

## The Adventure of Quantitative Methods for Community Services, a Research Service Learning Subject

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### 1. ABSTRACT AND KEYWORDS

Most service learning subjects can be classified into direct and indirect service learning. Within indirect service learning, there is a small group of research service learning, which aims to serve the community by performing research work. Research work may include research on how the general public think about a certain service or facility or how a policy is affecting the society. The service learning subject, “Quantitative Methods for Community Service,” aims to help NGOs to better understand their current and potential service recipients and how do their service targets rate their current and/or potential service. This paper will state the basic idea and arrangement for the subject. Discussion will be made about problems which are critical and influential in a research service learning subject and how the teaching team has tried to tackle the problems. Real-life examples are provided for the sake of discussion and no personal data will be revealed.

Keywords: Service learning, Quantitative, Research based service learning

### 2. Introduction

If we search for different types of service learning on line, we will find that mainly service learning can be classified into two types: direct and indirect. Some would include advocacy or research-based as the third type. This paper aims to give an introduction to the service learning subject, Quantitative Methods for Community Service, and discuss how the students could help the community through an indirect or research-based service learning subject.

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### 3. Literature review

UCA gave a short and neat definition on direct service and indirect service for service learning subjects. Direct service learning refers to face-to-face service projects in which students directly serve the service recipients and students work on board issues, projects that benefit the community without identifying the target during participation in indirect service learning subjects. Research-based service learning is the branch which conduct a research or a study to improve the community or solve a problem. Siu, BWY (2014) pointed out that direct and indirect service does not have to be mutually exclusive. Connor-Linton (1995) discussed students learning about a sector of the community through teachers' research and/or community service and applied what they have learned to create a service or product meeting the needs of the community. Hydorn, D.L. (2007) discussed course design and assessment of service learning project in her introductory statistics course. Duke (1999) described a few service learning projects including environmental monitoring, tax preparation for elderlies, tutoring, optimization of seating plan for a local theatre and using mathematics to design gardens, trails, landscaping, and building projects for the community. Anderson, J.E., and Sungur, E.A. (1999) described students helping with the 10-year comprehensive plan for the city of Morris.

### 4. Outline of the Subject

The aim of the subject, "Quantitative Methods for Community Service," is to help NGOs better understand their service recipients and/or potential service recipients. NGOs are often required to apply for project funding through a competitive bidding process, which requires market research and/or performance report. The aim of this service learning subject is to bring in quantitative skills (such as questionnaire design and data analysis) to community service, such that the client NGOs can better understand the potential service needs and students can enhance their understanding of the underprivileged during the process. Students of this subject would communicate with the collaborating NGO, understand its needs and design a questionnaire. The questionnaire would be reviewed and endorsed by the community partner before implementation. After the questionnaire is finalized, interviews will be conducted by students within the service period. The teaching team would visit students during their fieldwork to provide guidance, assess their performance and help students to reflect on their service experience during debriefing. By the end of the semester, students will present their findings and finish their report.

The most significant part of preparation work in this subject is to select the right partner. It is very common that NGOs have a very narrow base of service recipients. Small amount of service recipients or interviewees lead to the need of several collaborators. A desirable collaborator, according to the comments of the teaching team, ideally should be able to provide a group of service recipients who are willing to share their comments and preferably a safe environment for students

to conduct their survey.

## 5. Discussion and Recommendations

Brown, E. (2015) listed a long list of challenges and strategies of Service Learning. As an indirect service subject, quite a few of these challenges were met and listed in the following table.

Challenges faced by collaborators	Challenges faced by students	Challenges faced by teaching team
Scheduling	Transportation	Student “no-shows”
Expectations	Expectations	Capacity of partner
Supervision	Communication	Meaningful and quality work / experiences
	Am I actually helping?	Relationship building
	Choosing community partner	Time
	Grouping	Safety issues
	Fear/Stress/Anxiety	

Brown, E., gave a very comprehensive list of challenges faced by service learning subjects and the above table has listed some of the bigger issues faced in this subject. There are a few points which the authors would like to elaborate and discuss.

### 5.1. Am I actually helping?

This is not quite a big issue for direct service learning subject. However, for an indirect service learning subject, this becomes quite an issue, especially in the early stage while students are deciding which subject to enroll. For a direct service subject, for example, teaching English to underprivileged children or examining the neighborhood of elderlies, students have a clear picture of what they are doing and how they are helping. Students often have mysteries on whether the questionnaire can help improve the lives of the underprivileged. Some even have the idea that, since the service recipients received aid from the NGO, the opinion from the service recipients must be biased. Students having this thought usually would feel that they are just filling satisfaction reviews with pre-selected answers.

Based on our observations and some guidance, students would understand one thing right after their first contact with their interviewees. For a lot of elderlies, as most collaborators in this subjects serve elderlies, having someone to talk to them is a gift already. Students would find out that, just by having casual conversation would be helping as there are isolated elderlies who are not willing or capable of basic interactions. As soon as students realized that their conversations could help, the problems caused by the confusion about whether I am actually helping will die

down.

### **5.2. What if I do not agree with the NGO or the questionnaire?**

There were two obvious cases which students did not agree with the idea brought up by the collaborator in the short history of this subject. Due to privacy issue, the authors decided to name the collaborators A and B.

Case 1. Collaborator A was looking forward to promote a new service to its members and elderlies in its neighborhood. Students collected information from its members and found that less than 50% of its members declared that he or she would require the new service. One group of students based on the findings declared the new service was good for nothing during their group presentation.

Case 2. Collaborator B was looking to propose a change to the government. The survey was conducted on the street such that public information could be gathered. Some students did not agree with the idea and reflected by their body language and attitude.

For case 1, the teaching team did not find any lack of motivation or problems in attitude while the survey was conducted. Leading questions or different tones, which may lead to biases, were not found during surveys. In other words, even if students disagreed with the collaborator, they carried out the work professionally. After the presentation, the teaching team discussed with the group of students and conveyed the message that, often a service provided by a NGO serves a very small group of recipients and the approval rate before establishing may not be high as well. At last, students understood that the society has to help people in need even if the majority believes the service was not necessary.

Case 2 provided a much more difficult situation as students were not enthusiastic in serving. The teaching staff and the collaborator have discussed and decided to set up a meeting between students and one of their previous service recipients and asked the service recipient tell her story. This meeting allowed students to understand how their work may improve the community as how others are suffering under the current situation. Although we did not have the most enthusiastic students after the meeting, the number of successful interviews increased mildly.

## **6. Conclusions**

The sustainability of this subject relies heavily in the trust of collaborators, professional performance of our students and support from the department and the office of service learning. The subject has been offered successfully with 90% of enrollment rate in the three offerings. This is not possible without the generous support from our collaborators and students.

We have seen students, who initially did not want to participate as service learning is mandatory in our university, to participate whole-heartedly on the field. We have found that our relationships with collaborators grew and establishing collaboration in other area. One thing we are certain about is that, just like any community, we are helping others and others are helping us at the same time, and mathematics and statistics can definitely help our community indirectly.

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