CASE STUDY
PACE UNIVERSITY

Civic Engagement Through Computing Technology

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Pace University, a four-year private institution, seeks to fulfill its mission of *opportunitas* (opportunity) by collaborating across constituencies, both internal and external, thereby creating an "engaged campus." The roots of Pace University's Seidenberg School of Computer Science and Information Systems' (SSCSIS) civic engagement involvement stem from a U.S. Department of Education, National Workplace Literacy Program grant in 1990 received by Dr. Susan Merritt, Dean of SSCSIS. Simultaneously, the personal computer was revolutionizing the way work was done, and there was a growing concern that the lack of access to and knowledge of the computer was creating a digital divide. Already disenfranchised members of our community were powerless and becoming further removed from mainstream opportunities.

The grant provided the framework for SSCSIS faculty to partner college students learning to use computers for the first time with community clients who did not have access to computers or knowledge of their usefulness. What started as an experiment 17 years ago has evolved into a program that has transformed the core curriculum first-year experience. Ten years ago, hands-on experiential-based education was limited to vocational or career education. Now, introductory computing and technology courses, a part of the core discipline, are being taught as civic engagement courses, actively involving students in the learning process. The application of learning is no longer limited to campus or laboratory simulations. In the community, this application addresses the digital divide, as described by Natriello: "Committing resources to address the access divide, whether from governmental or private sources, may lead to a speedier solution to the more visible divide, the problem of disparities in access, at the cost of intensifying the less visible problem of disparities in use" (2001, p. 261). Furthermore, Pace is presently one of the only institutions in the U.S. where all students must take a three-credit civic engagement course as part of the core curriculum. One way the University achieves these goals is by participating in Project Pericles, an initiative that includes (as of 2007) 22 colleges and universities. Project Pericles, funded by the Eugene M. Lang Foundation, is a national initiative whose mission embraces "the preparation of students for active participation in an expanding, pluralistic society in which citizenship, social responsibility, and community are inseparable" (http://projectpericles.org/).

In 2002, civic engagement officially became part of the Pace University core curriculum. *The Computers for Human Empowerment* course, which has been running since 1990, was a natural to fulfill this core requirement. All SSCSIS civic engagement courses were designed to accommodate first-year students, thereby providing a means to apply theory they were learning in the classroom to practical experience.

Civic Engagement Course Offerings in SSCSIS

Each of the courses is described in its own case study on the monograph Web site: http://csis.pace.edu/servicelearning/casestudies/

The Computers for Human Empowerment course, designed for first-year students, emanated from the grant described in the previous section. This course partners students in an introduction to computing course with clients from not-for-profit agencies to develop computer literacy skills. It remains the hallmark service-learning course offering of SSCSIS. *Web Design for Non-Profit Organizations* is the second course offering. This course provides training and hands-on experience in the implementation aspects of Web page and Web site development in a non-profit paradigm. Students work in teams to develop Web sites that meet the specifics outlined by a non-profit agency. Design considerations include navigation techniques, audience needs, browser platform concerns, and connection speeds. A combination of current scripting/programming languages and Web page authoring software are used for topics such as building, formatting, enhancing, and publishing pages; maintaining a Web site; creating and manipulating graph-

ics; and incorporating style sheets, JavaScript, or Java Applets. To date, students in this course have developed over 105 Web sites for agencies, including the UN, NYC 2012 Nations of New York Project, and the Westchester Philharmonic.

The *Problem Solving Using LEGOs* course is our third civic engagement offering. This class introduces students to basic problem solving and project management techniques, which can be applied to building, programming, and managing the creation of robots using the LEGO Mindstorms Robotics Invention System. For the second half of the semester, students work with small teams of middle school students to build robots and use computers to program them to solve challenges. This class prepares interested middle school teams to participate in robotics competitions, such as FIRST LEGO League.

A fourth course, *Networking Technologies*, assists non-profit and community-based organizations in installing, troubleshooting, and supporting wired and wireless computer networks. Sample projects in this course are refurbishing donated, used computer equipment and supporting network-enabled printers, scanners, digital cameras, and other peripherals. Clients have included senior centers, adult daycare facilities, and geriatric centers.

Intergenerational Computing is the latest course to be added to the SSCSIS repertoire of civic engagement courses. In this course, students are introduced to the world of seniors living in assisted-living environments and bridge the generational gap associated with using technology. Students learn various assistive technologies and help seniors use these technologies to communicate with family and friends and access vital information.

All SSCSIS service-learning courses include a structured reflection component to enhance student learning.

Assessment

To date, SSCSIS has offered over 70 sections of civic learning courses to more than 1,500 students, serving approximately 733 clients from numerous agencies and creating more than 200 Web sites. Approximately 30% of these students are first-year students. Enrollment in these courses has consistently been strong, and feedback from all stakeholders has been outstanding.

Assessment in SSCSIS civic engagement courses is a two-layered process: (1) assessment of technology theory and concepts and (2) assessment of the service-learning component. SSCSIS faculty approach assessment in these courses very creatively, using a variety of traditional assessment methods to gauge student learning of technology theory and concepts-observation, tests, and projects, for example.

After students have gained *competence* and *confidence* in technology theory and concepts in the first part of the course, they apply what they have learned by teaching and working with community partners, while learning to be attentive and responsive to their needs. Assessment of this component in all civic engagement courses involves students maintaining reflective journals, creating portfolios, and making presentations of their work to showcase what they have accomplished in the course. These activities not only furnish evidence for faculty but impact students positively by providing a means for them to share and reflect on their learning.

Assessment is ongoing, using Kirkpatrick's (1994) evaluation model. The learning domain is but one component in his paradigm. Because these courses are a new experience for Pace students, feedback on the reaction domain (students' perceptions of the value of the course) is gathered through embedded assessments on the Web mid-semester and at the end of the course. In this way, assessment is both formative and summative, shaping the course in progress and future iterations of the course.

Pace faculty also gather feedback from community partners to assess student participation and partners' reactions to their experiences. The outcome for community partners can be pride in the creation of a Web site, the building of a résumé, or the acquisition of a job. In Problem Solving Using LEGOs, the outcome can be competing in a team at the annual LEGO tournament.

Civic engagement courses in Pace's core have also opened new opportunities for non-technology majors, who are introduced to technology and civic engagement early in their academic experience. Outcomes include bridging the digital divide, empowering students and community partners, and invigorating students to continue community service after graduation.

Supplemental Materials

To view supplemental materials, including course syllabi, please visit: http://csis.pace.edu/servicelearning

References

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II. Institutional Description

a. Pace University, New York, NY, and campuses also in Pleasantville, and White Plains, NY
b. Four-year
c. Private
d. 6,007 FTE undergraduate students, campus-wide; 951 first-years
e. 2,386 are residential, of whom 787 are first-years; 3,621 are commuters, 164 first-years.