

article:1328**Service-Learning in Engineering - A Valuable Pedagogy for Meeting Learning Objectives**

This study was motivated by our interest in using educational research methods to document the successful use of service-learning in the engineering classroom. We believe that this work is important because engineering educators want tangible proof that service-learning works in an engineering setting; though descriptive studies have been published in this area, there is dearth of research-based focus in this area. Service-learning is an educational practice that has been successfully used in many disciplines, and is defined as “a credit-bearing, educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility” (Bringle and Hatcher, 1995).

This research examines a first year biological engineering design course that incorporated a service-learning project. Students participated in a survey and in focus groups to explore how well the service-learning project helped them to meet EC 2000 a-k objectives. The quantitative and qualitative components of the data were analyzed separately and then compared to determine trends. Results of the survey were analyzed using SPSS 10.0. The data was also analyzed for any trends in the responses by gender and race. Results showed that the service-learning project was a useful teaching method for accomplishing the learning objectives set forth by the instructor and by ABET.

It is important to note that in this study, students’ assessments of their learning correlated well with the learning objectives for the course set forth by the instructor and articulated in the course description. These learning objectives corresponded with the following ABET objectives: the ability to design a system or process; to solve engineering problems; to communicate effectively; and to understand the impact of engineering in a global and social context. The objectives that students rated as not important in their experiences are also critical to note, because students’ assessments of their learning matched the instructor’s goals.

Women and non-White participants in this study generally assessed their learning outcomes to be greater than White males, which could have important implications in the recruitment and retention of such students in engineering. Future research in this area should include assessing the effectiveness of service-learning for professional work, determining if participating in a structured service experience leads to students being more likely to be involved in service activities as professionals, and further examining the use of service-learning for recruiting and retaining women and minorities in engineering.

The authors acknowledge the Louisiana Board of Regents LaCEPT (Louisiana Collaborative for Excellence in the Preparation of Teachers) program for funding this study and Jan Shoemaker and the LSU Center for Community Engagement, Learning, and Leadership for information, resources, and support for this project.

Reference

Bringle, R. and Hatcher, J. 1995. *A Service-Learning Curriculum for Faculty*. Michigan Journal of Community Service-Learning, 2: 112-122.

Author 1: Becky Ropers-Huilman broper1@lsu.edu

Author 2: Laura Carwile Aaron lollylu68@hotmail.com

Author 3: MaryBeth Lima mlima@gumbo.bae.lsu.edu

Article Link: <http://www.tandf.co.uk/journals/tf/03043797.html>

[: Back to 2006 Winter Issue Vol. 2, No. 1](#)

[: Back to List of Issues](#)

[: Back to Table of Contents](#)