THE CAMPUS COMPUTING PROJECT

The 1995 National Survey of Desktop Computing in Higher Education

Technology Use Jumps on College Campuses

The use of information technology in college courses — including electronic mail, multimedia, CD-ROM, commercial courseware and computer simulations — grew dramatically this past year, as did the number of students and faculty routinely using the Internet and World Wide Web (WWW). According to the 1995 Campus Computing Survey, the percentage of college courses using e-mail and multimedia resources more than doubled, while the use of computer simulations and commercial courseware increased by more than 50 percent. The data also suggest that more than seven million college students and faculty regularly use the Internet and WWW.
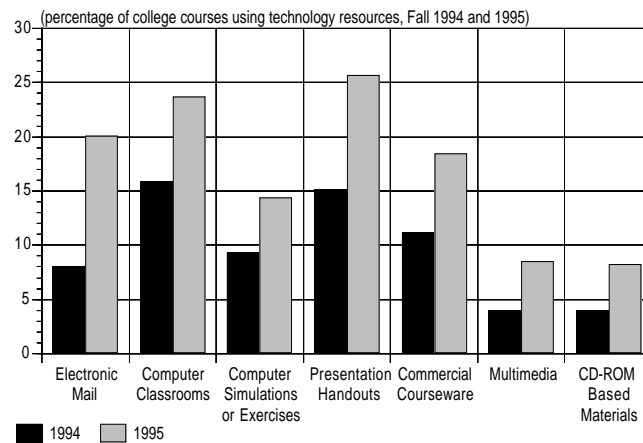
"Something very significant is happening," says Kenneth C. Green, director of the national survey and a visiting scholar at The Claremont Graduate School. "Following several decades of great aspirations and more than a dozen years of significant institutional investments, information technology has emerged as a permanent, respected, and increasingly essential component of the college experience." The survey data, states Green, "indicate that

the use of information technology in instruction is finally moving past the early adopters and breaking into the ranks of mainstream faculty." The gains occur across all types of institutions.

Using Technology in the Classroom

(percentage of college courses using technology resources, Fall 1994 and 1995)

Legend: ■ 1994 □ 1995

Categories: Electronic Mail, Computer Classrooms, Computer Simulations or Exercises, Presentation Handouts, Commercial Courseware, Multimedia, CD-ROM Based Materials

Campus Web Sites

(percentages, Fall 1995)

Categories: All Campuses, Public Univ., Private Univ., Public 4-Yr. College, Private 4-Yr. College, Community College

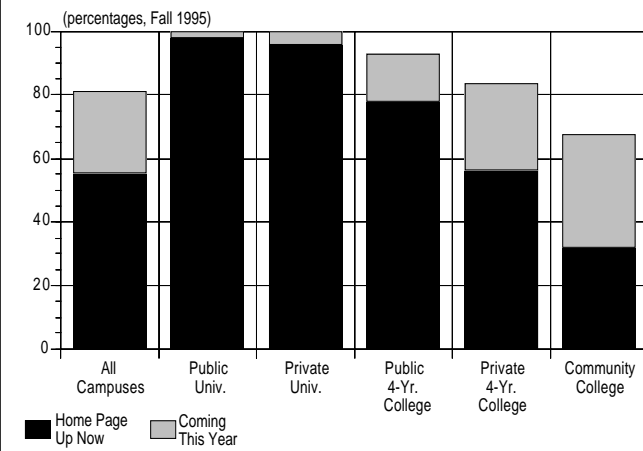Legend: ■ Home Page Up Now □ Coming This Year

The 1995 survey suggests that upwards of half of all of college students and faculty now have some sort of recurring instructional experience with information technology resources and technology-based learning activities. Green reports that these technology experiences go beyond the routine use of word processing (at one end of the continuum) and the technical expertise of computer programming (at the other); rather, these are technology experiences that extend the content of the syllabus, enrich classroom discourse, promote communication among class participants, and enhance the learning opportunity.

"The much discussed 'technology revolution' — in reality the slow, gradual movement of information technology resources into the curriculum and classroom experience — is picking up speed," notes Green. "Growing numbers of college students expect a technology component in their courses; across all disciplines, growing numbers of faculty are utilizing technology resources to enhance the curriculum." He adds that the rising use of technology resources

points to real demand for quality commercial products: "The survey data bode well for individuals and companies interested in providing digital curriculum for higher education: college publishers, entrepreneurial faculty, and small firms specializing in the educational market."

Not surprisingly, the use of the World Wide Web is growing rapidly on college campuses. More than half (55.2 percent) of the institutions participating in the 1995 survey report a WWW home page; still more campuses (25.8 percent) plan to raise an institutional flag in cyberspace during the current academic year. Public and private research universities and other institutions with a well-developed technology infrastructure are most likely to have home pages on the WWW.

Green reports that more than half of all college students and upwards of three-fourths of all faculty have access to the Internet and the WWW. "The campus market currently accounts for more than seven million Internet users — students, faculty, administrators, and staff who have access to cyberspace," says Green. "Many routinely use the Internet and WWW in their daily activities." He compares the seven million campus-based Internet and WWW users with a recent, widely cited commercial market report suggesting some 9.5 million Internet users in the United States. "Commercial and consumer market studies may miss the huge numbers of faculty and students who use, indeed, depend on the Net," says Green. "Higher education was an early adopter of the Internet and, more recently, an important advocate for the Web. Across the country, Net access is viewed by more and more faculty and students as both a core resource as well as a basic right, similar to a library card."

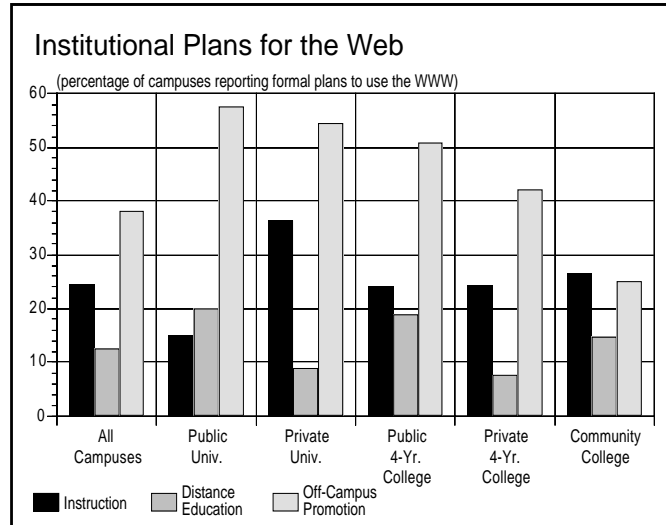The 1995 data indicate that about six percent of all college courses currently tap into Web-based resources to support instruction. Three-fourths of the respondents (76.5 percent) indicate that "providing Internet/

Institutional Plans for the Web

(percentage of campuses reporting formal plans to use the WWW)

Legend: Instruction (black), Distance Education (gray), Off-Campus Promotion (light gray)

WWW training" will be a "very important" computing priority for their campuses over the next three years. Similarly, three-fourths (75.1 percent) report that Netscape, a widely used Internet browser, will be "very important" in their campus technology planning. Using Internet resources for instruction is a "very important" priority for more than two-thirds (71.5 percent) of the responding campuses, while more than half (50.3 percent) view Web pages for individual classes and courses as being "very important" over the next two-three years.

Although the WWW plays an interesting and increasingly important role in instruction and scholarship, many colleges and universities also recognize the Web as part of a digital public presence intended for off-campus clientele. The 1995 survey data indicate that colleges and universities are more likely to focus their institutional plans for the Web on promotion to off-campuses audiences (38.1 percent), rather than instruction (24.4 percent) or distance education (12.5 percent). Target audiences for these initiatives typically include prospective students, alumni, news organizations, and potential donors.

Green comments that the focus on

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off-campus audiences can be explained by two factors. First, campus officials typically hesitate to intervene directly in instruction. Consequently, an institutional mandate defining the role of the Web in instruction would be seen on many campuses as an intrusion into traditional departmental and faculty prerogatives to set program priorities and define pedagogical strategies. While growing numbers of faculty and academic departments want (and increasingly expect) institutional support for these efforts, few will readily accept institutional imperatives.

Second, as Internet access and Web use grows rapidly among the general population, institutional officials are increasingly concerned about look, feel, and content issues affecting a campus Web site. In essence, growing numbers of campus officials recognize a Web site as a marketing tool and a competitive presence that can provide information and services to important off-campus constituencies.

Like their corporate counterparts, colleges and universities appear cautious about embracing Microsoft's Windows 95. Less than a quarter (23.3 percent) of the campuses participating in the 1995 survey support or recommend Windows 95 as of fall 1995, although more than half (56.8 percent) indicate that Windows 95 will become very important in their computing plans and strategy over the next two or three years. At many institutions, the slow transition to Windows 95 reflects concerns about significant migration costs: the need for new applications software, faster and more powerful computers, and additional demand for user support.

Indeed, user support issues now present a major financial and technological challenge for most institutions. Replacing aging equipment,

Over the Next 2-3 Years
User Support Priorities and Concerns

(scale: 1=not important; 7=very important)

updating obsolete software, supporting the migration to Windows 95, and providing training for faculty and students eager to explore the Internet and the WWW are the top institutional priorities, according to the 1995 survey respondents.

Rating the Technology Infrastructure

(percentage rating infrastructure as "excellent")

In the context of user support, one-fourth of the respondents (24.3 percent) assess the overall campus technology infrastructure at their institution as excellent. Less than a third (31.3 percent) rate networking and data communications very highly; less than a third (29.3 percent) also rate

their telecommunications system highly. Cable and video capacity receive the lowest ranking: only one-eighth (12.9 percent) of the respondents rate their campus as "excellent" in this area. Research universities are most likely to give high marks to the campus network: over half (57.5 percent) of the public universities and more than a third (36.4 percent) of the private universities rate this part of the technology infrastructure as excellent. Video and cable generally receive low marks across all campuses.

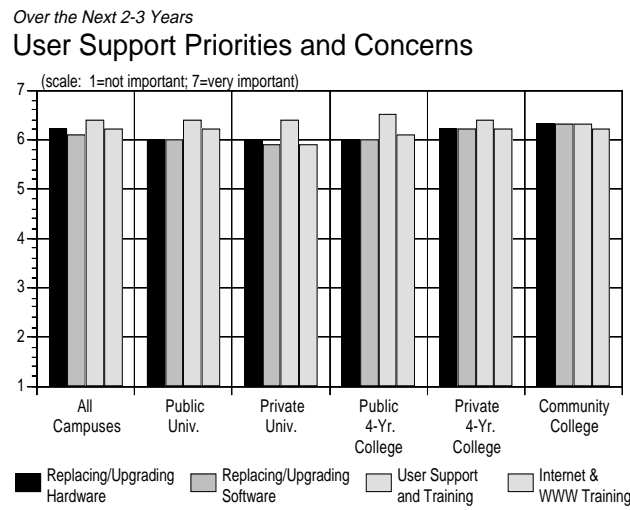"Infrastructure helps foster innovation" says Green. "One key element of the technology infrastructure is a well-developed campus network; a second is the telecommunications system. Other important components include desktop computers with CD-ROM drives, the routine upgrading of hardware and software, multimedia-capable computers in faculty offices and student labs, and technical support to help students, faculty, administrators, and staff make effective and productive use of the technology."
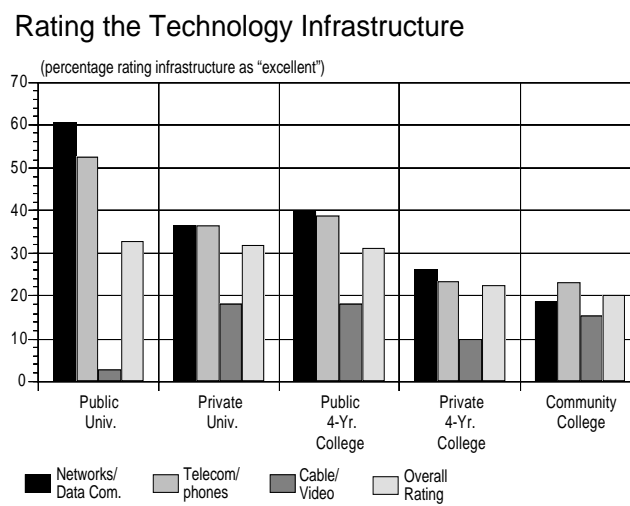
Green comments that replacing aging equipment and improving the technology infrastructure is a pressing issue for many colleges and universities. "Given the explosive sales of computers into homes over the past two years, many students have better equipment in their dorm rooms and at home than they currently find in campus computer labs and clusters."

Public institutions are turning to mandatory user fees to help underwrite technology costs. Almost half of the public universities (47.5 percent) and public four-year colleges (44.0 percent) report a computer use fee for students. One-fourth (26.0

percent) of community colleges also have a mandatory technology fee. In contrast, just over an eighth of private universities (13.6 percent) and a sixth of private four-year colleges (16.7 percent) impose a computer fee on their students.

As noted in past survey reports, most campuses still do not have a financial plan for "acquiring and retiring" desktop computers. In fall 1995, a little more than a fifth (22.0 percent) report a budget model for amortizing and routinely replacing computers and software, up slightly from 15.9 percent in 1990. However, the vast majority of colleges and universities (78.0 percent) continue to fund much of their equipment purchases and software upgrades with one-time budget alloca-
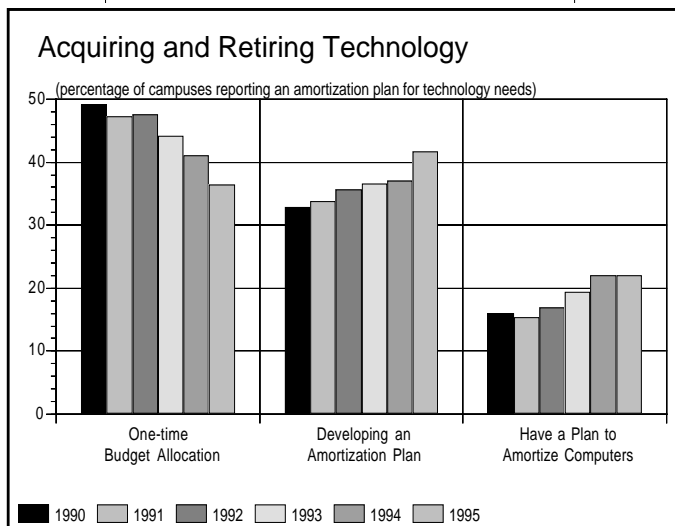
tions or special appropriations.

"The survey data reflect the continuing problems colleges and universities have in developing a viable

Acquiring and Retiring Technology

(percentage of campuses reporting an amortization plan for technology needs)

| 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |

financial plan for their technology needs" states Green. "The useful life of the desktop computers and accom-

panying software is a known factor, roughly 15 months for many core software applications and maybe 30 or 36 months for hardware. Yet rather than plan for the routine turnover of aging technology, institutions continue to find money rather than reserve funds."

The annual Campus Computing survey, now in its sixth year, is based on data provided by computing officials (typically the chief academic computing officer) at some 650 two- and four-year colleges and universities across the United States. Participating campuses completed the survey during fall 1995. Copies of the report are available from Campus Computing for $35 (postpaid; use coupon below).

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