

Serving the Community through The Curriculum

By

Sapna Gupta, PhD
Associate Professor of Chemistry,
Park University, 8700 NW River Park Dr.,
Parkville, MO 64152

“About 65.4 million people volunteered through or for an organization at least once between September 2004 and September 2005, the Bureau of Labor Statistics of the U.S. Department of Labor reported today. The proportion of the population who volunteered was 28.8 percent, the same as in each of the prior 2 years. The median number of hours per year is 50”.

(<http://www.bls.gov/news.release/volun.nr0.htm>) This, and more available statistics indicates that volunteering in USA is currently on the rise. More citizens are becoming involved in their communities and want to give something back to the society.

To encourage community involvement from an early age and make this experience a meaningful one, more teaching institutions, of all levels, are incorporating “Service Learning” in their curriculum. Although service learning and volunteering may seem the same, but the former is part of the curriculum and hence is a graded activity and involves reflection of the service performed.

One of the biggest problems with implementing service learning in institutions of higher learning is that most instructors don’t know how to incorporate it in their field. In some fields, service learning is part of the curriculum by default, for example Social Work, Psychology and Criminal Justice. It is harder to think of how to incorporate service learning in the physical sciences: Chemistry, Physics, Math or even some Social Sciences: Business, Political Sciences.

Thus, when designing the curriculum to integrate service learning, the instructor must first understand the concept and principles of service learning.

- It is imperative to understand that service learning is not simply volunteering in a community. It should have the academic learning as an ongoing aspect.
- To promote the learning in the service, the activity or project should be relevant to the students and the community.
- Students and instructor should get time to reflect on the learning that occurred during the service.
- It should foster personal growth of the student.
- Is developed by partnering with a teaching institution and a community based organization or non-government organization (NGO).

Using the above goals and objectives I have developed a number of service projects for my students during the past several years. I am a Chemistry professor at a small liberal arts university and I faced the challenge of incorporating service learning in my chemistry courses as well. After two workshops and some setbacks I developed some projects. Some of these projects are still dependant on the proactive nature of the student. I have learned that service learning is a personal choice and cannot be forced on anyone.

- 1) In the freshman chemistry course: Every year I provide the opportunity for a community outreach activity for my students. After the activity they have to write a reflection paper on their personal growth, relevance of the project and how they thought their work made an impact on the audience. One example of the community outreach my students do is National Chemistry Week, which is part of the American Chemical Society's chemistry awareness week in October. The students are responsible for:
 - a. Designing their activity around the theme of the year.
 - b. Choosing an experiment that can be done with readily available materials.
 - c. Writing up his or her experiment so it can be performed by anyone, anywhere.
 - d. Performing their experiment at the designated time and location.
 - e. Writing up a reflection paper as indicated above.
- 2) Another option in the chemistry curriculum: Students sign up to work with a local elementary school class in providing them with science related activities for one semester. This usually turns out to be about four visits to the classroom during the semester. Students independently:

- a. Identify the need of the specific science literacy in the class they are visiting.
- b. Design the experiments they want to demonstrate and want the kids to participate in.
- c. Collect all the materials they need, from lab or elsewhere.
- d. Prepare any handouts they want to give to the kids and teachers.
- e. Choose the day they want to go for their activity.

All during this time I meet with them regularly to help or guide them. They keep a journal of all their activities before and after the visit to the school and experiences after the visit.

- 3) A general option in any course: I work with the local Synergy Services agency, which provides a safe place for runaway or abused children and women, in providing them with students who can be mentors to teenage kids for at least one semester. Students typically keep a journal of their visits and experience as part of the grading criteria. This partnership is very successful when students can commit 8-10 hours per month for such mentoring. It is a rewarding experience for both the mentor and the protégé.
- 4) Internationalizing the service experience: In the recent years Park University has been trying to provide diverse international experiences for its students. As part of that global education initiative I helped develop a service project in Recife, Brazil. I visited a low income community in Recife and on speaking to the women there on health issues, I found that there was a need for information on some very general health topics: personal hygiene, blood pressure, heart disease, diabetes, first aid treatments. The following year Park visited the community again and we came with seven nursing students who prepared handouts and presentations on the topics the women had needed information on.
- 5) Collaborative international service experience: This project was carried out in Hawaii. Even though Hawaii is one of the states of USA, its diversity of ethnicities make it almost international. We, from Park University, collaborated with four universities including two in Hawaii to develop this project. Ten students from the five institutions were selected, and went to work in Palolo Valley, a low income housing community in Honolulu. The students tutored kids in the elementary school and talked to community members about their health needs. Based on the information obtained from these members, the students designed a brochure/handout to give to the kids on certain issues (e.g. head lice, bed bugs, meth-ice, tuberculosis and personal hygiene) and developed a web site to further disseminate the information.

In all the projects mentioned above the students were self-motivated and volunteered to be part of something other than the regular curriculum of chemistry or business major. They were all determined to make a difference and ended up learning about themselves, the community, some issues in a global aspect and in the international projects, experience a different culture.

Examples of some discipline specific projects

Chemistry and Environment:

- 1) Gain an understanding of how individuals in a community can conserve energy/water, thus providing an energy/water audit for a low income housing community.
- 2) Understand hygiene conditions of a community and provide them with solutions.
- 3) Monitor water and air quality through chemical testing and provide reports for taking any action if needed.

Technology/Bridging the Digital Divide:

- 1) Provide computer training in a community.
- 2) Develop web sites for small businesses.

Business:

- 1) Write business plans for organizations.
- 2) Fill out tax forms for the elderly or needy.
- 3) Develop a training manual or procedure handbook for an agency.

Our role as professors should be to provide students with the basic skills of the subject matter and allow them to think outside the box and apply their knowledge in a real world setting.

- This provides an arena for ethical and civic discussion, and opportunity for teamwork. At the end of the project the student can take ownership of their work and say, “I did this – I can make a difference”. This eventually leads to increased self-esteem and self-confidence.
- Students learn about larger social issues in the society, e.g. immigration patterns, role of government and non-government organizations in a community, discrimination and psychological factors leading to human behavior.
- Increase in academic understanding. This is based on the area of specialization the student has. Since most service learning is based on the specific discipline, there is an increased

learning of the subject as applied to the society. There is also an increased learning of communication skills, both written and oral.

In conclusion, service learning benefits everyone: the student, the teacher and the community. It fosters a partnership, which if maintained properly, can have lasting positive effects on everyone.

For more information and web resources visit:

<http://captain.park.edu/chemistry/servicelearning.htm>

About the author: Dr. Sapna Gupta is an Associate Professor at Park University. She obtained her Bachelors and Masters from Meerut University, India and then Ph.D. in Chemistry from University of Toledo, Ohio, USA. She joined Park University in 1996, after one year of post-doctoral work at Roswell Park Cancer Institute, Buffalo, NY and one year at University of British Columbia, Vancouver, Canada. Dr. Gupta has been actively involved in professional organizations: American Chemical Society (Chair of National Chemistry Week in the Kansas City section and currently the Chair-elect of the Kansas City section), American Association of University Women (Members VP of the Parkville branch) and Association of Women in Science. She has received awards for teaching, internationalizing curriculum and community work from Park University and American Chemical Society. Dr. Gupta has presented several papers and organized symposia at professional conferences during the last ten years. She has been innovative in her teaching and incorporated new pedagogies, e.g. diversity, technology, service learning, active learning etc, in her teaching and developing new courses. She received a number of grants to organize camps to promote science education and leadership for girls.