PORTABLE COMPUTERS FOR STUDENTS

Universal Access at Berea College
Progress Report

October 2003

By Phyllis Hughes, Director of Development for Foundations and Capitol Projects

(assessment update by Judith Weckman)

Berea College's Technology-Rich Environment

In fall 2002, Berea College achieved full implementation of its "Universal Access" program by providing *every student with a portable computer*. The portable computer program and universal access are important elements in achieving Berea's contemporary mission to offer a high quality liberal arts education to promising low-income students. Further, in our strategic plan, *Being and Becoming*, the College resolved to remove barriers to using instructional technology effectively, specifically by providing students with portable computers and extending the network into classrooms, residence hall rooms, and all across the campus. The College has created what we think of as a technology-rich environment. Below are some of the prominent features of that environment.

- In 1997, the College began a $3.6 million upgrade of the campus network backbone, which now consists of a very fast gigabit-speed fiber optic backbone. All classroom and administration buildings are on the campus network with 10/100MB Ethernet connections available in most classrooms and offices. Consequently, the more than 7,000 network connection ports in classrooms, the library, administrative buildings, public spaces, and residence halls, make it possible for students and faculty to use their portable computers to access information resources 24 hours a day.

- Among the support services provided by Information Systems and Services (IS&S) is the Help Desk. Staffed by four full-time persons and several student workers, Help Desk staff troubleshoot, solve various problems, and provide hardware and software training.

- The IS&S Service Center provides additional specialists to support expanding technologies on campus. And, through an agreement with Dell, our laptops are self-maintained by IS&S staff and students. In return, Dell pays the College to do the warranty work.

- Through the Office Based Consultants program, key people in administrative and academic offices serve as on-the-job troubleshooters, backed up by the IS&S Service Center specialists.

- Technology-enhanced classrooms have increased as buildings have been renovated. More than 55 classrooms have built-in multimedia projection, sound, and capabilities for connecting laptop computers; 18 of those have full multimedia capabilities including DVD, CD, video, and enhanced sound.

- In addition to digital multimedia equipment, network connections have been brought to the individual student's desk – which requires attention to furniture configurations, ergonomics, power management, and network architecture. As buildings are renovated, more laptop classrooms will be brought on line.

- In the first year of the portable computer program, we experienced a 50% reduction in public printing. Students are provided a printing card at the beginning of the year, which they may recharge if needed.

The Berea College Faculty and Instructional Technology

Another important component in preparing for universal access was to provide teaching faculty with professional development opportunities in instructional technology prior to distributing laptops to the students. Here are a few of the highlights of faculty preparedness and ways of using technology effectively:

- Beginning in January 1999 the Teaching, Learning, Technology Initiative (TLTI) provided faculty many opportunities to explore instructional technology though seminars, workshops, and both individual and small group projects.

- As a complement to the TLTI program, laptops were issued to faculty to allow them to gain experience in using portable technology prior to the full implementation of the portable computer project. Almost all teaching faculty now use laptops, which are replaced every 2-3 years.

- For several years, the Teaching and Learning Luncheon series has given faculty opportunities to hear and see what their colleagues are doing in their teaching. The use of technology has dominated this series in recent terms, for example with presentations on the use of internet resources, using WebCT Vista, and many others.

- At a "poster session" in 2002, more than thirty professors described new ways they were using technology in their teaching.

- The College installed WebCT, a digital course management system, as the software provided to faculty and students for electronic discussion groups, homework assignments, resource distribution, and testing. Now more than 60 courses use WebCT with over 40 faculty members participating.

- In 2003, Berea College partnered with the Appalachian College Association (ACA) to share WebCT Vista with other member institutions of the ACA. This arrangement allows cost sharing, provides even greater capabilities in using the software, and facilitates collaboration with other ACA member schools.

Full Implementation of the Portable Computers for Students Program

At the beginning of the 2002-2003 academic year – after putting the infrastructure in place, preparing the faculty, and raising a significant portion of the needed funds – the College was able to distribute laptop computers to all 1,500+ Berea students. The following are among the critical steps in full implementation:

- Rather than choosing a low-end machine that can be used for little more than typing papers and checking e-mail, we selected a reasonably powerful laptop that will support most academic needs, giving professors confidence in the capabilities of the students' portable computers. After extensive testing of nine models for such factors as speed, portability, and battery life, Berea College selected Dell to be the supplier of the student laptops. Our package includes a 3-year warranty.

- During 2000-2001, we conducted a small pilot program in which approximately 50 laptops were issued to students who took a specific technology course. During 2001-2002, we ran a large-scale pilot with 400 students, enrolled in more than 60 courses representing almost every academic department. A broad spectrum of courses—from basic freshmen classes to advanced studies—was selected for the 2001-2002 large-scale pilot, which concluded in May 2002.

- In the 2002-2003 school year (and in subsequent years) all 1,500+ students, as well as non-degree seeking students, received laptop computers. The laptop computers are distributed in late August, shortly before and during the first few days of the fall semester. Students sign a Student Agreement, accepting reasonable responsibility for the computer. Each student receives instruction in basic operation of the computer and, before leaving the orientation session with their computers, connects the computer to the campus network to ensure connectivity and operability. Additional training on a variety of topics related to the effective use of laptop computers is also made available.

- Because our program is designed so that students take their computers with them when they graduate, the 2003 graduating class was the first class to take their laptop computers with them. Through negotiated agreements with several software companies, these laptops were well equipped with word processing, spreadsheet, database, presentation, Internet browser, and e-mail tools.

- In spring 2003 the first set of students received their upgraded computers. Unlike many colleges that give new computers to freshmen, Berea puts the most powerful and most up-to-date computers in the hands of upper level students. The computer students receive as they enter their junior year is the one they will take with them at graduation. If a student does not graduate from Berea, that computer is placed in the pool of slightly older computers that are distributed to freshmen and sophomores. This process ensures that upper level students have the most recent technology, and it also mitigates the cost of the program by making use of pool computers for four or more years.

Assessment of Universal Access

Working with the Director of Institutional Research and Assessment (OIRA), the Director of IS&S and other key staff, the Universal Access Assessment group has undertaken a systematic assessment program effort so that the College can determine the impact of the universal access program. This comprehensive assessment effort has enabled us to provide services, support, and training to meet identified needs, based largely on the data collected in our assessment. We have created an assessment plan that is on-going, dependent on broad-based involvement from various constituents (including students, faculty, administrators, and others), and examines evidence of learning from various sources. We have used survey instruments, faculty interviews, and formative assessments to evaluate training modules as well as global measures such as instructor evaluation results to judge the outcomes of the laptop initiative. We have been able to compare Berea to other institutions by using specific items on the National Survey of Student Engagement (NSSE) and the Cooperative Institutional Research Project (CIRP).

One of the underlying concerns in expanding our technology has been the "digital divide" that Berea students have faced in the past. Thus, we are quite interested in knowing whether such a divide persists with our new students and need to evaluate how well our students catch up or surpass students across the nation. With questions about access to personal computers and the Internet, the CIRP survey results suggest that Berea College freshmen are about 10% below national levels. However, the data suggest a substantial increase between 2000 and 2001 in those who have a computer and Internet access in the home. Interestingly, the data collected by NSSE, a web-based survey that included technology questions and was given to all first year and senior students last spring, indicates that Berea students are doing 5-10% better than other students in *engaging* technology – using technology to complete assignments, make presentations, to work in teams, and so on. For example, Berea seniors are 14% more likely than the national norm to use the institution's library website to obtain resources.

In the future, the assessment of the portable computers will continue by using the following strategies and processes:

- Data will be collected from students and faculty on such broad categories and issues as these:
    - Technology needs – what enablers are needed for using technology effectively (hardware, software, networking, etc.)?
    - Service and support – what additional support and service do students and faculty need?
    - Skills – what skills and knowledge do students and faculty possess and what training is needed?
    - Digital divide – how do incoming Berea students' skills in using technology compare with students from other areas?

- We examine the extent to which faculty use technology to:
    - Communicate with students
    - Create classroom presentations
    - Do on-line testing
    - Get feedback on teaching
    - Enhance research
    - Facilitate collaborative group work

- We will continue our one on one interviews with faculty to explore questions such as:

    - To what degree is the prevalence of portable computers making a positive impact on so-called "habits of mind" that are highly valued in a liberal arts education?
    - Have universal access and technology improved the quality of learning?
    - How has technology affected faculty scholarship and knowledge about pedagogy?
    - Where should we spend scarce resources – identifying "what's next" in technology and what should be left behind?