators, case managers, change agents and public health advocators, irrespective of whether resources are limited or scarce. On the other hand, students from non-health-related disciplines are expected to learn the importance of a healthy lifestyle and practise it in their own life.

### 14.2.2 Academic content of the subject

The academic content of the SL subject consists of three theoretical components: the SL-related component, the discipline-specific component and the project-specific component.

1. SL concepts and practices (the e-Learning Module on SL)

The e-Learning Module on SL developed by OSL includes readings, exercises and assessments designed to introduce the following concepts and practices of SL to students.

- Principles, concepts and myths of SL
- Benefits of SL to students, the University and the community
- Ethical issues on SL
- Basic concepts and theories of social problems, developments and justice
- Social responsibilities of global citizens as intellectuals and professionals
- Proper attitudes and behaviours in service delivery
- Developing a service project proposal/plan
- Effective team work and problem solving skills in SL projects
- Reflection as a tool for learning

2. Discipline-specific issues, concepts and skills

Lectures, seminars, tutorials and/or workshops are conducted to teach students the following discipline-specific knowledge and skills. Students are expected to co-relate the knowledge and skills learned to carry out health assessment and health promotion.

- Concepts of health and wellness
  - Definitions and dimensions of health: physical, emotional, social and spiritual wellness
- Promotion of a healthy lifestyle
  - Factors contributing to a healthy lifestyle
  - Definitions of health education and health promotion
  - Impact of social and cultural dynamics on health and wellbeing
  - Overview of teaching and learning process
- Assessment of health status
  - Health history taking and constructing a personal health profile
  - Assessment of health profiles, lifestyles and behaviours
  - Interpretation of vital signs
  - Encouraging self-monitoring of health status
  - Addressing dietary restrictions, preferences and alternatives
- Practical skills
  - Vital signs taking
  - Interviewing and personal communications
  - Developing a health promotion plan
- 3. Project-specific concepts, issues and skills

Project-specific seminars, tutorials and/or workshops are conducted to facilitate students' understanding of the following topics as well as other issues relating to the SL project. Experts and speakers from outside (e.g. OSL, NGOs) will be invited to contribute to some of these sessions as appropriate.

- Historical, cultural, religious and socio-political backgrounds of the target communities
- Health, safety and ethical issues relevant to the project

## 14.2.3 The SL project

Students have to provide 40 hours of direct service to the service recipients in two slums in Cambodia over a total of 5 days during the semester break. The SL project is structured as follows:

#### Days 1 and 2

Students visit and interview the service recipients of target families living in the slums and perform needs assessments that focus on various aspects of health. They assess the health status and examine the lifestyle patterns of the service recipients, and identify the key factors that might be affecting their health status. Based on the information gathered, a detailed health profile is drawn up for each service recipient.

#### Day 3

Students go out to investigate neighbouring places, particularly markets. Based on the resources available in the nearby places and the results of the initial needs assessments conducted on the service recipients, students develop a tailor-made health promotion plan for their clients. In drawing up the plan, students also consider other factors such as the prices of resources, the clients' budget, income, dietary restrictions, preferences and religion. The emphasis is that students take a holistic approach and develop a health proposal that will fit in with the social, cultural, religious beliefs and habits of the clients, rather than advocating drastic lifestyle changes that may be difficult for the clients to follow and to sustain.

#### Days 4 and 5

Students revisit the service recipients and present to them the proposed health education plans. They offer suggestions to their clients about what habits and behaviours can be changed in order to achieve a healthier lifestyle. If it is necessary or appropriate, students may give demonstrations like going shopping with their clients, and showing them how to store or prepare food.

During the period 1-14 June 2015, a large team of 51, comprising 29 PolyU undergraduates (17 nursing and 12 non-nursing students), 2 nominated year-3 student-nurse leaders, 2 exchange students from the Mainland, 3 nursing graduates, 15 associate degree students from the Cambodia Human Resource Development Institute (HRDI), who acted as volunteer translators for the PolyU team, participated in the project. There were 168 service recipients. During the direct service stage of the event, all the students paid home visits to the service recipients of target families living in two slums and interviewed them with the help of two local NGO staff. They conducted a 57-item health survey which aimed to understand the service recipients' dietary habits, smoking habits/history, alcohol consumption, physical exercise and leisure activities, in order to identify their health needs. Based on the results of the interviews which provided the required information, the students were able to develop feasible health proposals for the service recipients.

## 14.3 Student Assessment and Reflection

The assessment of the subject is well structured to evaluate students' knowledge (cognitive learning), skills (behavioural learning) and attitude (affective learning).

The e-Learning Module on SL and the discipline- and project-specific lectures/seminars/tutorials/workshops include assignments and learning tasks that are designed to assess students' ability to link SL with the academic content of the subject, as well as their understanding of their roles and responsibilities in the society. Students also need to prepare an interview plan and a health assessment plan before going on-site.

Students are supervised by subject teachers on the field, and their performance, including their attitude and responses to their clients, the NGO staff and other team members, will be assessed. Their attitude and performance during the service delivery reflect their ability to communicate effectively with others and collaborate with team members, their degree of engagement with their clients, their sense of civic responsibility and professional ethics, their empathy for the underprivileged, and their ability to behave sensitively towards people from diverse cultures. The tailor-made health promotion plans that students have developed for their clients will be assessed on their ability to apply the theoretical concepts learned in class to the service setting. We also obtain feedback from the service recipients and the NGO partners regarding the quality of the service delivered.

Reflection is an important part of learning. To help students reflect deeply on their SL experience, debriefing sessions are facilitated by subject teachers on the field at key service checkpoints each day and after the completion of the whole project. Facilitators and teammates also provide timely feedback to students to help their reflection.

Students are required to write a pre-trip and a post-trip reflective journal. In the journals, students link their SL experience with the academic focus/discipline-specific content of the subject. They also review their learning gains, identify areas for future improvement, and reflect on their roles and social responsibilities. Guiding questions are also provided to facilitate students' deep reflection on the significance of the service experience to their future personal and professional development.

There are group presentations after students come back to Hong Kong from the service trip. The presentations facilitate peer learning and stimulate students' reflection on their service experience, evaluate the implications of their project findings and assess how meaningful the project has been for them and for the community.

The assessment items and their relative weighting are as follows:

- 1. Performance in the e-Learning Module (10%)
- 2. Performance in the discipline-specific and project-specific lectures, seminars, tutorials and/or workshops (20%)
- 3. Performance during the delivery of the service (40%)
- 4. Reflective journals (20%)
- 5. Group presentation (10%)

## 14.4 Benefits of the SL Subject

The SL subject contains academic components and an SL project. The latter is an innovative, pioneering community collaboration programme between SN of PolyU and Cambodian community stakeholders. Project evaluation and feedback from stakeholders indicate that different parties involved in the SL event have gained a lot of benefits.

### 14.4.1 Learning gains of our students

The SL subject is open for both nursing students and students from other disciplines who may not have a nursing background. The academic components introduce students to and prepare students for the project. The subject is arranged in such a way that students are able to make optimal use of the academic content of the subject in the service setting. Our observation shows that the SL project not only provides a real-life situation for students to apply their theoretical concepts and skills, thereby strengthening their understanding of the subject, but also equips them with better communication, leadership and problem-solving skills. We believe the subject has benefitted students with different academic backgrounds.

The service component of the subject provides a practical venue for students to apply their knowledge and skills in interviewing people, recording their health history, assessing their vital signs and analyzing all information in order to develop a health profile. Through the development of a proposal for healthy diet and lifestyle, students learn to analyze the contributing factors in staying healthy for the local people. Since each of their plans has to be feasible and sustainable, the students are encouraged to develop a deep understanding of the local community, especially the social, religious and cultural impacts on the service recipients' health status.

During the presentation of the health proposal to their clients, and in walking through the proposed plan with them, students develop and practise their communication skills in conveying health concepts to others. Moreover, since this SL project requires students to spend extended periods of time with the local community, it helps them develop a thorough understanding of the issues faced by the underprivileged people, and hence empathy for them.

From students' reflective journals and from their feedback on the SL subject collected by two external reviewers, we are pleased to note that students were satisfied with the subject arrangements in general, and remarked that the SL project was a rewarding, meaningful experience. We also observed that students had attained positive changes in level of happiness, friendship, team spirit, social and civic responsibilities, and interpersonal, problem-solving, critical thinking and leadership skills after taking part in the SL project. Some students had indicated their intention to continue their participation in community service or civic engagement.

#### 14.4.2 Benefits to the local NGO partners

Feedback collected from the two NGOs in Cambodia showed that the local students from HRDI and NGO staff had benefitted from the SL event in 2015. The local students valued their friendship and cooperation with PolyU students, and were pleased with the cross-cultural understanding. They said that the service project had deepened their compassion for the needy and their desire to serve the poor community.

Staff from YMCA was thankful for their partnership with the PolyU nursing team, and indicated that they had the same vision and mission as the team, which is to serve people and bring a better life to Cambodians.

#### 14.4.3 Benefits to the service recipients

People living in developing communities are less aware of how their lifestyle and habits affect their wellbeing, since they may not have access to the related information. Even if they have the required information, they often lack the resources to adopt an alternative, healthier lifestyle. Another issue is that physicians' suggestions about changes in lifestyle are usually given to them in a piecemeal fashion, regardless of the individual's habits, cultural and social preferences. As a result, the suggested changes are difficult to be carried out and maintained. The service project requires students to design a personalized, sustainable health plan that fits in with the client's health profile and lifestyle, and so it is more likely the plan will be followed by the client and it will bring a long-lasting benefit to his/her health.

After the 2015 SL project, we noted that clients had developed a positive attitude to our service. They showed our students in video clips how they practised the physical exercises taught earlier by our students; they wrote to students agreeing to adopt a healthy lifestyle, signed quit-smoking contracts, and promised that they would reduce their alcohol consumption. We believe there are positive impacts on the service recipients as they have started to concern more for their health.

## 14.5 Teachers' Reflection on the Subject

We are grateful to all the participants in the SL subject and the SL event in 2015. Without their support and participation, the collaborative project would not be so successful. We are also happy to note that students have consolidated the concepts and skills of the subject through the service project, and that their sense of civic responsibility and empathy for the needy have been enhanced through the long periods of contact with people in the slums. It was a satisfying experience for us to see the service recipients wave their hands and smile to us when we arrived at their homes, and that at the end of the project, they were willing to adopt a healthier lifestyle.

For PolyU students, rendering service to the underprivileged in developing communities is a completely new and challenging experience. Our students were quite shocked by the living conditions when they first met people living in rural slum areas in Cambodia. It was somewhat out of their expectation when they had to perform home visits in the slums in extremely hot weather and without air conditioning, work and reside in places with insufficient resources and limited access to the Internet, and use different verbal and non-verbal means in communication. They had to learn to be tolerant and put aside their personal views during the service delivery. Another issue with our students was that they were not mindful of the risks of their stay in slum areas. They should avoid health hazard behaviours such as eating unhealthy food bought from roadside vendors or riding on motorbikes. More on-site reinforcement and coaching are clearly needed.

There were also difficulties in executing our original plan on site. That means what students had learned and developed in Hong Kong were sometimes not applicable and feasible in the real service setting. We believe that it is more preferable if students are given more time and opportunities to learn how to bridge the gap between theory (knowledge) and practice (reality). This is crucial to making the SL project more sustainable and feasible, especially when we are dealing with clients in a different social and cultural context.

Lastly, there was the major challenge of language barrier. Since the team relied heavily on local students for translation, misunderstandings sometimes occurred, and communication took a long time. This situation can be improved in future projects if relevant documents are sent to our NGO partners in advance for their translation and preparation.

To conclude our experiences, we would like to make a few suggestions on the design and implementation of a credit-bearing SL subject:

- 1. Preparation: Relevant information is sent to the collaborating NGOs in advance for better preparation and translation.
- 2. Contingency: Unexpected circumstances such as sickness and misbehaviours of students may occur. The team makes relevant assessments and plans well ahead for any possible contingency.
- 3. Role model: The teaching team acts as role models by showing their care and concern for the caregivers (i.e. students) to facilitate their all-round learning.
- 4. Peer support: Student leaders are encouraged to take on a more active role by sharing their experiences with other students.
- 5. Evaluation: Teachers conduct post-subject evaluations in order to refine teaching strategies and content, activities, logistics, etc.

### Ecotourism in Rural and Developing Regions Dr Alan Wong & Dr Chloe Lau School of Hotel and Tourism Management

#### 15.1 Rationale

One important component of PolyU's educational philosophy is that community service has an important part to play in students' learning and personal development. Many teachers and students of the University have thus been involved in different types of voluntary work before the University's official decision to make service-learning (SL) a requirement for graduation starting from the 2012/13 academic year. Prior to this, our subscription to the same educational belief had led us to work with students in a number of university-wide voluntary service projects, including "The Golden Journey in Farmland – Service Learning for Hong Kong's Youth" and "Education with a Heart: Community in PolyU". Likewise in the School of Hotel and Tourism Management (SHTM), there was a small project in which students volunteered to visit and bring food to some elderly people who were living by themselves. We saw changes in the students through their participation in the projects, so we welcomed the University's decision in making SL a graduation requirement.

Why is ecotourism used for SL? Ecotourism has become a popular trend in the tourist industry nowadays. As a team the two of us are keen to go with the trend by offering a subject on ecotourism in SHTM. Our individual experience and interest further stimulated us to explore the possibility of mounting the subject with a dual purpose: on the one hand we could train our students about ecotourism and the planning of ecotours, and on the other they could make use of the knowledge so learned to help the people in a developing village or area to run ecotours so as to protect the environment and alleviate poverty. This fits the SL model well. Our respective expertise and interest enable us to co-lead and co-teach the subject as a team: Alan would provide students with the academic concepts and practical skills in ecotour planning because of his experience in organizing field trips and leading long-haul tour groups to different parts of the world, and Chloe would focus on the service part because of her background and interest in community-based tourism. It was through such joint effort that the SL subject "Ecotourism in Rural and Developing Regions" came into place in the 2013/14 academic year.

#### 15.2 The Subject

Although the subject is offered by SHTM, it has been designed as a GUR (General University Requirement) to be open to all undergraduates of the University.

#### 15.2.1 Subject content and intended learning outcomes

In order to fulfil the dual purposes mentioned above, the subject covers three major areas: (1) the concept and practice of SL, (2) discipline-specific concepts, issues and skills, and (3) project-specific concepts, issues and skills. On completion of the subject, we expect students to be able to understand the concepts and skills of ecotourism, and to apply ecotourism as a tool to help the people of a rural village or developing area to run ecotours so as to sustain the environment and improve their livelihood.

#### 15.2.2 Student study effort

The subject is for two semesters. Students will be introduced to the concepts and ideas about the subject in the first semester, and carry out an SL project in the next semester.

The expected number of hours of student effort in preparing for and rendering the service in the selected site is as follows:

Self-learning	
e-Learning Module on SL (provided by the Office of Service-Learning)	10 hrs
Class contact	
Discipline-related lectures, tutorials, seminars and workshops	13 hrs
Project-specific seminars, tutorials and workshops	7 hrs
Reflection and review tutorials and sessions	8 hrs
Other study effort	
Readings, self-study, and planning and preparation for the service project	26 hrs
Direct rendering of service	45 hrs
Reflection and review	20 hrs
Total Student Study Effort	129 hrs

#### 15.2.3 The service activities

The site selected for the service project is usually a poor village or rural area on the Mainland, in Taiwan or in a developing country in Asia such as Cambodia and Indonesia. The type of activities that students would be involved in normally include:

- 1. Assess /review the potential ecotourism resources for ecotourism development.
- 2. Meet and live with local families to understand the culture of the community.
- 3. Carry out interviews and observations to understand the local culture and customs.
- 4. Plan itineraries for different target markets.
- 5. Design innovative ecotourism activities for tourists.
- 6. Design brochures and website to promote the project site.
- 7. Provide plans/suggestions to market the project site.
- 8. Provide relevant training to the community on topics such as food safety and hygiene, basic English for communicating with tourists, basic nursing care for injury, basic ecotour guiding skills, etc.

During the actual service period, students would be grouped into five or six teams to take up different tasks of the service to be rendered. For example, one group of students may be assigned to design the itinerary of ecotours for the selected region, another to train the local people there to become ecotour ambassadors or guides, and the third group, with members coming from the School of Nursing, to educate the ecotour guides about hygiene, safety and first aid. Each group would be required to submit a plan/proposal on their objectives, the implementation procedures and the expected outcomes of the tasks assigned.

#### 15.2.4 Assessment

There will be individual and group assessment in terms of students' planning and delivery of the service, as well as their own reflection on their work.

The assessment of students' planning and delivery of the service includes the group's written project plan/proposal before they set out for their service project, and the

group's presentation and written report after completion of their work. The proposal is assessed according to the rationale of their objectives, the feasibility of implementation, and the smoothness in the rundown of the service programme. After the service has been rendered, the group has to give a PowerPoint presentation of their work, and submit a written report on their findings and suggestions. The group presentation is assessed in terms of clarity, team work and presentation skills, and the written report is evaluated with a focus on details such as the organization of the service activities, the application of subject knowledge in the planning and implementation of the service, the inclusion of innovative elements, etc.

In addition to the above assessment work, each student will have to submit an individual self-reflection journal. They need to keep a diary of what has happened every day, and reflect on whether they have applied theory in practice and what they have learned from the service experience.

#### 15.3 Recent Service Projects

In the first couple of years, we had mostly chosen areas or villages on the Mainland as our target sites. Some of them (for example, Qingping in Sichuan in 2014 and Yunnan in 2015) were selected at a time after they had just encountered natural disasters such as earthquakes and were badly in need of services for recovery. The aim of our project in Yunnan was to design and run events to promote sustainable tourism in the town Tuan Jie Xiang. It involved the training of migrant children there to become eco-ambassadors for the town's sustainable development.



However, since many of these areas had already attracted a lot of assistance these few years, we decided to extend our selection to include other areas in Asia. In the summer of 2016, we had one group of students going to Cambodia for their SL project (http://sarahleunghl.wix.com/sl2016).

During our study of the site in Cambodia for the planning of ecotours, we came across Silk Island, an island near Phnom Penh which is rarely visited by tourists but is valued by many local expatriates as their backyard garden. The idea of cycling tours quickly sparked off, and as a result we had designed ecotours on bicycles for the island. The tours can now be found on the project website.

#### 15.4 Not an Ordinary Field Trip

Learning through field trips is common in some SHTM subjects. For example, in the subject about conventions and events management, visits to big convention centres, modern facilities and fine-dining restaurants are venue a good way for students to learn about the business. There they meet managers in the field, and are usually enthusiastically briefed about the trade. They may be invited to act as "checked-in" guests of five-starred hotels, just to experience for themselves how hotel guests are made to feel at home. They learn the details of hospitality from their predecessors simply by observation.

But visits to selected sites in this subject are totally different from the field trips we have in other SHTM subjects. Here students will play a more active role in the visits. It is therefore important for them to gain an understanding and reorient their attitudes and expectations as early as possible. Since the service sites are often in developing or rural areas, students should not expect to work in a comfortable environment and would have to learn to adapt to the living conditions there. For example, students who went to Cambodia have a lot to tell about their experience: they were absolutely appalled by the number of flying ants they saw when they turned on the lights in the evening.

Field trips in other subjects are mostly well planned by teachers beforehand, but in our case, students would have to be proactive in preparation for the visit. Apart from devising a detailed, practicable plan to help the people in the selected area to develop sustainable ecotours and improve their livelihood, they also have to implement the plan and the proposed activities within the limited time of the visit. Take the Yunnan project as an example. In the 11-day visit to the town, students had to spend the first two days to communicate with the local collaborating organization and stakeholders to find out what they wished to do and how new developments could be linked with old ones. Then they had to design ecotour activities and work out a training programme for the people there in the next six days, and to deliver at least 40 - 45 hours of direct service in the remaining days. In the evenings during the visit, they also had to spend time to reflect on the work done so far for possible improvement of their plan. Finally, at the end of their service period, they would have to give a presentation to the stakeholders to wrap up the whole event. (More details of the Yuunan project can be found at the following website: http://htm2s01.wixsite.com/tjx2015.)

#### 15.5 Difficulties in Mounting a GUR SL Subject

The subject is offered as a Level-2 GUR SL subject by SHTM. In the first year, we were quite pleasantly surprised by the large number of applicants, but we were also a little disappointed to see that most of the applicants had come from other disciplines rather than from our own School. (We later found that it was partly because the class time of our subject had clashed with that of the core subjects that SHTM students had to take in Year 2.) At first we were worried that teaching students with no knowledge at all about tourism, and requiring them to design practicable ecotours, might cause some problems. But our worries were soon cleared when we saw the cross-fertilization of ideas among the students when they applied the knowledge and skills of their own discipline in the service. The nursing students mentioned above was one good example. In the Cambodia project, engineering students became the local people's sweethearts when they helped them install electric fans. On the other hand, students from disciplines such as engineering and design would find the subject useful, as they could apply the ecological concepts so learned in their own engineering or interior/product design projects. We also gladly noted that after a semester's immersion, all the students from other disciplines had adopted SHTM's culture of respecting formal occasions by being present in good attire and punctual. In the final presentation sessions, all students were well-groomed and arrived on time.

By comparison, SHTM students might know a bit more about the business of tourism management. Often they were able to anticipate the type of questions that stakeholders (or teachers) would ask or the kind of problems that might occur. They had answers or solutions ready for use, and teachers would be confident that everything would be in good control at a meeting or during a service. Using the Yunnan project as an example again, we noted that the SHTM students were able to foresee that the teachers would be interested in including menu design experience as well as sustainable local cooking and food tours as tourist attractions, and had

proactively developed a set of menus for a non-profit-making youth hostel that had joined the town's ecotourism project. In this respect, the actions of students from other disciplines might be less anticipatory, yet the novice ways in which they understood and tackled problems often carried new ideas and suggestions which pleasantly surprised us. So a good mix of students with varied academic knowledge and skills taking a GUR subject has turned out to be more an advantage than an obstacle to us.

#### 15.6 What Students Have Learned from the Subject

What students had learned from this GUR SL subject was multifaceted, and every student was able to pick up something useful to them.

First, with the general acquisition of the concepts and issues of ecotourism, students were able to practise being a responsible ecotourist when they were themselves on a tour. For example, they would be more aware of the preservation of the environment: they would now bring their own water instead of buying bottled water along the way.

Students' close contact with the local people during their visit to the selected area or village had also positively affected their personal development. Through the service experience, they had learned to understand other people's way of life and developed a general empathy for others. In Cambodia, students had a chance to visit two elderly women who earned their living by making plastic baskets from plastic bags they gathered from rubbish bins. There they saw a real case of how people worked hard to make a living, and what they did had in effect helped to preserve the environment. Students were very touched by what they saw and shared their feelings and respect for the two elderly Cambodians on the project website.



Academically, students taking the subject are introduced to three major areas: the basic concepts, issues and skills of ecotourism, the concepts and practice of SL, as well as the concepts, issues and skills for research studies related to project sites. The theories and skills of ecotourism would facilitate students' planning of the ecotours and their implementation of the service programme. The site visit, an integral part of the subject, requires students providing the service to the community. This service process also helps students develop their soft skills. They have to learn to respect the local culture, communicate effectively with different groups of stakeholders (the local people, the collaborating organization, and relevant government officials), and work as a team to solve problems and achieve the goals.

Students' feedback showed that they found the on-site action-and-reflection process meaningful because they were able to use what they had learned from the subject to help the target group and improve their plan based on the group's immediate responses. They gained much confidence and satisfaction when they saw genuine smiles on their clients' faces. They also learned to appreciate the work of others, after for example they themselves had spent three hours just to prepare a 20-minute lesson for their target group.

#### 15.7 Challenges to Teachers

Resources support and workload are two major issues for teachers. A SL subject at best is regarded as another 3-credit subject, but at worst it is considered not cost-effective because it can only accommodate a small number of students. As well, teachers often have to seek funding themselves to support students' site visits.

The issue of workload for a SL subject which incorporates an overseas site visit as a key component cannot be over emphasized. Apart from the class contact hours, both of us have to organize and lead a 12-day service trip, during which the teacher has to be supposedly on duty for 24 hours each day. Prior to the actual visit, the selection of a site that meets our requirements also involves a lot of work and time. A pre-visit is often necessary to evaluate the suitability of a site unless it is a revisit. According to our experience, we were only able to select one site for every two or three sites we visited. (We did receive requests for reruns of the service from some of our previously visited sites; often we had to decline the requests because we thought the ecotour plans we had designed for them could be used for some time.)

The teacher-student ratio in a SL subject has to some extent masked the workload issue. On average the student intake of our subject is between 30 and 40, which seems to be a very small number compared to many other subjects. But compared to teaching a class on campus, it is much more stressful for a teacher who leads a group of 30 to 40 students to a site in a foreign country – he/she has to be mindful of students' health and safety in addition to the supervision work throughout the service period. Thus the calculation of staff's workload based on the usual parameters may not reflect the real workload.

To date, we have developed ecotours, along with supporting publicity materials such as websites and brochures, for a number of places. We have subsequently received enquiries from some of the service recipients about the continual use of the materials to promote their tourism. While we are pleased to learn that the materials are of good use to the service recipients, we are also aware that there is a copyright issue, as the materials have been produced by students and staff of the University within the learning and teaching process. It would help if there is an institutional policy with regard to such requests.

Teachers leading a SL subject must be prepared to shoulder a lot of responsibilities. They will not take it up without a heart and a strong sense of duty, and their own "can-do" attitude during a site visit would definitely have a positive influence on students. Teachers have to be mindful of every detail during the entire overseas journey in order to avoid any unexpected accidents (for example, it is important to remind all students to get back their travel documents after the check-in procedure at the airport). They have to be the first one to arrive at, and the last one to leave, a site or venue in case any problems may occur. Yet the resources and workload issues are factors which demotivate teachers when they consider to offer SL subjects. Since SL has proved to be valuable to students' learning and personal development, it will worth the effort of all parties concerned to resolve the issues, particularly in consideration of the question of succession after a few years' time.



Technology Beyond Borders: Service Learning across Cultural, Ethnic and Community Lines Dr Grace Ngai & Dr Stephen C. F. Chan

Department of Computing

#### 16.1 Introduction

Computers and related technologies have a huge impact on daily life nowadays. Almost every aspect of life, especially in Hong Kong or similar developed regions, requires interacting with a computer in some way. Services are increasingly being outsourced to e-platforms that use machines in lieu of humans. The increasing awareness of information security and privacy has introduced layers of authentication, many of which often require interacting with a smart device. Computers are so ubiquitous that many sectors of society simply assume that their customers or stakeholders are computer-literate. On a global scale, the increasing connectedness of the world means that even for them, communications and information are also becoming dependent upon the Internet and communications technology. In other words, information technology has become a necessity rather than a luxury.

This reliance on computing technology has brought about its conveniences, but it also is having a huge impact upon the sector of the population which does not have the privilege of being familiar and comfortable with computers. In Hong Kong, they include the elderly, who may not be computer-literate. They also include teachers in under-resourced schools which have been tasked to introduce more computing-related elements into their curriculum, but who themselves may not have the knowledge or resources to do so. They may include disabled people who could benefit from having computer-aided therapy, but who do not have caretakers who are tech-savvy enough to identify or devise these solutions for them. Outside of Hong Kong, these include populations who simply do not have the access to computing technology, or, at a more basic level, to the electrical and Internet infrastructure that powers this technology.

Given that computers and Internet technology is so ubiquitous nowadays, most of our students can be counted as "digital natives", having grown up with computers and technology. Many of them, even those who are not majoring in Computing, possess skills and knowledge about technology that would be the envy of many other people. Yet, most of them are not aware of how deeply computing technology impacts them, how much they know, and how much this technology impacts people who happen to be on the other side of this "digital divide", or "information divide".

This is the motivation and focus of this course. In 2011 we proposed the service-learning (SL) subject "Technology Beyond Borders: Service Learning across Cultural, Ethnic and Community Lines". Through the subject and its related SL projects, we wish our students to become aware that (1) today's technology is pervasive, but it is still out of reach for many people, and this happens even in developed places such as Hong Kong; (2) technology is so ubiquitous today that those not having access to it are in a severely disadvantageous position, even in developing regions where the more basic needs are food and water; and (3) technology can benefit people in many different ways, and with appropriate deployment, it can help change people's lives. Finally, we wish our students to

experience how they can harness technology for the benefit of the underprivileged, even for those who are not from disciplines such as Computing or Engineering. This subject has been offered since the 2012/13 academic year as a General University Requirement (GUR) subject open to all full-time undergraduate students of PolyU.

#### 16.2 The SL Subject

The theoretical part of the subject lasts one semester. The SL projects are carried out locally or offshore starting mid-way during the first semester, or in the second semester. The subject is open to all PolyU students. There are no interviews for students for local projects, but since overseas projects always have a limited number of spaces, students who wish to choose offshore projects are interviewed and assessed on their sense of responsibility, maturity, readiness to serve overseas, and ability to contribute to the project.

#### 16.2.1 Subject components

The subject consists of four components:

- 1. An e-Learning Module on SL, which introduces students to the basic concept and practices of SL.
- 2. Discipline-specific lectures and seminars, which are designed to introduce students to the relevant academic topics and issues. Enrolled students are given opportunities to discuss the issues in greater depth through small group discussions, assignments and presentations. The concepts covered include the digital divide, appropriate technology, information literacy, energy poverty, etc.
- 3. Project-specific seminars, tutorials and/or workshops, which are designed to (a) enable students to gain an understanding of the target clients/underprivileged community, as well as other issues relating to the SL project, and (b) provide training for students in generic skills in planning and delivering the SL project. Guest speakers or experts from relevant fields or organizations are invited to contribute to some of these sessions as appropriate. For example, students who will be teaching STEM literacy in a primary school in Hong Kong may have a workshop from a social worker who will introduce them to the population profile of the school district in which they are working. Students who will be building a computer laboratory in Cambodia might get lessons in renewable energy (if they will be using that), setting up wired and wireless computer networks, models of maintaining computer centres, along with cultural training that educates them about the culture of the country in which they will be serving. A hands-on interactive format is used where possible.
- 4. SL projects, which are designed for students to apply their academic knowledge and skills to serve the community, and to develop their abilities in creativity, problem-solving, teamwork and communication through a service experience.

Students are required to complete the e-Learning Module, to attend all the discipline- and project-specific lectures, seminars and workshops and to successfully complete all of the required assignments/learning tasks prior to participation in the SL projects. The subject content of the e-Learning Module, and the discipline- and project-specific subject contents are given in Appendix 16.1.

#### 16.2.2 Student assessment and reflection

Students' performance in the subject is assessed as follows.

Students' understanding of the concept and practices of SL (the e-Learning Module on SL) is assessed through assignments and specially designed learning tasks, which

evaluate students' ability to link SL with the academic content of the subject, their appreciation of their role and responsibilities in society, and their empathy for disadvantaged individuals or community groups. Students are required to successfully complete the module within the first four weeks of the semester in order to pass the subject.

There are class discussions and assignments during and after the sessions on discipline-specific concepts, issues and skills; these discussions and assignments assess students' understanding of the issues they have discussed and assist their learning process.

To encourage students to take responsibility of their own learning, they are required to develop proposals and plans for the SL projects. They study the context and needs of the communities involved, and either prepare project proposals (for development-based projects) or design teaching content and material (for teaching-based projects). Their proposals and/or teaching material are used to assess their ability to apply their discipline-specific as well as other knowledge and skills to deal with issues and problems in the service settings.

The execution of the service project is arguably the most important component of a SL subject, hence students are intensively supervised and assessed during the service delivery. Their contribution to the team and project, their attitude, performance, degree of engagement with service recipients, collaboration with other students, and relationship with collaborating organizations are assessed. These are taken to be aspects of their ability to communicate effectively with clients and stakeholders, their empathy for people in need, their sense of ethics and civic responsibility to apply their knowledge, and their skills to deal with complex problems in service settings.

Reflecting on their experience, making sense of what they have done and analyzing the impact of their service on the community as well as themselves is critical to the students' learning process; hence it is also rigorously assessed. To guide students in using reflection as a tool for learning, reflection and review sessions are held both during and after the SL project. Students are required to submit reflective journals and reports both during and after the projects in order to demonstrate their ability to (1) link their SL experiences with the academic content of the subject, (2) reflect on their SL experiences to identify their learning gains and areas for future improvement, and (3) reflect on their roles and social responsibilities. Class presentations of their reflection are required and assessed.

#### 16.3 The SL Projects

Since technology is such a broad topic, and different communities do have related but different needs, the SL subject has been designed as an "umbrella" course containing several different SL projects, each to be conducted by a different group of students, possibly in different sites. For example, a total of seven projects were carried out in the 2015/16 academic year. They were:

- 1. Building a community learning centre in Rwanda.
- 2. Building a community learning centre in Cambodia.
- 3. Building a solar charging station in Rwanda.
- 4. Building a solar charging station in Cambodia.
- 5. Teaching computer literacy in Kyrgyzstan.
- 6. Teaching STEM literacy with computer-aided learning in Myanmar.
- 7. Designing appropriate technology-assisted devices for institutionalized, severely mentally disabled children in Hong Kong.

Students work in groups on the projects, and are assigned different responsibilities based on the needs of the projects and the aptitude of the students. Each project is designed to include approximately 40-50 hours of preparation work and 40-50 hours of frontline service. The type of services rendered by students is also designed to be comparable in nature and difficulty. Overseas projects involve approximately 10-14 days of intensive frontline service, and local projects are conducted in the evenings or at weekends.

To convince our students of the impact and significance of the projects, we must be convinced of such ourselves to begin with. We therefore research these projects thoroughly first to ensure that we are fulfilling a real community need. We identify our community partners mostly through personal contacts. We make it a principle to build up a long-term partnership with the collaborating non-governmental organizations (NGOs), since our experience has shown us that only through continual efforts in working together can both sides come to an understanding about each other's requirements and intentions, and build up the mutual trust for a truly fruitful collaboration. This understanding is particularly useful in large scale, truly impactful projects that bring real benefits to the community. For example, we have been working in Cambodia since 2010 (before the University made SL mandatory in 2012), and with the same village since 2013. This has helped us build up trust and a good working relationship with the villagers there. More importantly, we come to understand their real needs so well it is possible for us to get assistance from colleagues teaching other subjects to meet the required service needs which come up.

Although the service offered by the projects may look very different, they are all underpinned by the key academic concepts that we wish our students to learn – the digital divide and appropriate technology. The course therefore starts off with four to five lectures that cover the key concepts. Individual project groups then split off for workshops and laboratory sessions that give them the skills and training necessary for them to carry out their project. Typically, students who were going to Rwanda and Cambodia would learn about solar panels and receive training in using hand tools. Students who were to involve in instruction-based projects in Kyrgyzstan and Myanmar would learn about lesson planning and classroom management. Students who were going to design technology-assisted devices would learn about human-computer interaction and prototyping. In general, students will attend six to eight workshops or laboratory sessions to prepare for their projects.

The projects require students to make direct contact with the service recipients and design technological solutions to meet their needs. The experience in offering the service helps them understand the practical issues of societal and community needs, ethics, and civic responsibilities associated with different cultures, ethnicities and societies. It also helps them appreciate the empowering effects of technology in tackling the issues.

Throughout the project, students are expected and guided to make observations about how their experiences link with the academic concepts taught in class. When students are on-site, they will generally have a reflection session after one or two service sessions. The reflection sessions are designed to clarify and make sense of their observations, helping them to understand the background and causes behind the phenomenon observed, guide them to reflect more deeply on their experiences, and give them support if they encounter difficulties.

Each project brings its own set of challenges and rewards. In some of the projects, the impact on the target community is quite obvious. For example, it is easy to see how the lack of Internet access inhibits access to information, or how the availability of electricity and light significantly improves living quality, or how technology-enhanced training equipment help children with special needs to learn. Students who work on

such projects usually do not need much guidance to see how their experiences in the projects are linked to the academic concepts. But because of the nature of these projects, they often have to struggle in working with unfamiliar equipment in challenging environments.

In some other projects, the impact on the community is more subtle. For example, it is not easy to see how running a one-week workshop on scratch for underprivileged children would have a significant impact on their computer literacy in the long run. Students working on these projects sometimes grapple with the meaning of what they are doing, even if they do not have much difficulty in delivering the service. In cases like these, we spend more time in discussing and analyzing the linkage between the project and the academic concepts.

#### 16.4 Impacts on Students and the Community

Very often when students are asked why they choose our subject, they name the learning experience as a primary factor. For many students who opt for offshore projects, it is their first exposure to a community that does not provide many of the amenities that they take for granted, and the learning experience impacts them in ways that they do not expect. We observe that many of our students start the course being somewhat passive, sometimes intimidated by the course material and the prospect of a challenging project. However, during the course of the project, many of them become proactive and enthusiastic, and surprise us with their creativity, ingenuity and insight. Several students have returned to continue to help out with other projects in the following years, and some even form their own community service group and return to Cambodia year after year to work with the same village. This is the change that we wish to see in our students – that SL is not limited to just a three-credit subject, but a transformative learning experience.

Our projects have also had impacts on the community in many ways. Certainly there are direct impacts. For example, many families in Rwanda and Cambodia now have electricity supply where they had none before, and there are two villages for which we have built a computer centre with Internet facilities – the equipment we have installed is now being used extensively. There are also some unexpected effects. Many NGOs have expanded their capacity through collaboration with us. In Rwanda, the NGO that we have worked with has expanded their services to cover young people and technology. In Cambodia, our partner NGO operates a productive homestay programme in a farming village which provides accommodation in farmers' houses with basic but sanitary conditions, and authentic local cuisine. It was initially set up to provide accommodation for us, but since then it has grown into a thriving grassroots business. Even some of the young people who have worked with us have branched out to start their own NGO!

#### 16.5 Our Reflection

Each of our projects has gone through much scrutiny and development before we decide to take it on. When a project is completed, there is a long period of reflection and stocktaking. Some of our projects, especially those in the early days of working in a particular country or with a particular partner, have turned out to be less successful than we had wished. However, with continued improvement and refinement, it appears that most of our projects now do achieve our objectives of bringing a good learning experience to our students, as well as achieving significant community impact. The long-term nature of many of our projects is a testament to the mutual benefit to both parties.

We have started leading community service projects for students since 2006. We have learned a lot and gained much experience during these 10 years. We believe that our principle of maintaining a long-term collaborative relationship with the same community or even with the same partner is the key to achieving our objective. The beginning of any partnership is always a time for mutual "water testing" as both parties try to work out each other's capacities, intentions and priorities. It is therefore important to give both parties a chance to sort out misunderstandings and come to a mutual agreement that works well for all.

We believe that our students, whether they are from Computing, Engineering, or other disciplines, have learned important concepts and skills through this course. Technology is so pervasive nowadays that it is impossible to imagine a world without it, and our students have mostly grown up seeing it as part of their lives that is taken for granted. This makes it even more important that they understand the true impact of technology, or the lack thereof. The SL projects provide the appropriate learning experience to achieve this goal.

Teaching this subject is mightily challenging. Due to the large class size, the complexity and the depth of many of the projects, the wide range of locales, the multiple project teams, and the continuous quest for innovative solutions, the effort required is much more than that usually involved in teaching a regular subject. Yet teaching this subject reaps rewards difficult to achieve in other academic subjects. We see the impact of what we do immediately, on the community as well as the students. We literally watch the students change and grow up in front of your eyes. It is a privilege that is worth all the toil and trouble we go through.

#### Appendix 16.1

- 1. Concept and practices of service-learning (e-Learning Module on SL common to all SL subjects)
  - Principles, concepts and myths of service-learning.
  - Benefits of service-learning to students, the university and the community.
  - Ethical issues in service-learning.
  - Basic concepts and theories of social problems, developments and justice.
  - Social responsibilities of intellectuals and professionals as global citizens.
  - Proper attitudes and behaviours in service delivery.
  - Developing a service project proposal/plan.
  - Effective teamwork and problem-solving skills in service-learning projects.
  - Reflection as a tool for learning.
- 2. Discipline-specific concepts, issues and skills
  - The digital divide. Who are the ones that have, and the ones that do not? Hardware, software, infrastructure, manpower, ... Possible local and global solutions to the digital divide. Significant efforts in solving the issue such as the One Laptop Per Child (OLPC), the open source software movement, Creative Commons, etc.
  - Impact of social factors, culture, religion and ethnicity on the community. Issues of cultural understanding and misunderstanding. The nature of prejudice, stereotyping, and discrimination, including more modern, subtle, and perhaps unintentional forms.
  - Impact of technology on societal needs and perceptions. Sustainable technology and impact of the lack of access to technology on society: economical, cultural, ethnic, and political. Possible solutions to societal needs through the use of technology.
  - Potential ethical, environmental and societal impacts of technology. Proper use of technology. When does technology create harm? What are the ethical and moral concerns raised by technology?

3. Project-specific concepts, issues and skills

- Specific historical, cultural, and political background for offshore sites (e.g. sites on the Mainland, Cambodia, Rwanda), or target local communities (e.g. refugees, new immigrants from the Mainland, and ethnic minorities from South Asia).
- Health, safety and other issues relevant to the service projects (e.g., infectious diseases, HIV, travelling in unfamiliar locations).
- Specific technical topics relevant to the service projects.
- Moral and ethical concerns specific to the service project and beneficiaries (e.g., corruption in society, education systems).
- Project planning.

# Part Three

## Supporting Students in Service-Learning

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# Preparing and Supporting Students for Service-Learning at PolyU

Service-learning (SL) is a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development. Reflection and reciprocity are key concepts of service-learning (Jacoby, 1996). For it to be effective, SL should focus equally on the service being provided and the learning that is occurring, and benefit both the service recipients and the students (Furco, 1996).

However, as an experiential pedagogy, SL is rather demanding or even threatening for many students as it is new to them. It requires them to link the academic content of the course to their service, apply what they learn in class to deal with real-life problems and address genuine human and community needs, and learn from their service experience through critical reflection. They are often expected to work collaboratively in small teams, and engage in more independent learning. Furthermore, their performance in planning and delivering the service affects not only their own learning and grades, but also the well-being of the people or community they serve.

#### 17.1 The Importance of Preparing Students for SL

However, the SL literature and anecdotal experience among instructors have revealed that students face a number of struggles in SL courses (Averett and Arnd-Caddigan, 2014), many of which are due to students' inadequate preparation for the SL experience and project. A brief review of the SL literature (Averett and Arnd-Caddigan, 2014; CSUCI, n.d.; CSUEB, n.d.; Howard, 1993; Morris, n.d.) suggests that students need to be equipped with the following knowledge, skills and attitude in order to provide a high-quality service that meets the genuine needs of the community and maximize their learning from the experience:

- a. An understanding of what SL is and why this particular pedagogy is being adopted for the course.
- b. A recognition of the academic as well as the civic and other learning outcomes of the course, and their connection to the service activities.
- c. An awareness of their roles and responsibilities in, and how they should conduct themselves during service delivery.
- d. A deeper understanding of the people or community that they plan to serve, and the problems they are facing.
- e. The knowledge and skills required for planning and delivering a high-quality SL project.
- f. An understanding of the risks associated with their SL project and safety precautions to take to ensure their own as well as the service recipients' safety.
- g. Skills for gleaning the learning from the service context through critical reflection.
- h. An understanding of how their performance in the service and the subject will be assessed.

### 17.2 SL Support for Students

PolyU, like many other universities, recognizes the need to assist students in providing service to address community needs and maximize their learning, and endeavours to provide a wide range of support for students to thrive in their SL experience. The major SL resources and support we provide to equip students with the essential knowledge, skills and attitudes for SL as listed above are summarized in Table 17.1, and explained briefly in the sections below.

Table 17.1 SL support for students at PolyU

SL resources and support for students		Kr		ge, ski equire		attitud L	les	
	а	b	с	d	е	f	g	h
Service-learning Handbook	~	~						~
e-Learning module on SL for students	~	~	~		~		~	~
Project-specific workshops and briefings				~	~	~	~	
Debriefing sessions							~	
Assessment rubric on common intended learning outcomes (ILOs) of SL subjects at PolyU								~
e-Learning module on health care and vaccination for non-local SL projects						~		

#### 17.2.1 Service-Learning Handbook

The Service-Learning Handbook has been developed by the Office of Service-Learning (OSL) and aims to give students a comprehensive understanding of SL, such as the requisite responsibilities, attitudes and ethics, the practical skills required in service delivery, and the resources and support available at PolyU to facilitate their further service engagement. The Handbook consists of the following five sections:

- 1. What is Service-Learning at PolyU?
- 2. Responsibilities, Attitudes and Ethics in Service-Learning
- 3. Practical Skills in Service Planning and Implementation
- 4. Supporting students in Service-Learning
- 5. About the Office of Service-Learning

The first three sections of the Handbook introduce students to the key concept and practices of SL throughout the whole process in sequence.

Section 1 explains to students what SL, the relationship between SL and the desired graduate attributes of PolyU, as well as the requirements and intended learning outcomes of SL.

Section 2 spells out the roles and responsibilities of students in the overall SL experience. A code of conduct is included to ensure that students understand that it is important during SL activities they behave in an ethical, responsible and professional manner, and the consequences of misbehaviours. There are also tips to help students develop a positive attitude towards SL, as a correct attitude will increase the chance of success of their study and the service project.

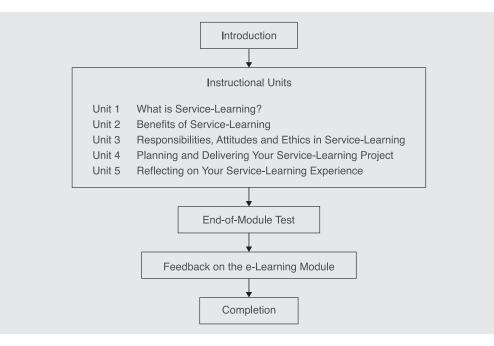
Section 3 emphasizes the practical project-specific knowledge and skills useful for service planning and implementation. Such skills include working with the collaborating agency and service users, and designing an SL project and the reflection process.

The last two sections of the Handbook detail the financial subsidy and scholarship schemes available to students, and the support offered by OSL.

#### 17.2.2 e-Learning module on SL for students

To help students understand the concept and practices of SL, and to equip them with the knowledge, skills and attitudes for planning and conducting effective SL projects and learn from the experience, an e-Learning module on SL for students has been developed by OSL, and made available to SL subject teachers since the 2012/13 academic year for possible inclusion as part of the teaching and learning activities of their respective subjects.

The latest version of the module, "The Concept and Practices of Service-Learning", consists of the following components:



To successfully complete the online module, students are required to go through the components in the following sequence: (1) read the Introduction, (2) complete and submit the pre-experience survey, (3) study every page of the five instructional units and attempt all the learning activities embedded in the units, (4) attempt the End-of-Module Test (a maximum of three attempts) and obtain at least 9 out of 15 marks, and (5) provide their feedback on the e-Learning module.

We expect that, upon completing this module, students will be able to:

- 1. Explain what SL is, and distinguish it from other forms of experiential learning or community service programmes.
- 2. Recognize the benefits of SL to the students, the community and the university.
- 3. Be more aware of the appropriate attitudes towards, and the responsibilities and other ethical considerations in SL, and act accordingly.
- 4. Develop a good proposal or plan for their SL project, and implement the project effectively, demonstrating effective teamwork and problem-solving skills.
- 5. Apply Gibb's Reflective Cycle to engage in a deep, critical reflection on their SL experience.

Feedback from students shows that the e-Learning module has been effective in enabling them to achieve the abovementioned learning outcomes and preparing them to gain the most from the SL subject and experience.

#### 17.2.3 Project-specific workshops and briefings

SL subject teachers, with the support of OSL and/or community partners, organize relevant practical project-specific workshops, seminars and briefings to prepare students for their service delivery and to help them maximize their learning from the SL experience.

Below is an example to show the kind of workshops and briefings specifically organized to prepare students for their SL project in Cambodia.

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

In 2016, six project-specific workshops were organized for students to equip them with the following technical knowledge and hands-on skills:

1. Usage of power and mechanical tools

- 2. Basic electronic circuitry
- 3. Laser cutting skill, soldering skills and assembly of light-emitting diodes (LEDs)
- 4. Safety precautions on conducting engineering projects in rural area, such as the
- risk assessments5. Installation of solar system
- 6. Introduction of raspberry PI, a single-board computer that was used as a server hosting e-Learning resources such as electronic books

#### Briefings:

Two project-specific briefings were delivered by the Cambodian community partners, namely "Human Resources Development Institute (HRDI)" and "Young People Do", respectively. While the briefing of HRDI focused on introducing students to the history and culture (such as their customs and taboos) of Cambodia, "Young People Do" provided students with a deeper understanding of the problems and needs of the local villagers and the community they were to serve, for example, their lack of affordable electricity supply and learning resources.

#### 17.2.4 Debriefing sessions

Critical reflection is an essential component of SL which turns students' experience into meaningful learning. Many SL teachers at PolyU have included debriefing sessions during and/or after the service period to provide students with opportunities and guidance for their critical reflection on their performance, especially on the issues and difficulties they have encountered, the strategies undertaken to solve or deal with those difficulties, their own learning and development, and ways to improve their performance in possible future projects. The activities may take the forms of sharing/discussion sessions or presentations during and after the service delivery.

## 17.2.5 Assessment rubrics on common intended learning outcomes of SL subjects

SL subjects normally do not require examinations; instead, students' performance will be graded by continuous assessment, which is based on students' learning rather than the quality of their service. In addition to the objectives and outcomes specific to a particular subject, all SL subjects at PolyU must have the following four common intended learning outcomes (ILOs) that students are expected to attain from the course:

- 1. Apply the knowledge and skills they have acquired to deal with complex issues in the service setting.
- 2. Reflect on their roles and responsibilities, both as a professional in their chosen discipline and as a responsible citizen.
- 3. Demonstrate empathy for people in need and a strong sense of civic responsibility.
- 4. Demonstrate understanding of the linkage between the academic content of the subject and the needs of society.

A set of rubrics (see Appendix 17.1) with regard to the assessment criteria and standards for the above four ILOs of SL subjects has been developed by the

University's Sub-committee on Service-Learning to keep students on task, interested and motivated, and to enable them to understand how their performance will be assessed in the SL subject. This set of rubrics is included in both the Service-Learning Handbook and the e-Learning module on SL for students. On completing an SL subject, students are required to demonstrate how well they have achieved the four common ILOs.

# 17.2.6 e-Learning module on health care and vaccination for non-local SL projects

Some of our SL projects are conducted outside Hong Kong and in areas with significant health risks. OSL has tailor-made an e-Learning module to alert students who will participate in non-local SL projects to health care and vaccination requirements for their overseas destinations. The module includes an online health talk which provides health and safety information and vaccination tips, as well as safety practices such as measures of avoiding infectious diseases, crimes and traffic accidents. Students can also order travel health kits and make an appointment for vaccination on campus through the online facility embedded in the module.

# 17.3 Encouraging and Supporting Students' Continual Engagement in SL

Our experience shows that SL has a transformative learning impact on students and enhances their sense of civic responsibility (see Chapter 18 for details). However, no matter how strong these initial impacts are, they may not sustain over time unless students are given the opportunity to continually engage in SL activities after their first exposure. To develop students into responsible global citizens with a heart to serve, we would like our students to see SL not just as a one-off curricular requirement, but a lifetime commitment to helping other people in need.

With an aim to cultivate a service culture among students at PolyU, we provide a number of opportunities to encourage further service engagement among our students. With generous donations from the community, we have established a number of scholarship schemes, for example, the Service-Learning Scholarship Scheme, Dr. Y. K. Ching Memorial Scholarship and Lee Hysan Scholarship for Service-Learning Exchange, to support students to continue their involvement in community service, and act as student leaders to support the development of SL at PolyU. We also provide mentoring sessions and assistance to help SL scholars at PolyU to engage in and support SL-related activities.

We have also set up a Service-Learning Student Network to encourage and support students to continue participating in meaningful local and overseas projects outside of the SL subjects. Through this Network, we provide advice and funding to help students who are interested in starting their own service projects. In addition, we have provided guidance and support to student self-initiated service teams to engage in service projects in developing countries. For example, in 2015, we provided help and support for the student team "Tech4D (Technology for Development)" to set up a series of facilities, such as a community learning centre, solar panels and a water collection system, to improve the living conditions of a rural area in Cambodia. A dedicated website (http://www.osl.polyu.edu.hk/club/) has also been established to promote and disseminate information about students' self-initiated projects, and it has helped pool together more students with a heart to serve through this Network.

In summary, we endeavour to prepare and support students for their SL experience so as to bring about real benefits to the service recipients and the community, and to help them maximize their learning simultaneously.

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	Excellent/outstanding (A+/A)		Good (B+/B)	Satisfactory (C+/C)		Barely satisfactory (D+/D)		Inadequate (F)
Th€	The student was able to:	The stu	The student was able to:	The student was able to:	The s	The student was able to:	The	The student <u>failed</u> to:
	1. Application of knowledge and skills to deal with complex issues in the service setting	to deal v	vith complex issues in the s	ervice setting				
•	Connect and extend the knowledge and skills learned in class to plan and	• Eff	Effectively plan and implement the service with	<ul> <li>Plan and implement the service with largely</li> </ul>	•	Contribute to the project with minimal application of	•	Apply the knowledge or skills learned in class
	implement the service	CO	correct and appropriate	correct and appropriate	×	knowledge and skills		to plan or deliver the
•	Research into and make use of	ap	application of knowledge	application of		earned in class; or the		service
	information from other resources	an	and skills learned in class	knowledge and skills	~	knowledge and skills		
	beyond the subject	• C	Create workable methods	learned in class		applied were mostly		
•	Create innovative methods or solutions	. or			_	inappropriate or incorrect		
	to deal with issues and problems in the	ISS	issues and problems in the service-setting					
	reflection of their roles	nd respor	and responsibilities as a professional a	as a professional and a responsible citizen				
•	Show detailed, in-depth and insightful	• Sh	Show detailed self-	<ul> <li>Show adequate self-</li> </ul>	•	Show limited self-	•	Show any self-
	self-reflections after the service,	re	reflections after the service,	reflections after the	_	reflections after the service,		reflections after the
	providing strong evidence of growth	br	providing evidence of	service, providing some	~	providing limited evidence		service, providing
	(e.g. changes of attitudes), deep	gr	growth (e.g. changes of	evidence of growth (e.g.	5	of growth (e.g. changes of		little/ no evidence of
	learning (e.g. insights), and mastery of	ati	attitudes), deep learning	changes of attitudes),	10	attitudes), learning (e.g.		growth (e.g. changes
	skills	(e.	(e.g. insights), and mastery	learning (e.g. insights),		insights), and mastery of		of attitudes), learning
•	Show a very strong sense of	of	of skills	and mastery of skills	S	skills		(e.g. insights), and
	responsibility to the community, and	• Sh	Show a strong sense of	<ul> <li>Show awareness of his</li> </ul>	•	Demonstrate limited		mastery of skills
	have concrete plans to continue his	pe	personal responsibility to	personal responsibility	10	awareness of personal	•	Demonstrate his
	contributions to the community	th	the community	to the community	-	responsibility to the		awareness of personal
	through actions	0°	Connect the service and his	<ul> <li>Articulate the</li> </ul>	5	community		responsibility to the
•	Connect the service and his personal/	pe	personal/ professional life,	connection between	•	Articulate a superficial		community
	professional life, and articulate how he	an	and articulate how he could	the service and his/ her	5	connection between the	•	Connect the service
	could contribute more as a professional	00	contribute more as a	personal/ professional	S	service and his personal/		and his personal/
	and as a responsible citizen in the	pr	professional and as a	life	<u>×</u>	professional life		professional life
	future	fut	responsible citizen in the future					
	<ol> <li>Students' empathy for people in need</li> </ol>	ed				-		
٠	Demonstrate an in-depth awareness of	• De	Demonstrate a high	Demonstrate an	•	Demonstrate little	•	Demonstrate any
	the underlying needs and feelings of	av	awareness of the needs	awareness of the needs		awareness of the service		awareness or
	זרו אולר מזרו ז, מוומ מממו כזז נווכווו	2						

#### Appendix 17.1

Assessment rubrics for the common intended learning outcomes (ILOs) of SL at PolyU

	responsively and accurately		users, and address them		users		instructions/ guidance of		feelings and needs of
•	<ul> <li>Take the perspectives of the service</li> </ul>		responsively and accurately	•	Make attempt to take		the others (instructor,		service users
	users in understanding their needs and	•	Take the perspectives of		the perspectives of the		team members etc.)	•	Take the perspectives
	situations		the service users in		e service users in	•	Make little attempt to take		of the service users in
•	<ul> <li>Respond to the needs of service users</li> </ul>		understanding their needs		understanding their		the perspectives of the		understanding their
	by showing intense care and concern		and situations		needs and situations	.,	service users in		needs and situations
•	<ul> <li>Maintain positive but purposeful</li> </ul>	•	Respond to the needs of	•	Acknowledge the	-	understanding their needs	•	Communicate
	relationships with service users		service users by showing		factual content of the		and situations		effectively with and
•	<ul> <li>Articulate the situations of service users</li> </ul>		care and concern		<ul> <li>messages of the service</li> </ul>	•	Communicate with the		respond to the needs
	and mobilize different resources to help	•	Maintain positive and		users	- '	service users at a		of the service users
			purposeful relationships	•	Respond to the needs		superficial level, may		(e.g. students'
			with service users		of service users by	- /	sometimes neglect the		responses are
					showing some care		feelings and factual aspects		irrelevant, abrasive,
						-	of the messages of service		thus hindering
							users		communication)
								•	Make any attempt to
								-	care for the service
									users
		-	-			.			
	<ol><li>Students' understanding of the linkage between service-learning and the academic content of the subject</li></ol>	age b	etween service-learning and the	hea	cademic content of the subject	н Н			
•	<ul> <li>Articulate rich, in-depth, insightful</li> </ul>	•	Articulate in-depth	•	Adequately articulate	•	Articulate few	•	Articulate any
	observations that connect the		observations that connect		observations that		observations that connect	-	observations that
	conceptual knowledge learned in class		the conceptual knowledge		connect the conceptual		the conceptual knowledge	-	connect the
	to experiences from the service process		learned in class to		knowledge learned in		learned in class to	-	conceptual knowledge
•	<ul> <li>Demonstrate an in-depth awareness of</li> </ul>		experiences from the		class to experiences		experiences from the		learned in class to
	the underlying issues or needs of the		service process		from the service		service process	)	experiences from the
	service community and link them to the	•	Demonstrate a high		process	•	Demonstrate little	- 1	service process
	conceptual knowledge learned in class		awareness of the	•	Demonstrate an		awareness of the	•	Demonstrate any
•	<ul> <li>Extend his/ her observations and</li> </ul>		underlying issues or needs		awareness of the		underlying issues or needs		awareness of the
	experiences through researching into		of the service community		underlying issues or		of the service community	_	underlying issues or
	information from outside the academic		and link them to the		needs of the service		and link them to the	-	needs of the service
	subject and/or service experience		conceptual knowledge		community and link		conceptual knowledge	-	community and link
			learned in class		them to the conceptual		learned in class		them to the
					knowledge learned in			-	conceptual knowledge
					class				learned in class

# Part Four

## Preliminary Results Dr Stephen C.F. Chan, Head, Office of Service-Learning

Dr Stephen C.F. Chan, Head, Office of Service-Learning Dr Grace Ngai, Associate Professor, Department of Computing & Associate Head, Office of Service-Learning Dr K.P. Kwan, Professorial Project Fellow, Office of Service-Learning

# Evidence of Impacts of Service-Learning at PolyU

There seems to be very little dispute that service-learning (SL) is a powerful experiential pedagogy that impacts students' learning and development (Andersen, 1998; Conrad & Hedin, 1991; Furco, 2001). However, its benefits to students and the community are not automatic. While a large number of studies reported positive impacts of SL on students (Astin, Vogelgesang, Ikeda & Yee, 2000; Celio, Durlak & Dymnicki, 2011; Lundy, 2007; Weber & Glyptis, 2000; Warren, 2012; Yorio & Ye 2012), others showed no or even negative effect (Conrad & Hedin, 1991; Billig, Root & Jesse, 2005; Delano-Oriaran, Penick-Parks & Fondrie, 2015). Roldan, Strage & David (2004, p. 50) thus concluded that "not all service-learning is good, or good for all participants". Similarly, Melchior & Bailis (2002) pointed out that the impact of SL on students is not universal but rather, highly dependent on the programme design and implementation, as well as students' service experience and intensity. In other words, the benefits of SL cannot be taken for granted. As Billig (2007, p. 18) suggested, "service-learning can have strong academic, civic, and character building outcomes, but these outcomes are not automatic. Rather, it is the way in which service-learning is implemented that makes a difference [emphasis in the original]."

It should also be noted that SL differs from other approaches to experiential learning in that it intends to benefit both the students and the community, and puts equal emphasis on both the learning of the students and the service to the community (Furco, 1996). Reciprocity between the university and the community is essential for SL programmes to be effective and sustainable (Jacoby, 1996). It is therefore imperative for universities to affirm that their SL programmes benefit not only the students and the university, but also the community that they purport to serve.

### 18.1 Evaluative Efforts in SL at PolyU

Cognizant of the issues mentioned above, we have conducted a number of studies to evaluate the impacts of SL on students' learning and development and on the community. The findings of these studies will help us monitor and continually improve the implementation and outcomes of SL at PolyU. The studies include, among others:

- An evaluation of students' experience and outcomes of SL at PolyU.
- A study of the impact of the mandatory SL requirement on students' learning and development, particularly for the initially less-inclined students.
- A study of the community partner feedback on SL projects conducted by PolyU students.

The research objectives, methods, sampling, results, conclusions and recommendations of the studies are explained in detail in the project manuscripts available for PolyU staff and students at <a href="http://sl.polyu.edu.hk/06\_10\_staff\_publication.html">http://sl.polyu.edu.hk/06\_10\_staff\_publication.html</a>.

In the following sections, we will highlight the major findings of these three studies and explain what we have learned from them.

#### 18.2 Students' Experience of SL at PolyU

To monitor students' experience of their SL subject and project, we asked students to rate, in a post-experience questionnaire, their experiences on 16 items relating to the perceived value and benefits of their SL project, effort, help and support, interaction, challenge, autonomy, reflection, as well as their overall learning experience. The latest results for the 2014/15 academic year are shown in Table 18.1.

Students generally had very positive views about their SL experience. Most of the respondents agreed that the overall experience of studying the SL subject was highly useful and rewarding, with 86.9% of them giving a rating of 5 or above for this item (mean = 5.64). Only 3.2% of the students disagreed to the statement.

Feedback from students on different aspects of their learning experience of the subject was also quite positive. The mean ratings of the items ranged from 5.40 to 5.71, with 82.6% to 89.4% of students giving a rating of 5 or above. The percentages of students giving negative feedback (i.e. a rating of 3 or below) on the items were quite low, ranging from 1.4% to 4.5%. The following five items received relatively higher ratings, in terms of the percentage of respondents giving a rating of 5 or above:

Stu	idents' learning experience of the subject	Mean rating	Respondents giving a rating of 5 or above
1.	I was required to engage regularly in reflective activities (e.g. writing reflective journals or project logs, debriefing sessions, project reports) during and after the SL project.	5.68	89.4%
2.	I put a lot of effort into planning, preparing and delivering the service.	5.71	88.8%
3.	I felt that my service was appreciated by the collaborative agency/service recipients.	5.55	87.5%
4.	I developed a good personal relationship with my teammates.	5.68	87.4%
5.	My teammates in the SL project were generally motivated and supportive.	5.69	87.3%

The following three items, on the other hand, received relatively lower ratings, in terms of the percentage of respondents giving a rating of 5 or above (but still favourable):

Stı	udents' learning experience of the subject	Mean rating	Respondents giving a rating of 5 or above
1.	My instructors and TAs prepared me appropriately for performing the service.	5.45	82.6%
2.	The reflective activities of the subject were well structured with clear instructions and guidelines.	5.40	83.0%
3.	In my SL project, I carried out tasks that were mainly designed by me/my team rather than following instructions	5.44	83.2%

The results suggest that most students found their SL experience useful and rewarding, and were generally satisfied with their learning experience of the SL subjects and projects. Most of them also indicated in their written comments that while they would welcome more structured instruction, guidance and support from their instructors and TAs, particularly in the preparation for their service and in their reflection, they desired a higher degree of autonomy in designing the SL project in order to learn better from the experience.

				Percenta	ge distribut	ion (%)
ltems		Mean	SD	1-3 disagree	4 neutral	5-7 agree
Value	& benefit					
2-3	I believe that the service I performed in the SL project has benefited the people I served.	5.53	1.020	2.5%	11.4%	86.1%
2-12	I felt that my service was appreciated by the collaborating agency/service recipients.	5.55	0.975	2.0%	10.4%	87.5%
Effort						
2-13	I put a lot of effort into planning, preparing and delivering the service.	5.71	0.982	1.4%	9.9%	88.8%
Help 8	& support					
2-4	My instructors and TAs prepared me appropriately for performing the service.	5.45	1.143	4.5%	12.9%	82.6%
2-6	I could feel the enthusiasm and passion of my instructors and TAs in delivering the subject and the service.	5.58	1.115	3.7%	10.7%	85.6%
2-8	Help and support was usually available from the instructors/TAs/collaborative agency when I needed it.	5.55	1.045	3.0%	10.6%	86.4%
2-17	I benefited a lot from the interaction I had with the instructors, TAs and other students in class.	5.49	1.042	3.1%	11.7%	85.2%
Intera						
2-5	My team-mates in the SL project were generally motivated and supportive.	5.69	1.096	3.1%	9.6%	87.3%
2-7	There were a lot of opportunities for me to meet and interact with the people I served.	5.55	1.061	3.1%	11.6%	85.3%
2-11	I developed a good personal relationship with my teammates.	5.68	1.055	2.4%	10.2%	87.4%
Challe						
2-9	The SL project provided challenging and meaningful tasks for me to accomplish.	5.57	1.017	2.4%	10.5%	87.1%
2-18	The SL project challenged me to try things that I had never done before.	5.61	1.089	2.8%	11.9%	85.3%
Auton						
2-10	In my SL project, I carried out tasks that were mainly designed by me/my team rather than following instructions.	5.44	1.064	3.8%	13.0%	83.2%
Reflec						
2-14	I was required to engage regularly in reflective activities (e.g. writing reflective journals or project logs, debriefing sessions, project reports) during and after the SL project.	5.68	0.964	1.5%	9.1%	89.4%
2-15	The reflective activities of the subject were well structured with clear instructions and guidelines.	5.40	1.053	3.6%	13.4%	83.0%
Overa	Il learning experience					
2-19	Overall, I found the experience of studying this SL subject highly useful and rewarding.	5.64	1.091	3.2%	9.9%	86.9%

Table 18.1	Students' ratings on attainment of learning outcomes as a result of attending the SL subject, 2014/15

*N* = 2,210; Rating scale: 1=strongly disagree; 4=neutral; 7=strongly agree

Row percentage totals may not add up to 100% because of rounding of decimal values.

#### 18.3 Impacts of SL on Student Learning and Development

To investigate the impacts of SL on students' learning and development, we first examined if there were any changes in students' self-reported attainment of the four common intended learning outcomes (ILOs) of SL at PolyU before and after studying the subject. Table 18.2 shows the results for the 2014/15 academic year.

There were statistically significant increases in students' attainment of three of the common ILOs, namely, application of knowledge and skills (mean difference = 0.07, p-value = 0.002), understanding of the linkage between SL and academic learning (mean difference = 0.05, p-value = 0.026), and self-reflection on their roles and

responsibilities (mean difference = 0.11, p-value < 0.001). The magnitudes of the observed changes, however, are quite small.

Although there was an observed increase in the ILO "demonstration of empathy" (mean difference = 0.04), the increase was not statistically significant at 0.05 level.

Intellectual development **Civic development** Learning gain Understanding of the Self-reflection Application of Demonstration from SL linkage between SL on roles and knowledge and skills of empathy and academic learning responsibilities Pre mean score 5.28 5.29 5.00 5.23 5.35 5.34 5.11 5.27 Post mean score Mean difference 0.07 0.05 0.11 0.04 <0.001\*\* 0.002\*\* 0.141 (NS) 0.026\* p-value

Table 18.2 Results of independent t-test comparing students' attainment of the four common ILOs of SL at PolyU, 2014/15

\* Significant at the p=.05 level; \*\* Significant at the p=.01 level; NS – Not significant

We further examined students' learning outcomes from SL by asking them to rate the amount of learning they had gained with respect to 13 potential outcomes of SL on a 7-point scale (1=Very little; 4=A fair amount; 7=Very much). The results for the 2014/15 academic year are summarized in Table 18.3.

Students generally had a very positive view regarding their overall learning gain, with 97.5% of the respondents indicating that they had learnt "a fair amount" or more upon completion of the SL subject (mean = 5.63). Only 2.5% of the respondents gave a rating of 3 or below, that is, little or very little amount of learning.

Students' feedback on their attainment of individual learning outcomes was also very positive. The mean ratings of the items ranged from 5.29 to 5.64, with 94.0% to 97.9% of the respondents giving a rating of 4 (a fair amount) or above. The five most highly rated items, in terms of the percentage of respondents giving a rating of 5 (much) or above, were:

Stu	Idents' learning experience of the subject	Mean rating	Respondents giving a rating of 4 or above	Respondents giving a rating of 5 or above
1.	Communicating effectively with peers, collaborators, and service recipients.	5.64	97.9%	88.8%
2.	Better understanding of my own strengths and weaknesses.	5.57	97.6%	87.6%
3.	Working effectively in teams.	5.62	97.0%	87.1%
4.	Becoming a more responsible member of the community.	5.55	97.5%	87.1%
5.	Better understanding of the problems facing underprivileged members of the community.	5.51	96.8%	86.9%

On the other hand, the following three items received relatively lower (but still rather positive) ratings, in terms of the percentage of respondents giving a rating of 5 or above:

Stu	udents' learning experience of the subject	Mean rating	Respondents giving a rating of 4 or above	Respondents giving a rating of 5 or above
1.	Cross-cultural awareness and skills.	5.29	94.0%	79.3%
2.	Deeper understanding of the linkage between SL and the academic content of the subject.	5.35	95.1%	81.2%
3.	Becoming a more responsible global citizen.	5.44	96.2%	83.1%

Items		N	Mean	SD	Percer	ntage distribut	tion (%)
					1-3	4	5-7
					Little	A fair amount	Much
Intelle	ectual learning outcomes						
1-1	Deeper understanding of the linkage between service-learning and the academic content of the subject.	2202	5.35	1.117	4.9%	13.9%	81.2%
1-2	Applying/integrating knowledge to deal with complex issues.	2208	5.37	0.982	3.4%	12.1%	84.4%
1-3	Solving challenging real-life problems.	2209	5.43	1.026	3.7%	11.2%	85.1%
1-4	Thinking critically.	2210	5.46	0.998	2.9%	10.7%	86.5%
Social	learning outcomes						
1-5	Working effectively in teams.	2209	5.62	1.058	3.0%	9.9%	87.1%
1-6	Communicating effectively with peers, collaborators, and service recipients.	2209	5.64	0.990	2.1%	9.1%	88.8%
Civic l	earning outcomes						
1-7	Better understanding of the problems facing underprivileged members of the community.	2210	5.51	1.028	3.2%	9.9%	86.9%
1-8	Increased interest/commitment to serve people in need.	2210	5.49	1.063	3.4%	11.2%	85.4%
1-9	Becoming a more responsible member of your community.	2210	5.55	1.018	2.6%	10.4%	87.1%
1-10	Cross-cultural awareness and skills.	2210	5.29	1.141	6.0%	14.7%	79.3%
1-11	Becoming a more responsible global citizen.	2210	5.44	1.076	3.8%	13.1%	83.1%
Perso	nal learning outcome						
1-12	Better understanding of my own strengths and weaknesses.	2210	5.57	0.993	2.4%	10.0%	87.6%
Overa	Il learning outcome						
1-13	Overall learning gain.	2188	5.63	0.993	2.5%	8.8%	88.7%

Table 18.3 Students' ratings on attainment of learning outcomes as a result of attending the SL subject, 2014/15

Rating scale: 1=Very little; 4=A fair amount; 7=Very much

Row percentage totals may not add up to 100% because of rounding of decimal values.

#### 18.4 Impacts of Mandatory SL on the Less-inclined Students

One major objection to mandatory SL at the university level is the worry that the less-inclined-to-serve students may resent being compelled and consequently perform the service poorly, hence spoiling the experience of other students and causing harm not only to their own learning but also to the service recipients (Anderson, 1998).

To investigate this issue, we performed a series of univariate multiple regression analyses in order to examine the effect of students' reasons for taking the subject (mainly to fulfill the SL Requirement (MEET\_SLR)) on their intellectual (INTELL), social (SOCIAL), civic (CIVIC) and personal development (PERSONAL), and their subject GPA (S\_GPA), with students' learning experience of (LEARN\_EXP) and their interest in the SL subject/project (INT) as covariates. Results are portrayed in Table 18.4.

Dependent Variable	Independent Variables		ardized ficients		Model S	Summary	
		β	Sig	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	Sig
INTELL	INT	.115	<.001**				
(n=680)	LEARN_EXP	.659	<.001**	.530	.528	254.606	<.001**
	MEET_SLR	045	.093				
SOCIAL	INT	007	.836				
(n=680)	LEARN_EXP	.745	<.001**	.548	.546	273.276	<.001**
	MEET_SLR	009	.722				
CIVIC	INT	.095	.002**				
(n=680)	LEARN_EXP	.698	<.001**	.570	.568	298.493	<.001**
	MEET_SLR	032	.219				
PERSONAL	INT	.025	.490				
(n=680)	LEARN_EXP	.652	<.001**	.442	.440	178.753	<.001**
	MEET_SLR	013	.664				
S_GPA	INT	.032	.484				
(n=680)	LEARN_EXP	.234	<.001**	.076	.072	18.503	<.001**
	MEET_SLR	134	<.001**				

Table 18.4 Results of univariate multiple regression analyses

\*\* Significant at .01 level (two-tailed)

With regard to students' self-reported learning gains, the results show that the regression models are statistically significant (F values ranging from 178.753 to 298.493, p<.01) and explain a significant amount of the variance in students' self-reported gains, with R2 values ranging from .442 to .570. LEARN\_EXP has the strongest and statistically significant impact on all of the four learning gains, with  $\beta$  values ranging from .652 to .745, p<.01. INT is found to have a weaker but statistically significant impact on INTELL ( $\beta$  = .115, p<.01) and CIVIC ( $\beta$  = .095, p<.01), but not on SOCIAL and PERSONAL ( $\beta$  = -.007 and .025 respectively, p>.05). The impact of MEET\_SLR, however, is not statistically significant for any of the four self-reported learning gains at .05 level.

The regression model on students' subject GPA (S\_GPA) is also statistically significant (R2 =.076, F(3, 676) = 18.503, p<.01) but is only able to explain less than 8% of the variance. LEARN\_EXP is found to have the strongest impact on S\_GPA ( $\beta$  = .234, p<.01), but the absolute value of  $\beta$  was much smaller than those for the self-reported gains. MEET\_SLR has a weak negative albeit statistically significant impact on S\_GPA ( $\beta$  = .134, p<.01) whereas the impact of INT is not statistically significant at .05 level.

To determine if there were significant differences in students' learning and development from SL between those who had engaged in community service at university prior to enrolling on the subject and those who had not, we also conducted a series of univariate ANCOVA with students' self-reported learning (i.e. INTELL, SOCIAL, CIVIC, PERSONAL) and subject GPA (S\_GPA) as the dependent variables and students' previous engagement in community service at university (PRE\_ENGAGE) as the factor, with students' total learning experience (LEARN\_EXP) and interest in the SL project (INT) as the covariates. The results are summarized in Table 18.5.

It can be seen that after controlling for INT and LEARN\_EXP as co-variates, PRE\_ENGAGE has a small albeit statistically significant effect on CIVIC (F(4, 676) = 7.328, p<.01,  $\eta p2 = .011$ ) but not on the other three self-reported learning gains nor S\_GPA at .05 level. On the other hand, LEARN\_EXP are found to have a strong and statistically significant impact on all of the four self-reported learning gains (p<.01,  $\eta p2$  values ranging from .337 to .450), and a smaller but statistically significant impact on S\_GPA (p<.01,  $\eta p2 = .029$ ). Finally, INT has a statistically significant but small impact on INTELL (p<.01,  $\eta p2 = .022$ ) and CIVIC (p<.01,  $\eta p2 = .014$ ), but not on SOCIAL, PERSONAL, or S\_GPA.

Dependent Variable	Factors and Covariates	F	Sig	Partial Eta Square η <sub>p</sub> ²	
INTELL	INT	14.929	<.001**	.022	
(n=680)	LEARN_EXP	404.282	<.001**	.374	
	PRE_ENGAGE	.441	.507	.001	
SOCIAL	INT	.003	.959	.000	
(n=680)	LEARN_EXP	553.145	<.001**	.450	
	PRE_ENGAGE	1.971	.161	.003	
CIVIC	INT	9.701	.002**	.014	
(n=680)	LEARN_EXP	509.924	<.001**	.430	
	PRE_ENGAGE	7.328	.007**	.011	
PERSONAL	INT	.448	.504	.001	
(n=680)	LEARN_EXP	344.205	<.001**	.337	
	PRE_ENGAGE	2.054	.152	.003	
S_GPA	INT	1.851	.174	.003	
(n=680)	LEARN_EXP	19.841	<.001**	.029	
	PRE_ENGAGE	1.388	.239	.002	

Table 18.5 Results of univariate ANCOVA

\*\* Significant at .01 level (two-tailed)

#### 18.5 Benefits to the Community

To ascertain if the SL projects conducted by PolyU students had brought about real benefits to the community, we collected feedback from our community partners on what they perceived were major benefits that their organizations, clients or the community had gained from the service. Table 18.6 shows the combined results for Semesters 2 and 3 in the 2014/15 academic year and Semester 1 of the 2015/16.

Fifty-three of the 55 respondents (96.4%) selected at least one item with regard to the major benefits that the SL project had brought about to the organization, clients or the community. Twelve of the 53 respondents selected 1-2 items, 20 selected 3-4 items, 5 selected 5-6 items and 9 selected 7-8 items. Seven of the respondents selected all 9 items on the list. The remaining two community partners did not make any selection but provided a written comment instead. One of them indicated that the major benefit of the SL project was that it had created opportunities for their own students to interact with PolyU students and understand more about university life, and the other considered that the project had helped to enhance social harmony.

It can be seen from Table 18.6 that the most selected items were that the project had:

- Provided new activities or services that addressed a service gap at the organization/in the community. (75.5%)
- Improved the quality of existing activities or services. (64.2%)
- Increased resources (e.g. equipment, amenities or other material support) available to the organization or clients. (60.4%)
- Explored new strategies to address the needs of the clients or the community. (52.8%)

In contrast, relatively fewer respondents considered that the SL projects "helped identify the real and new needs of their clients or the community" (34.0%) and "improved knowledge and skills of their staff in daily operations" (37.7%).

Table 18.6	Community partners	' feedback on benefits	s of SL project to thei	ir organization, clients		
or the community						

Items		No. of community partners	Percentage
a.	Increased the number of clients you served.	21	39.6%
b.	Provided new activities or services that addressed a service gap at your organization/ in the community.	40	75.5%
с.	Improved the quality of existing activities or services.	34	64.2%
d.	Enhanced the capacity of your organization to better serve your clients.	23	43.4%
e.	Expanded the work of your organization into new areas.	24	45.3%
f.	Helped identify real and new needs of your clients or the community.	18	34.0%
g.	Explored new strategies to address the needs of your clients or the community.	28	52.8%
h.	Improved knowledge and skills of your staff in daily operations.	20	37.7%
i.	Increased resources (e.g. equipment, amenities or other material support) available to your organization or clients.	32	60.4%

N=53

The community partners were also asked to rate the overall effectiveness of the SL project in addressing important need(s) of their organization/clients/the community. The results were very encouraging, with 96.4% of them giving a rating of "satisfactory" or above, suggesting that the SL projects benefitted not only PolyU students but also the community at large.

Qualitative feedback from the community partners reveals that they welcomed more interaction and communication with the PolyU teaching team and students. They also recommended that the teaching team should better prepare their students for service, for example, by providing them with more information about the collaborating partners and clients, equipping them with the practical skills in interacting with clients, and enhancing their ability to apply subject-related knowledge and skills to solve problems in the service setting. In addition, they considered that extending the service period, scheduling the service at a mutually convenient time and period, and empowering the community to maintain the sustainability of the SL projects were needed to better meet the needs of their organization, clients or the community.

#### 18.6 Conclusion

The evidence we collected so far clearly suggests that students generally found their learning experience of the SL subjects they studied at PolyU useful and rewarding. They also reported significant gains in intellectual, social, personal and civic development. Of particular importance is that the less-inclined students learned almost as much as the more-inclined students did, thereby dispelling the worry that students who felt "coerced" to take part in SL would resent and therefore performed poorly in, and learn little from, the experience. Our results further reveal that it is the quality of students' SL experience, rather than their initial inclination to take part in

SL or previous engagement in community service at university, that is a more important determinant of student learning outcomes. In other words, making SL a mandatory requirement is not a problem as long as it is well-designed and implemented.

It is also pleasing to note that all of our community partners have identified some benefits of the SL projects to their organization, clients and the community, with 96.4% of them giving a rating of "satisfactory" or above in terms of the overall effectiveness of the SL project in addressing important need(s) of their organization/clients/the community. Taken together, the results suggest that the intended learning outcomes of SL at PolyU have been largely achieved. In addition, the SL experience has benefitted not only our students, but also the community.

To conclude, while the findings of the studies are quite encouraging, it is strongly suggested that further evaluation or research be conducted to investigate students' learning and development from their SL experience and the impact of SL on the community. These studies should adopt more rigorous research designs and methodologies and employ, where appropriate and feasible, more concrete and direct measures of student learning and development beyond self-reported data. More research is also needed to provide evidence-based principles and guidelines for teachers to design and implement effective SL programmes which can maximize students' service-learning experience and bring about benefits to the community.

#### 18.7 Recommendations

To further enhance students' experience and outcomes of SL at PolyU as well as benefitting the community, it is recommended that:

- 1. The University or relevant committees set up appropriate mechanism and processes to continually monitor students' experience and outcomes of SL and the impact of SL projects on the community, and make improvements to the subjects based on the evidence obtained.
- 2. Staff development activities continue to be organized for SL teachers to share and disseminate good practices in designing, planning and implementing SL subjects/projects.
- 3. SL teachers be encouraged and supported to better prepare students for their service, to engage them in structured reflection tasks with clear guidelines, and to give them more autonomy in designing and delivering the SL projects so as to enhance their learning experience.
- 4 SL teachers consider extending the service period, scheduling the service for the community partners at a mutually convenient time and period, and empowering the community to maintain the sustainability of SL projects to better meet the needs of the collaborating partners, clients or the community.

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In 2010, we seized the opportunity of the comprehensive reform in higher education in Hong Kong to incorporate service-learning (SL) in the four-year undergraduate curriculum at PolyU. Starting from 2012, all full-time undergraduate students are required to take a three-credit SL subject as a graduation requirement.

The past few years have seen the tremendous effort made in implementing the Service-Learning Requirement at The Hong Kong Polytechnic University. At the beginning, we had few faculty members who had any significant experience in developing, implementing and assessing credit-bearing SL subjects. Four years after the requirement came into effect, we now have a critical mass of faculty members engaging in teaching SL, and 28 academic departments offering at least one SL subject by 2016. SL is now in full implementation, with about 4,500 students taking an SL subject in the 2016/17 academic year.

Our students have been engaged in a wide variety of SL subjects. Some are challenged to help recovering mental patients rebuild their confidence by designing and modelling their own clothes. Some are inspecting the eyesight of children in Hong Kong, the Mainland, Cambodia, Vietnam, and beyond. Some are installing solar panels to generate electricity for villages and community centres. Some are setting up community learning centres with computers and access to the Internet. Some are helping slum dwellers to improve their diet for a healthier lifestyle. Some are using innovative projects to help students in under-served schools to build up their interest in science, technology, engineering and mathematics. Some are helping underprivileged youths to learn the skills to work in the tourism and hospitality industry. And a lot more. The subjects and projects included in this book are just a selection from the 60 subjects developed so far.

We have also conducted a number of studies to evaluate the impact of SL on students' learning and on the community. The results suggest that students did learn a lot from taking SL at PolyU and those who were initially less inclined to take part in SL learned nearly as much as the more inclined. Most of our students who were initially somewhat reluctant to participate in SL changed their views and attitudes after completing the subject, hence validating the University's decision in making SL a mandatory requirement for graduation. Our community partners also considered that the SL projects conducted by PolyU students had brought about significant benefits to their organization, clients or the community.

The evidence of positive impact of SL, to some certain extent, not only has dispelled doubts and worries about SL as an academic pedagogy, but also has served as an indication of staff's and students' effort in making SL effective. The evidence motivates the staff involved and reflects the University's endeavour to "develop all-round graduates with ... social and national responsibility, and ... with responsible citizens ..."(PolyU's Strategic Plan 2012/13 – 2017/18).

The fundamental concepts of SL as adopted at PolyU were developed after studying the state of the art as practised by leading universities in the world. The specific form as reported in this book has been designed to fit in the academic structure of

the University and the uniquely-mixed East-West culture of Hong Kong. For lack of a better term, we call it the "The Hong Kong Polytechnic University Model of Service-Learning". We are certainly not suggesting that it is the only model, or it can be used by other universities without alteration. The purpose of this publication is to inform our own community of what SL at our University is about, and how it has evolved to its present form. It also enables us to share with the wider academic community PolyU's experience in implementing SL as a form of social engagement, hoping for reciprocal exchange of ideas and experiences.

The graduation of the first cohort of undergraduates who have experienced SL as a requirement is a major milestone of our work in the area. In the longer run, we need to be attentive to the challenges and difficulties we have encountered, particularly to SL teachers' workload and subjects' sustainability, and we still need to work hard to cultivate students into more socially responsible citizens with a heart to serve the community. We aim to embed SL as a core value of PolyU education, with more sustainable student-initiated service projects, SL student and staff exchanges, internships, collaborative teaching, research and other service-related associations.

Beyond this first milestone, we are making some progress in developing a social engagement culture at PolyU. We have created an SL Student Network, composed of Student SL Clubs, to provide better support to student-initiated projects in Hong Kong and overseas. With donations from the community, we have set up an SL student exchange programme to enable students to further develop in SL. There is more collaboration among staff at PolyU as well as with other universities in teaching SL. A summer school will be run in Cambodia combining a leadership subject with an SL subject, for our own students as well as students from overseas universities. Staff are also organizing their own service projects.

In addition to teaching SL, our academic staff are linking service to serious research in their discipline as well as researching on the pedagogy of SL. For example, Computing and Optometry researchers are collaborating in developing eye examination applications for smartphones to facilitate services in the field. Nursing researchers are studying the impact of services on public health issues. Others are addressing disaster relief and other pertinent social issues. The University has also set up a network of universities across continents which are active in university social responsibility. Each of these is a small step in itself but together we are moving forward towards building up a social engagement culture at PolyU.

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### **Epilogue**

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Higher education around the globe has experienced many challenges in the last few years. The core question is what students would gain in the course of the education that they receive. In PolyU, besides professional-related content, the development of sense of social responsibility is one institutional learning outcome for our students. Students will have the opportunity to gain this experience their four-year undergraduate studies. Service-learning has become the vehicle for achieving this institutional learning outcome.

In the past six years, service-learning has become very vibrant in PolyU as well as in other universities in Hong Kong. Service-learning subjects are delivered in different forms and teachers employ different pedagogies to maximize our students' gain in their learning. The feedbacks on the service-learning experience has been overwhelming from students, service organizers, service recipients, and teachers. The students are enthusiastic about translating what they learnt in class to meet the needs of the individuals who are to receive the service. With the support of the teachers, the students are able to sharpen the partnership relationships with the service organizers. This is deemed critical to the success of the service-learning activity. Among all, the staff of Office of Service-Learning of PolyU has played a pivotal role in fostering the tripartite partnership among the student, service organizer and service recipients, and driving successful implementation of the learning activity. Evaluative studies have been conducted and the results show that service-learning is valuable to foster sense of social responsibility among the students. The students are satisfied with the learning outcomes and the activities are useful to the needed ones. It is our wish to share the experience gained by PolyU in these years on service-learning to those who are interested in developing learning program among their students or within their institutions.

I like to take this opportunity to thank all the students, teachers and staff of PolyU's Office of Service-Learning for their dedication to and aspiration of pioneering service-learning in higher education in Hong Kong. We are proud of the achievements that they have made. We are confident that service-learning will reach a new height as more students, teachers and institutions participate in this great venture.

