Blending Community Service and Teaching to Open Vision Care and Eye Health Awareness to University Students

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Abstract

A vision care-based community service subject is offered to general university students for fulfillment of a service-learning compulsory credit requirement. Here, a professional health subject is taught in a way that caters to generalist learners. Students gain basic skills they can apply to provide vision screenings for the needy population. All enrolled undergraduates had no background in eye health-related subjects. The teaching was not content-driven, requiring students' direct recall of facts. Rather, the teaching focused on Socratic teaching of logical theories and applications. The objective was to increase awareness of current eye care problems using case examples. Students learned to appreciate ways to promote active outreach services. Through activities and project work, students learned and practiced strong teamwork and direct application of knowledge in community-based eye care services. This learning experience demonstrates emergence of authentic practice from theory.

Introduction

*S*ervice-learning has been advocated for supporting academic development because it allows students opportunities to actively practice in real-life settings what they have learned. Its benefits, such as improvement in interpersonal skills, socialization, and sense of civic responsibility, as well as its challenges, have previously been reviewed *(Hébert & Hauf, 2015)*.

Service-learning is a required element of undergraduate education implemented at the Hong Kong Polytechnic University. It serves to highlight civic responsibility and foster students' self-development. Collaborative relationships at various levels, including peers, community nongovernmental organizations (NGOs), and faculty members, coordinate academic learning with identified community needs. In health care settings, service-learning has been viewed as an effective means of providing students opportunities

to work with community partners and experience interdisciplinary collaborations.

Interprofessional service-learning has mainly focused on the contributions of various health care professionals in meeting health-related challenges. Current evidence supporting the effectiveness of interprofessional engagements is limited, with most data reflecting certain health care professions. A review by Hammick, Freeth, Koppel, Reeves, and Barr *(2007)*, for example, identified nursing with medical participants as an instance of students perceiving their learning experience positively. Their prime outcomes measure focuses on teamwork, with a limited number of studies that were actually conducted under real clinical settings. It has also been noted that there is a lack of reliable assessment tools in teamwork competency due to limitations in assessment platforms, validity measures, and trained observers, among other factors *(Havyer et al., 2016)*. Nonetheless, interprofessional collaboration has now emerged in many health education settings to reflect the importance of teamwork in professional education.

In 2014, we introduced a new subject intended to further interprofessional learning through on-site face-to-face interaction using online and traditional lecture-based coursework relevant to eye care. Here, we will report how a health profession discipline is incorporating service-learning for nonmajor students, including its effects on self-reported perception of providing organized vision screenings for the needy population.

Eye Care Needs in the Community

Eye diseases and visual disorders occur across all age groups and are major public health problems evident within our community. According to the World Health Organization Vision 2020 report *(2006)*, it is estimated that the number of blind people will double by 2020. Three key strategies are advocated by the Prevention of Blindness, Vision 2020: The Right to Sight Southeast Asian Regionals: (1) increase awareness, (2) partner with organizations, and (3) develop adequate human resources *(Ackland 2012; McGavin 1999)*. Although eye care professionals such as optometrists are trained to help detect and treat eye health and visual disorders, the public often does not understand the importance of keeping abreast of eye health awareness and prevention practices from these service providers. Barriers include lack of knowledge, lack of access, and lack of financial resources.

Intervention by Education

Creation of Interdisciplinary Service-Learning Subject in Eye Care

In our traditional program, optometry students have been involved with community and public health education promoting eye wellness and delivering vision screening work. For the interdisciplinary service-learning subject, however, students from different disciplines fulfill a credit-bearing service-learning requirement of their choice from more than 25 subjects offered at the university. In this course, they learn basic concepts in a professional health subject while studying their own curriculum (Table 1). The students then provide outreach services by participating in team projects relating to vision screenings with our optometric student body group. Through this activity, they serve the community while practicing collaborative bridging on site, acting as an interprofessional team to serve the needy.

Table 1: *Overview of Program Details*

Subject name	Learning Through Providing Eye Care and Vision Health to the Community		
Subject duration	2 Semesters	**Year started**	2014
Class size per semester	120 students	**Group project size**	10-15
Learning outcomes	• Understand the major eye-related health issues/concerns and their impact on the underprivileged in the community • Plan, organize, and conduct vision screening project(s) in collaboration with community organizations (e.g., nongovernmental organization or charity bodies) • Appreciate the value of social responsibility, cultural diversity, and active citizenship • Work effectively in teams to solve problems encountered in planning and delivering the service • Communicate effectively with clients and other stakeholders • Demonstrate empathy for people in need and reflect on their roles and responsibilities as a responsible citizen		
Number of beneficiaries served	16,000 (schoolchildren: 56%, special needs: 4%, low-income families: 2%, ethnic minorities: 1%, physically disabled: 4%, others: 14%)		

Countries served	SE Asia (Cambodia, Vietnam; 13%), Mainland China (31%), Hong Kong (56%)
Student's self-ratings from a sample semester survey (*n* = 97)	• 60.8% reported that they took this subject in order to fulfill their graduation requirements. • 71.1% reported that they took this subject because they were very interested in this service-learning subject. • 62.9% reported that they found the service performed closely related to their majors. • 90.7% reported that they benefited a lot from their interaction with their instructors, TAs, and other students in class. • 91.8% reported that overall, they found the experience highly useful and rewarding.

The purpose of this subject was to offer an introductory-level course that would provide students early opportunities for on-site multidiscipline collaboration. The goal was to promote and encourage a mosaic-learning environment and create unique experiences to help prepare students to engage in team learning, as well as public health services. A class could include students majoring in fields such as arts, applied sciences and textiles, business, construction and environment, engineering, health and social sciences, humanities, design, or hotel and tourism. Through this approach, we aim to encourage students among various disciplines to acquire a lifelong knowledge base about potentially debilitating eye conditions that can affect people of various ages and population segments. Eventually, program participants will be able to serve as information sources for their peers as they enter the workforce.

Teaching Model and Service Planning Model (Blended Teaching Means)

Throughout lecture-based teaching, project preparation, and planning and execution of outreach activities, students learn how their actions can have a positive impact on the public, focusing their attention on community service to build their awareness of it. In this subject, course content and instructions are delivered through computer-based and on-site activities in addition to traditional teaching (formal lecture with discussion). We hypothesized that learning about and witnessing of real-life cases will improve students' awareness and concern for others. Through providing timely and appropriate eye care services to underprivileged groups, students will gain a better understanding of community health needs.

Training and Evaluation of Students' Competencies in a Team

Our introductory training consisted of phases from didactic lectures to skills laboratories as we aimed to bridge basic knowledge with application. First, students participated in an online learning module assignment utilizing study materials on service-learning goals and reflection prior to focused-topic lecture-based teaching. Next, our focus shifted to preparing individual students for quality service provision. Through hands-on laboratory teaching, students learned about basic vision screening procedures covered in class. Concepts assessments were then conducted using a procedures competency examination and a multiple-choice test format with immediate assessment. Section tutorials took place in a small group setting with supervisors in attendance to address any misconceptions that arose. To address and promote a team approach in serving the community, the group solved problems based on vision and eye health concepts presented and learned in class. With continuous feedback from supervisors, peers, and collaborating partner organizations, students practiced group productivity while constantly giving and receiving feedback from various sources. Each group understood their responsibilities, and every member of each group had a role (whether individually or overlapping) to serve their team. The quality assurance of vision screenings conducted had been under the direct supervision of optometric professionals who served as gatekeepers for proper referrals. Finally, as an added evaluation of learning outcomes, the use of reflective writing assignments helped students improve their learning and address their outlook or changes in attitude and behavior toward various concepts. Self-reported reflections indicate that students obtained a sense of civic values and appreciation of the importance of teamwork through these multiprofessional group projects (Table 2).

Table 2. *Compilations on Sample Reflective Writing From Students*

Student Major	Project	Sample Outcomes Reflection
Biomedical Enginerring	Elderly residing in local senior residence	*"I not only learnt about vision health or practical eye examining skills, but also enhanced my interpersonal communication skills.… I had more chances to interact with different groups of people including under privileged elderly, social workers.… I listened to their stories from the elderly, and when I worked with the social workers, I learnt to work more systematically.… I hope I can also contribute to community using my knowledge in the future."*

Accounting & Finance	Schoolchildren in Mainland China	*"Previously, I think that community service is 'uneconomical' as I cannot earn money from it, but after joining this project, I realize that serving the community will not only help people who are less affluent than us, but improving ourselves.… I sincerely believed that the children have saved me and helped me to combat my pessimism, which is out of my expectation."*
Electronic and Information Engineering	Adults with special needs	*"This experience about vision screening not only taught me about eyes and optometric skills, but also gave us a chance to understand what happened about the minority in our society. They needed our care and help to improve their lives in order to live like normal people with a job, relationship and livelihood."*
Computing	Hong Kong schoolchildren	*"After this service-learning, I understand actually I have the ability to help the society more. Although I am not a professional optometrist, I can still try my best and work with others and to provide a good service."*
Accounting & finance	Schoolchildren in Mainland China	*" [A]s a future accountant and a business woman… Facing people who speak different accents from us requires great adaptability.… In the future, I will be in an accounting firm dealing with all sorts of people with all kinds of backgrounds. It is of utmost importance for me to learn how to communicate effectively with different people. I was satisfied with what I had done and learnt from this experience."*
Interior design	Seniors living alone	*"As an interior design student, I will be more sensitive about lighting design for elderly and how to use the spatial arrangement to enhance the living quality of the elderly. Recently, there are many elderlies living alone.… I hope my future design will enhance the community."*

How This Contributes to General Education and University Education of Students Involved

The current trend in working environments involves teamwork and collaboration. Based on the WHO report *Learning Together to Work Together for Health (1988)*, it has been suggested that efficiency can be improved in the workplace if a team is composed of members with different degrees, knowledge, and skills. When different professions are offered opportunities to learn together, they will work even better together, which ultimately benefits health care services and delivery. To prepare graduates for team-based work, we offered a subject directly related to applications of teamwork. Team-based learning allows us to address these competencies and

to foster students' critical thinking skills and work effectively as a team.

This approach also directly reflects realistic constraints when working in a team setting. For example, student schedules from different disciplines and prior coursework for each student in a group were vastly diverse. With the added time commitment in project design of vision screening activities, more tutorial work hours were needed to ensure preparation details were completely addressed. Students learned to be adaptable in these areas and provided support for their peers when needed. In this work with community partners, students played an early outreach role representing their university. The engagement of non-optometric staff with community partners through service delivery also meant that students needed to learn about flexibility in mindset and communication when interacting with people from different educational backgrounds, age groups, and origins.

How Teachers Benefit From Teaching Nonmajor Students

Because optometry plays an important role in the primary health care system, effective delivery of public health education in this field is critical. One of the most important reasons for optometric public health outreach is to support prevention and early intervention for eye diseases. These goals can best be achieved by broadening awareness and educating the public regarding the importance of community programs to address optometry-related needs and health concerns. It is, however, a difficult message to deliver to our currently young and healthy population who have not yet experienced any major diseases.

We utilized a blended teaching format in order to improve this awareness through different conduits. This subject offered an effective platform for teaching students about the visual consequences of improper eye-related hygiene and other health-related matters. Working with students outside our profession also helped teachers appreciate a layman's perspective and concerns and provided proof of concept regarding the workability of a team approach to solve health care issues relating to primary optometry education. In addition, teachers were able to build student research projects and promote new areas of interest that were introduced by students from different disciplines. In these research projects, students shared their knowledge, thereby efficiently promulgating concepts applicable for vision and eye health care. This utilization of knowl-

edge from multiple sources not only benefits our profession but also widens non-optometry students' scope for applying their own knowledge and skills to the community after graduation, enabling them to implement a lifelong learning approach as responsible citizens to our society.

The development of this education framework needs a concrete measure of whether students benefit from this service-learning. A measurement of its impact value using a pre/post questionnaire methodology is under way.

Conclusion

The subject introduced engages our university students across all disciplines to help provide direct service activities to benefit identified underprivileged communities. We have to emphasize that the subject does not replace a professional health program. Rather, it complements such a program as a supplementary community involvement of students with others. Students learn about adaptability to reflect different views and deal with problems in a collaborative effort. It opens up students' awareness of their own health and concerns. During these experiences, even the most passive students will openly approach their supervisors to discuss health symptoms and ask questions. Learning that takes place through this direct contact with people cannot be replaced. Last but not least, students are drawn from different backgrounds and are joined by optometry majors to provide support to make up a group. We emphasize that the skills nonmajors acquired in this program are not exactly the same as the professional skills taught to optometric students. The group as a whole, however, commits to a passion for service and lifelong benefit in connecting students to the public. This commitment helps build a shared vision that can lead to better communication.

Future research goals for the program include investigating these multiprofessional experiences in local as well as in overseas settings to ascertain students' perception of their learning experiences and cultural understandings.

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