

# Local Government-Academe Partnership: Touching and Inspiring Students in Environmental Monitoring

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In this paper, I describe the partnership between Bayawan City and Silliman University in the Philippines in monitoring the potential negative impact of the waste management center that the city has built to a nearby community. The city government provided the logistics while the Environmental Anthropology students did the survey for free. During the reflection sessions and in their written narratives, the students said that they were emotionally touched by the helpless conditions of households they interviewed. These households feared the potential negative effects of the said center, had no safe source of drinking water, and lived in a community with poor sanitation. This paper will show that service learning as a pedagogy will not only reinforce what students learn in the classroom but will also make them emphatic and inspired to use their skills to address a problem.

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**KEYWORDS:** local government-academe partnership, service-learning pedagogy, waste management center, household survey, environmental monitoring, Bayawan City, Silliman University

## INTRODUCTION

Service-learning as pedagogy of teaching has been drawing interest among higher education institutions in the Philippines, although it is named by some educators as community involvement. It may be called by different names, but the essence of exposing students to the community to get involved or to serve in community affairs that are relevant to classroom instruction is apparent. In summer of

2011, a national workshop was held to introduce and institutionalize the practice of service-learning in higher education institutions in the Philippines that are members of private educational associations. The workshop was facilitated by Silliman University and Trinity University of Asia. These two institutions spearheaded the adoption of service-learning in the country through the support of the International Partnership for Service-Learning (IPSL) and the United Board for Christian Higher Education in Asia (UBCHEA) (McCarthy, 2009). Earlier, while I was also in Hong Kong for my UBCHEA Fellowship prior to that national workshop on service-learning in the Philippines, I had attended the conference of the Association of Commonwealth Universities (ACU) where research partnerships among and between academic institutions and the business community was discussed to enhance quality learning and its impact to society. The relevance of partnership is also true in service-learning.

Educational partnerships in service-learning program is needed because the engagement of the academe in this area cannot be fully realized without active collaboration among the community, non-government organizations and the local government units of places where students will render community service (Oracion, 2010). But a community does not always mean a geographic place but could be any situation where there is certain group of people that needs help and can be served. It could be a school, an association of farmers or mothers, an orphanage or home for the elderly, a hospital, as homeowners association and related others (e.g., Pushpalatha, Chithra, Jacqueline & Sherina, 2009). The motivations or drivers for partnership are several which reflect the needs of collaborating institutions or organizations. In the partnership between or among educational institutions, it is expected to be beyond resource borrowing to knowledge sharing for mutual learning (Africa Unit, 2010). This can be similarly true or feasible in the partnership of academic institutions with government and non-government organizations.

In this paper, I will present the partnership between the city government of Bayawan and Silliman University in Dumaguete City in Negros Oriental, Philippines. Bayawan is a newly-created city inaugurated on December 23, 2000 but is already committed to maintaining a safe environment for its constituency before urbanization takes over. The two partners are 100 kilometers away from each other. I will discuss in the succeeding sections how the partnership was forged and what the arrangements were as well as how this has benefited or will benefit the students of Silliman

University and the constituency of Bayawan City. The data used here were taken from the sharing of experiences of students during the reflection session within the service-learning period and in the written narratives they wrote when they were no longer in my class. This allowed me to check if what they expressed during the reflection sessions were consistent with their written responses.

### **Local Government and Academe Partnership for Safe Environment**

The local government units in the Philippines are required by law to effectively address the problems of contamination of drinking water reserves and the pollution of bodies of waters such as creeks, rivers and seas due to indiscriminate dumping of domestic and industrial solid and liquid wastes. These mandates are embedded in the Ecological Solid Waste Management Act of 2000 (Republic Act 9003) and the Clean Water Act of 2004 (Republic Act 9275). In response to this, Bayawan City established its Waste Management and Ecology Center (henceforth, waste management center) in an upland barangay about 10 kilometers from the city proper. The facilities within the center include sanitary landfill, composting plant, material recovery facility, septage treatment facility and wastewater treatment facility. The latter is intended to treat the leachate from the landfill and supernatant from the septage treatment (Boorsma, Bollos, Torres & Aguilar, 2009). Its constructed wetland in a coastal barangay, which is duplicated in the waste management center, was already found to be efficient as a wastewater treatment tool (Guinoo, Aguilar & Oracion, 2009).

The composting plant produces organic fertilizer from biodegradable solid waste for the agricultural projects of the city government or for sale to local farmers, while the material recovery facility segregates those recyclable wastes, thus reducing the amount to be dumped into the landfill. The reduction of solid wastes by segregation will increase the lifespan of the sanitary landfill which is projected to be between 9 to 10 years (Boorsma et al., 2009). The septage treatment facility, on the other hand, is for the sludge to be collected from residential houses in order to enhance the liquid waste management of the city. And the last of the facilities in the center, which is the wastewater treatment facility, is connected to the whole system that finally treats the leachate from the landfill and the supernatant from the septage treatment before releasing this to the

nearby creek (Figure 1a and 1b).



*Figure 1a.* Workers segregate plastic waste for recycling



*Figure 1b.* The newly-opened sanitary landfill

The waste management center started its operation in the early part of 2010 and the concern of the city is how the leachate from the wastewater treatment facility will be monitored given the limited technical capacity of its personnel. The city government has no registered chemist who can conduct water monitoring and testing although it has available laboratory equipment for this purpose. Nonetheless, the monitoring and testing points within and around the waste management center as well as the areas where to collect water samples were identified. The water testing was conducted before and during the operation of the land fill to obtain baseline and annual data for determining the changes in water quality in surrounding areas. As already mentioned, the wastewater coming out from the waste management center also has to be secured to prevent contamination of the groundwater and other bodies of water surrounding the area, thus preventing water-borne diseases in the nearby communities.

Silliman University which is a century-old university, committed to the enhancement of the spiritual, social and environmental well-being of people in communities within its reach (Ligutom, 2009, p. 159), had positively responded to the request of the mayor of Bayawan City. The partnership was facilitated by the Research and Development Center, which I head as Director. The nature of data to be gathered for monitoring the potential negative impact of the waste management center on the immediate environment and the nearby community required the involvement of the Chemistry, Biology and Sociology or Anthropology faculty and students. I was handling a

course in Environmental Anthropology during the semester when the agreement was finalized and I took advantage of this opportunity of having a community where my students could engage in service-learning. Two faculty members from the departments of Chemistry and Biology likewise accepted the challenge when the idea was presented to them.

A Memorandum of Understanding (MOU) was signed between Bayawan City and Silliman University to formalize the agreement which will be effective up to certain time that the two parties will find it necessary. The city government of Bayawan provided the logistics while Silliman University offered the free services of its faculty and students who conducted water analysis, biological monitoring and household survey (see Figure 2). The logistics included transportation from Dumaguete City to Bayawan City and back, accommodation, and meals during fieldwork on particular weekends. The chemicals or reagents for water analysis as well as the laboratory facilities and equipment were provided by the city government during fieldwork, but some major water analyses were done at Silliman University due to time constraints. The personnel from the City Environment and Natural Resources Office-Urban Environment Management (CENRO-UEM) operating the waste management center likewise participated or assisted during fieldwork. In effect, they were mentored and hopefully become capacitated to continue the monitoring in the future.

The field activities in Bayawan City of faculty and students were part of the service-learning program of their respective departments. These activities were integral to their classroom instructions and were undertaken during certain periods of the semester. In the case of Chemistry students, the conduct of the water quality monitoring and analysis was under their course in Industrial Chemistry. For Biology students, their participation was part of their supervised training during summer while for my class, and as mentioned earlier, it was part of a requirement in Environmental Anthropology. Fieldworks enabled the students to apply the theories and skills they learned in their respective classes. The experience was valued not only in terms of the knowledge they gained but also in terms of their contribution to the effort of the incumbent administration of Bayawan in making the city environmentally secured.

My class in Environmental Anthropology composed of two graduate and eight undergraduate students were directly interacting with the local residents because they surveyed all the 53 households

in the community. The graduate students also presented the results of the household survey to community leaders and local government officials. Since I was not personally involved in the fieldwork of the Chemistry and Biology students, because we were in the field during different months of the school year, only the experiences of my students in Environmental Anthropology will be included in this paper.<sup>1</sup> With my direct involvement, the students completed the whole process of surveying the households, processing the data, and presenting the results to the concerned city officials of Bayawan within a month. The actual direct engagement of students with the community residents nearby waste management facility and the city officials covered four days. I was with them to ensure their safety as well as the quality of the data gathered.

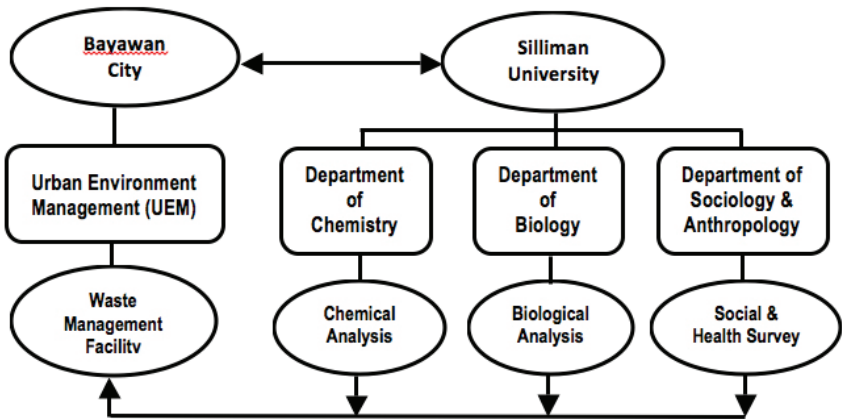


Figure 2. Conceptual Model of the Partnership

But let me discuss first some theoretical considerations in analyzing the impact of service-learning to the emotions and actions or wishes of the students as results of their exposure to the realities of the community they surveyed, although the engagement was only for a short time. The point is that it is not the amount but rather the quality of time the students have spent in fieldwork that is more important to achieve in service-learning engagement if time is limited and is a big constraint (cf. Bernacki & Jaeger, 2008). Other studies have shown that scheduling and mobilization for community work are always going to be problems for service-learning students and cause tensions

(Shannon 2007). They also have other academic requirements that they need to satisfactorily meet within the same semester.

### **Service-learning in Confronting and Appreciating Realities**

Service-learning literature is replete with the notion that it provides opportunities to students to confront various forms of realities which some of them may consider strange or completely different from their kind of reality (Colby, Bercaw, Clark & Galiardi, 2009; McCarthy, 2009; Oracion, 2010). In this paper, I define confronting as the act of how the students tackle the tasks assigned to them under the service-learning program and face up to the challenges of accomplishing them for the benefit of the people they serve or work with. In this case, the students are not simply viewed as recipients of instructions but as creative individuals finding ways and navigating their courses of actions in getting the tasks done according to defined expectations. Meanwhile, appreciating, which is an act that corresponds to confronting, describes the understanding and valuing of students of their experiences in service-learning. Appreciation ranges from being grateful for having been able to serve and share their knowledge and skills to being frustrated for failing to meet their own or other peoples' expectations of serving others.

So while there is a need to follow-up and determine the long term effect of service-learning to students, in terms of how they confront and appreciate the realities before them during service-learning, which means exploring its effects on graduates (Sato, McCarthy, Murakami & Yamamoto, 2009), it is still important to look into how this emotionally affects and inspires college students to do better and value what they currently have which they often overlook and take for granted. It is only when these students are able to see how others appear contented even if they have much less, that they start to realize how much more they should appreciate what their parents have provided them (Oracion, 2002, 2010). Although the impact of service-learning on the personal and social traits and skills of students (McCarthy, 2009) may be affected by the length of community engagement they have, this can become more significant if there are ready activities for them when they start community work which are consistent with their skills (Colby et al., 2009; Oracion, 2009).

Although there are mixed methods and findings on the impact of service-learning, the study of Bernacki and Jaeger (2008) at least

showed that even if the students only had a semester of service-learning exposure, they already manifested more compassion and social sensitivity, improved understanding and ability to solve social problems, and greater efficacy to make the world better. Generally, students with service-learning experience were found to “perceive more positive changes in themselves than did students in traditional courses” (Bernacki & Jaeger, 2008, p. 7). However, service-learning to some other students and teachers is filled with tensions because of limited resources and conflicting expectations that often result in negative experiences and frustrations. Shannon (2007) observed among his service-learning students some signs of frustrations when they did not sense the positive impact of the services they rendered while others were not motivated or excited enough because they felt being obligated to engage in community work as a course requirement. These observations certainly imply the need for teachers to orient and psychologically prepare their students before their community engagement (McCarthy, 2009).

The areas of the experiences of students in service-learning that may be examined as measures of its impact should be clearly specified. These may include what knowledge and skills the students were able to learn or enhance, how the realities they discovered in the field affected them emotionally, what plans they have thought of in response to these realities, and what they wished for the community to have which it should acquire or which the government should provide. In one of my previous works, I quantitatively measured the multiple and related impacts of service-learning (Oracion, 2002). Based on the self-rating of 92 students enrolled in different courses, I found out statistically significant positive relationships in the combination of the following variables: classroom knowledge and skills, amount of service rendered, value of service rendered and enhanced knowledge and skills.

The interactions of the above mentioned variables mean that service-learners who have more knowledge and skills acquired from classroom instruction have rated higher amount of services they rendered to the community. Correspondingly, those who had rendered more services had valued more or were satisfied with the services they had rendered, and those who had served more rated higher in terms of the additional knowledge and skills they learned from the experience in the community service. In other words, students who had less learning inside the classroom were less effective in community service and found less meaning in what



they were doing. In this present paper, I want to qualitatively pursue how the realities observed by the students and what they heard from household interviews had emotionally affected and inspired them to develop certain plans of action and hopes for the community that they had studied and known even for a limited time.

### **Environmental Anthropology and Fieldwork**

Environmental Anthropology is not a general education course and is offered only to students who are majoring in Sociology or Anthropology. This course examines the relationships or the dynamic interactions between human populations and environments in order to address practical environmental questions, problems, and concerns. It looks also into the ways by which environments have restricted the ability of human populations to have a healthy life as they use traditional strategies and explores alternative strategies in response to a changing environment particularly amidst global climate change. To enhance the analytical ability of students, they are exposed to different conceptual approaches of studying human-interaction interactions and case studies of such interactions in different environmental conditions categorized into preliterate and contemporary societies, rural and urban communities, coastal and upland areas.

Field trips and exposures to communities are deemed important for students to appreciate more the lessons provided in classroom settings. The partnership of Silliman University with Bayawan City helped a lot in this methodological necessity in teaching. So, with the knowledge they already learned in social theory, research, and social statistics, students were brought to the community to interview households about their conditions relative to certain socioeconomic, health and sanitation issues which may be affected by the presence of the nearby waste management center. The fieldwork happened only during the middle of the semester when they were already theoretically and psychologically equipped to do the interviews and understand the data they will gather. As expected, everyone was excited to travel without cost and to be in another place which was new to many of my students, particularly the foreigners and those not from Negros Oriental.

The students went around the community in pairs and searched for the households to interview which were scattered in the valley and

hillsides nearby the waste management center. They used the survey questionnaire, written in English but translated into the dialect, which I prepared with the help of a Filipino graduate student. The night after the first day of the survey, we had a reflection session about the initial experiences of the students and discussed the problems they had encountered in order to make the fieldwork the next day easier. Although the students were tired of walking and climbing the hills to locate the households to interview during the first day, they expressed their satisfaction of the experience and eagerness to go on during the sharing. The next day, the tasks were easier to accomplish because the students had already strategized their movements based on their first day encounter with the community.

All the households within the potential affected area of the waste management center were surveyed and the data were analyzed in the school. With my close guidance, the Filipino graduate student assumed major role in data processing and in the analysis over the implications of the results together with the other students involved in the survey. The major problems perceived and experienced by the community were identified and solutions were suggested by the students. I prepared the technical report as senior author, because of the authority it needs, with a Filipino graduate student as a co-author (see Oracion & Gemina, 2010). He likewise orally presented the data, along with the recommendations, to the concerned city government officials of Bayawan. This report will serve as baseline for monitoring the conditions of these households during the succeeding years, but involving other sets of students. How the current students were affected and inspired by their service-learning engagement in Bayawan City will be discussed in the succeeding sections and will be compared with future sets of students.

### **Knowledge and Skills Learned and Enhanced**

During the validation, the Filipino graduate student of the research report and the undergraduate students were able to prepare a summary of what they considered as the major issues that are bothering the households nearby the waste management center. The first two related issues included the fact that the drinking water of the community was not safe because of poorly developed sources and bad sanitation practices (see Table 1). These were further threatened by potential contamination from the waste management center. Moreover, the

residents blamed the greater proliferation of flies observed during the fieldwork as compared in the past to the waste being dumped at the center that produced foul odor. The students likewise noted that the community seemed to lack adequate knowledge on the purposes of the waste management center and its operations to mitigate potential negative effects. Through their actual experience, students, with the facilitation of the graduate student, were able to carefully and critically sum up the issues under consideration.

**Table 1. Sources of Water for Drinking**

Type of Information	Number	Percent
<b>Sources of Water for Drinking</b>		
Open dug-well	19	35.85
Undeveloped spring	16	30.19
Shallow well (hand pumped)	15	28.30
Spring box	4	7.55
Communal faucet from spring	1	1.89
<b>Ownership of Toilet</b>		
Without toilet	29	54.71
With own toilet	23	43.40
No answer	1	1.89

Source: Oracion & Gemina (2010)



Figure 3a. Open dug-well



Figure 3b. Undeveloped spring

Meanwhile, the knowledge and skills reported by students which they got from the fieldwork were a combination of those related to the discipline as well as those relevant to the development of personal and social skills. One of the graduate students, who decided to pursue teaching after earning his degree, remarked that “service-learning program serves as an avenue to facilitate the initiation of interventions that will enable the community to address their problems and issues of concerns.” He added that it allowed the students to observe and hear people in actual situations which help in appreciating the usefulness of the knowledge and skills gained inside the classroom. For the foreign student, it was hard for him to interview locals and he found the importance of working with a Filipino student who spoke the native tongue. It was totally a new experience for him working in the community which he could never learn inside the classroom.

For the undergraduate students, it was a discovery and a realization of the kind of work that they may go into after graduation especially if they will be working with community projects. They became aware that fieldwork is not that easy because one has to travel and move around the community to meet people in order to understand the social problem under investigation. One mentioned the needed stamina for surviving a long hiking trip (Figure 4a). Moreover, they realized that an ability to interact with a diversity of people was important in order to generate quality data for a community program (Figure 4b). This ability includes being like the community people or appearing simple in the manner of dressing to avoid social gap that may restrict the flow of information. My American student, who took this principle seriously in fieldwork, went around interviewing without shoes because he saw many barefooted residents. He also



*Figure 4a.* The group rests after a long walk in search for households to interview



*Figure 4b.* The graduate students review the data of the undergraduate students

spoke in twisted dialect and many locals were amused with him. These are skills which students cannot learn by simply reading but by actually interviewing strangers and winning their trust to get the needed information.

Time management was also mentioned as an important learning during fieldwork which can be applied to the many other undertakings of students. The undergraduate students also appreciated having worked with professionals, and that included me and the city government officials who joined us in fieldwork, and with the graduate students. Moreover, some students were able to see how plastic waste materials were segregated, so they can be recycled or sold to buyers. And being there in the site of the waste management center, the students appreciated how this can function in the disposal of solid and liquid wastes. Hearing the stories of the nearby residents, the students also recognized the potential threats the site can bring to the potable water supply of the community which is situated downhill and the foul odor it can produce because of the waste coming from the public market.

### **Emotional Impact and Point of Realization**

The students generally considered that interviewing and being there in the community allowed them to learn the “other side of life” and those of other people who were not as fortunate as they were. This connects to what I said earlier that preparing the students before fieldwork is a must. Pre-fieldwork preparation had helped a lot because this gave them right focus and motivation despite the short time that they engaged with the community. One female student wrote that “I am very much affected by the interaction I had with the people I interviewed,” which she could not have experienced when just confined inside the classroom.

The meaningful experiences of students must be also basically due to the gross differences between their social statuses and the community residents who made a living basically by farming and by working for other households. The students felt sorry to hear their sad stories, and these households were more inspired to tell because they needed someone to hear their situation. They told the students that none from the city government had gone to interview them about their sentiments toward the waste management center. There must have been a breakdown of communication from the city government

down to the community because the former would claim there was consultation done with the community.

On the other side, the students noticed that despite their miserable and difficult situations, the households they had interviewed were very nice and hospitable to them (see Figure 5). They considered them very helpful, honest and compassionate which the students may perhaps have not expected from marginalized people who must have considerable discontentment and angst against society and the government. Given the available resources the community had, the students felt the strong will of families to feed their children and struggle for a better life, because despite the odds, they generally appeared to be happy (which is, of course, a trait that describes the adaptability and resiliency of Filipinos). One student commented that she “felt more blessed that I have all the things I need” because of what she saw in the community. She was disturbed that school age children had to stop or did not attend school because they had to assist their parents in the farm. Such emotional impact resulting from this exposure to social disparity is not only true to my students now because I heard this several times from my previous service-learning involvement (Oracion, 2002, 2009, 2010; see also Ligutom, 2009).



*Figure 5.* A farmer offers boiled young corn during the interview.

Meanwhile, my graduate student from Tibet, who was present during the presentation of the results of the survey to the concerned city government officials, was impressed by the democratic atmosphere of the process. He appreciated the freedom given to those present to ask questions, make comments and give suggestions to the city mayor who was presiding the meeting. He was also introduced to everyone before the meeting started which made him more appreciative because his presence was valued. The Filipino graduate student whom I asked to lead in the processing and presentation of the data was thankful for the opportunity. He said that it "motivated me to commit my time and knowledge in the succeeding activities that may follow after the fieldwork." What he meant was the other opportunities that he may be involved in Bayawan City considering that its partnership with Silliman University is a continuing engagement. Like any other student, he was also emotionally affected by the conditions of the households he interviewed and there was that burning desire to continue working for them.

### **Inspired Planned Actions**

After the students discussed the processed data, they agreed that the community needed to be more aware and informed of the basic functions, purpose and benefits that the waste management center will generate as well as to have safe sources of potable water. In line with this, they suggested that the waste management center must adopt progressive preventive measures and minimize the presence of flies within and outside the center. When these matters were presented to the concerned city government officials, the mayor realized the need to send health personnel to check the status of the health and potable water supply of the community. Whether or not this was actually done was already within the powers of the local executive which oftentimes depend on the availability of resources to mobilize and on the sense of urgency of doing it. This is something which can be monitored in the succeeding fieldwork.

At a personal level, there were students who desired to continue doing volunteer work when there are opportunities available and this manifested how their service-learning engagement had inspired them. One wrote that she wanted "to serve and maybe help other people even if it's just (in a) small (way)." Another student desired to go back and pay a visit to the woman who helped her when she

almost fainted after that cruel climb over the mountain to reach the waste management center. I was with her at that time and I almost fainted myself because of the mid-day heat and fatigue. My student added that she was always reminded of the woman's kindness and helpfulness even if she was not a relative—a hospitality which is very common in rural communities. In fact, doing household survey in rural Philippines is easier compared to doing it with households in cities. The latter are always suspicious of strangers and one have to be experts in handling the hostility or indifference of prospective respondents for interviews.

The exposure of students to the difficult life in the community also served as inspiration for them to become better persons and not to take for granted the luxuries and opportunities they currently enjoy. One student who became conscious perhaps of wasteful spending said that, she will try her best to manage her resources well and to always thank the Lord for all the blessings she received and will be receiving. Another student became conscious of finishing a degree and promised to study hard, to find a good job, to have a family, and to have children with a good life and education. All these are obviously expressions of the desire to get away from a miserable life, particularly that there is still time for planning and preparing, and the realization that life is not all about enjoying it but also about working hard. The lesson learned is that a person is always responsible for his or her own future.

For the Filipino graduate student, the whole experience had affirmed his plan to work at Silliman University after getting his degree and to participate in research projects that can help bring about better understanding of social realities and development in communities among students. He realized that there is a great opportunity within the university, in general, and in its research unit, in particular, to initiate projects that may be implemented in coordination with any stakeholders willing to be involved in community development work. Notably, for this particular student, the practice of integrating service-learning in his future teaching career, either at Silliman University or outside of it, is likely. This implies the relevance of involving graduate students in service-learning rather than focusing only with the undergraduate students. The graduate students can assume leadership role in implementing a community project because they are more mature and have greater experience compared to undergraduate students.



## **Quality of Life for the Community**

The students wrote what they considered the community residents should acquire to have quality life, and their responses included foremost stable sources of income and quality education for their children. It is interesting to note that these are reflections of the importance students have put on education for job security and as investment for higher productivity either in farming or off-farm employment. They also equally gave value to quality health care and services which the government has to provide, they added, through a well-equipped and functional health center nearby the community. This also goes without saying the need to secure the community's sources of potable water and to inform them how to improve their sanitation practices because these all connect to quality health. One student felt that the households she interviewed must have a permanent place to live because they were tenants and under the mercy of the landowners. Another student recognized the importance of having fewer children which they can afford to raise.

In the future, if given the opportunity to pursue service-learning in Bayawan City, the Filipino graduate student who wished to pursue teaching described how he would work with the community. He believed that improving the quality of life in the community demands active involvement of the residents since it is not something that will simply be provided to them. The community has to be assisted and empowered through a participatory action research process wherein they could systematically organize their experiences and build up a solid case that they could use to lobby before the local government leaders for support and attention to what they need. They have to be taught to gain active representation in the different local special bodies of the city government which decide on appropriate and relevant programs that truly respond to their pressing needs and concerns. He finally noted that sustaining a working relationship with Silliman University, especially with its Service-Learning Program, can be of great help.

## **Facilitating and Retarding Factors**

In the course of the fieldwork of my students, they were exposed to the social, economic, environmental and political realities of the community which they may have less understood and appreciated if

they only remained inside the four walls of the classroom (Oracion, 2006). To hear these realities directly from the mouths of their respondents and to see them around the community, added value and meaning to what they read in journal articles and books and from classroom lectures. But whatever they heard or saw around could still be less understood and appreciated if they were not provided with the critical lens to analyze and interpret them. Thus, classroom instruction is always an integral part of service-learning engagement of students and the latter is not just a reason for students to escape classroom lectures and assignments. Service-learning, which brings students to reality, is not an end by itself, but a tool to validate what they learned from the classroom. Taken together, they learned concepts, acquired skills and underwent affective or emotional changes which are personally and socially relevant and enriching.

Since service-learning engagement requires a host or recipient community and resources for the mobility of students, the partnership forged between an academe and a government unit or non-government organization is always vital for maximizing the use of resources and available opportunities (Figure 6). The environmental commitment of Bayawan City and the trust of its officials to the capacity of Silliman University faculty and students to undertake the monitoring of its waste management center became a facilitating factor for bringing our students for their service-learning engagement. The only retarding factor that I experienced, not only for this class but in my previous



*Figure 6.* A graduate student presents the survey results to city government officials

service-learning activities, is the time needed for serious community work and the requirements of other courses (see also Ligutom, 2009). The students have other courses to mind that are equally important in order that they can graduate from college. Doing service-learning every weekend, which is the only possible option during a semester, is also draining to students and this explains why prolonged engagement of students with a community is always impossible.

A possible strategy is to have three complementary subjects, which is the maximum number that a student can enroll during summer, either under one teacher or two teachers who agree to employ service-learning as a teaching strategy. This could take the form of a summer field school under the close supervision of the teachers concerned. The students have to live in a community where an existing project of the school is being implemented. For example, courses in sociology (current social issues), history (Philippine history) and political science (Philippine Constitution) may be combined when students shall have service-learning engagement. All students must enroll in the three courses. They have to complete the required 54 hours to earn credit for each course. Introductory sessions of these courses have to be conducted in the campus where the students would be oriented about service-learning principles, learning expectations of every course, concepts and theories, and activities in community work.

The 40 students, which is the minimum class size, can be assigned to live with certain households in the community or a dormitory which may be provided by the local government or non-government organization. Considering the large number of students involved, two communities may be covered and the teachers can only agree on how they will distribute the tasks of supervising the students. This also means that a partnership has to be forged by the academe in conducting service-learning, not only for placement of students but also for logistics. But, this partnership must be sustainable and not only short-term in order to appreciate the accumulated impact of the services by batches of students to the community over the years. It is also preferred that this partnership can be attached to the Extension Program of the university. The students can work with and be supervised by professional extension workers, thus, providing work force to an extension project and supplementing the supervisory function of the teacher.

## CONCLUSION

The service-learning engagement of students under Environmental Anthropology discussed in this paper may be brief, but is concise and specific to a particular purpose, i.e., to conduct household survey of the social, economic and health conditions of households nearby the waste management center. The goal was to establish baseline data for purposes of monitoring the potential negative impact of the center to the health of these households. The health data will be correlated with the chemical and biological data gathered by the chemistry and biology students, whenever there will be observed contamination in nearby water sources of the said community.

The students of Environmental Anthropology both served as channels of the community in relaying their situation and sentiments to the city government and as providers of information to the latter for mitigating whatever unintended consequences the waste management center may bring to the said community. The partnership between Silliman University and the city government of Bayawan offered the students the needed logistics to be in the community to render service and to hone their research skills and environmental knowledge.

The experiences of my students as expressed during our reflection sessions in the field and in school after fieldwork, as well as in their written narratives after a semester have validated the findings of other studies on the positive impact of service-learning (Shannon, 2007; Bernacki & Jaeger, 2008; Oracion, 2009, 2010). Specifically, these findings refer to how the service-learning engagement of students improve their understanding of social problems, enhance their compassion for others in need, and stimulate their sensibility to appreciate and value what they have and what the community should have based on what they heard from interviews and observed in the community. The desire to engage in volunteer works in the future and to employ service-learning pedagogy when given the opportunity to teach was noted from both the undergraduate and graduate students, respectively. Indeed, service-learning makes teaching more effective and grounded with reality if time and resources of both teachers and students will only allow.

## NOTE

<sup>1</sup> The group was actually composed of two graduate students in anthropology (one was Tibetan) and eight undergraduate students majoring in anthropology and

sociology (one was American). Five of the undergraduate students just sat on the class for a period because the service-learning activity we planned the previous semester in our Social Statistics class was not realized due to problem in time and logistics.

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