



E D U C A U S E

CORE DATA SERVICE



# 2002 Summary Report

Brian L. Hawkins, Julia A. Rudy, and Joshua W. Madsen



EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology. Membership is open to institutions of higher education, corporations serving the higher education information technology market, and other related associations and organizations. Resources include professional development activities; print and electronic publications, including books, monographs, and the magazines *EDUCAUSE Quarterly* and *EDUCAUSE Review*; strategic policy advocacy; teaching and learning initiatives; applied research; special interest collaboration communities; awards for leadership and exemplary practices; and extensive online information services. The current membership comprises nearly 1,900 colleges, universities, and education organizations, including 200 corporations. EDUCAUSE has offices in Boulder, Colorado, and Washington, D.C.; [www.educause.edu](http://www.educause.edu), e-mail [info@educause.edu](mailto:info@educause.edu).

© Copyright 2003 EDUCAUSE

All rights reserved. No part of this monograph may be reproduced in any form without permission in writing from EDUCAUSE.

Art direction by Joseph Daigle, Studio Productions

# THREE

## Faculty and Student Computing

Section three of the core data survey captured data about campus computing support in general terms of services and infrastructure; specific support for faculty in the use of technology in teaching and learning; and student computing policy and infrastructure. Because of the increasingly widespread use of and interest in course management systems, data about these systems are highlighted separately.

### Campus Computing Support

Campus IT organizations provide common support services and infrastructure in support of the academic mission. It is this service environment that both allows students and faculty to do their work and supports the instructional mission of the campus.

The first dimension of this environment has to do with the availability of technological assistance on a campus. The help desk is critical in helping students and faculty overcome the hardware and software challenges that

might interfere with their using technology in learning or research efforts. As seen in Table 3-1, the amount of support provided at different classes of institution varies, with significantly more assistance available at doctoral institutions than other categories, more at masters institutions than baccalaureate or community college campuses, and so on. While there is much discussion about the need for support on an around-the-clock basis, with support available 24x7, these data tell us that this is not common practice.

A second dimension of campus support has to do with the availability of e-mail and specifically whether or not students are issued e-mail accounts for the purpose of receiving official campus communications. The ubiquity of e-mail access is important to understand, as this determines whether or not faculty and/or administrators can count on being able to reach all students in a particular class or all students on campus to inform them of policies, events, and so forth. As seen in Table 3-2, the

**Table 3-1**  
**Help Desk Availability**

	All	DR	MA	BA	AA	Other
<b>Number of hours per week the help desk is available</b>	66.5	82.5	68.8	58.8	53.9	62.2
<b>Percentage of campuses that have 24x7 support</b>	4.7%	13.4%	3.6%	0.0%	1.1%	4.2%

**Table 3-2**  
**Percentage of Institutions That Issue E-Mail Accounts to All Students**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Yes</b>	85.8%	91.0%	90.5%	94.0%	55.1%	87.5%
<b>No</b>	14.2%	9.0%	9.5%	6.0%	44.9%	12.5%

**Table 3-3**  
**Policy on Offering Universal Student E-Mail**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Never offered</b>	6.1%	3.6%	3.6%	1.5%	27.0%	5.2%
<b>Offered with no plans to discontinue</b>	87.4%	91.1%	91.1%	92.5%	53.9%	91.7%
<b>Offered but considering discontinuing</b>	2.7%	3.0%	3.0%	3.0%	5.6%	2.1%
<b>Already stopped offering</b>	3.7%	2.4%	2.4%	3.0%	13.5%	1.0%

**Table 3-4**  
**Percentage of Classrooms Equipped with Various Technologies**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Wired Internet Connectivity</b>	81.5%	78.6%	87.9%	84.2%	83.8%	68.1%
<b>Wireless Internet Connectivity</b>	17.7%	20.7%	18.0%	15.5%	19.6%	14.5%
<b>LCD Projectors</b>	39.0%	38.1%	37.4%	38.2%	38.6%	44.2%
<b>Computers</b>	31.0%	22.4%	31.3%	34.5%	36.8%	32.0%
<b>Televisions</b>	33.7%	23.9%	39.7%	32.4%	44.7%	28.4%

practice of providing all students an e-mail account is extremely common and fairly consistent for all Carnegie groups except for associate's colleges. This latter finding is probably due to the nature of these institutions, most of which are community colleges that serve diverse populations, almost all of whom are commuter students, and who are usually not long-term attendees of the institution.

Because of the number of students who already have e-mail accounts when they arrive on campus, some campuses have stopped offering universal e-mail accounts. The data in Table 3-3 help us understand what is happening with regard to such access, interpret the data in the previous table, and iden-

tify patterns in the different strategies being used by different types of institution.

The last dimension of general campus support is the extent to which technology is available in classrooms so that faculty and students can use electronic means for learning in their in-class experiences. The results appear in Table 3-4. The percentage of classrooms with wired Internet connectivity in our responding institutions is relatively high in all classes of higher education institutions, but it is somewhat lower for doctoral and "other" institutions. One likely explanation for the smaller percentage of wired classrooms in doctoral institutions is that they usually have very large inventories of classrooms, so even

**Table 3-5**  
**Types of Support for Faculty in the Use of Technology in Teaching and Learning**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Designated instructional technology center</b>	66.3%	87.3%	68.6%	48.9%	66.3%	57.3%
<b>Faculty teaching/excellence center that works with IT</b>	49.8%	60.4%	54.4%	31.6%	58.4%	43.8%
<b>Instructional designers who work with technologists</b>	51.7%	73.1%	52.7%	26.3%	51.7%	55.2%
<b>Instructional technologists who are discipline specialists</b>	17.6%	28.4%	11.2%	18.8%	13.5%	15.6%
<b>Intensive support for faculty using technology</b>	46.9%	51.5%	49.7%	44.4%	39.3%	45.8%
<b>Faculty training through scheduled seminars</b>	83.9%	92.5%	87.0%	77.4%	78.7%	80.2%
<b>Faculty training upon request</b>	88.9%	88.1%	95.3%	91.0%	92.1%	72.9%
<b>Activities for faculty who use technology</b>	67.1%	79.9%	73.4%	61.7%	56.2%	56.3%

though in absolute terms they probably have far more classrooms with this capability than other types of institutions, the percentage of classrooms with wired connectivity is smaller. We found the same pattern for the percentage of classrooms with an installed computer, and the same explanation is probably appropriate. There are no differences in the percentages of classrooms that have wireless connectivity or that have computer projection, with about one-fifth and two-fifths of the classrooms having these capabilities, respectively. Having a television in a classroom is most common in associate's colleges and least common in doctoral institutions.

### **Faculty Support**

If e-learning is going to become a reality in higher education, the extent of support for faculty to learn about and incorporate electronic capabilities into their courses will be a key factor in this transformation. Table 3-5 summarizes the data about a number of dimensions of faculty support, once again examining these

across the Carnegie groups and showing differences associated with the nature of the campus.

The most common form of faculty support—and this is true across all Carnegie categories—is that of providing training programs for faculty. There is some variation across Carnegie class as to whether the most common training is in the form of scheduled sessions or conducted on request. This difference is probably due to the scale of operations, with smaller schools offering training more on request and doctoral institutions having both the capacity for scheduled sessions and volume of demand to prompt this approach.

In recent years there has been an emergence of instructional technology centers to assist faculty in their use of IT in teaching and learning. More than 87% of doctoral institutions reported having established such a center, which is a significantly higher percentage than the other groups. More than half of the baccalaureate campuses reported not having such a center. This same pattern holds for the question of whether the campus unit responsible for facul-

**Table 3-6**  
**Percentage of Students Reported To Be Using Their Own Computers**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Mean</b>	51.3%	67.9%	54.1%	72.1%	12.4%	30.0%
<b>Median</b>	60.0%	80.0%	60.0%	80.5%	2.0%	10.0%
<b>Minimum</b>	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%
<b>Maximum</b>	100%	100%	100%	100%	80.0%	100%

**Table 3-7**  
**Average Percentage of Students Using Their Own Computers by Institutional Control**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Private Institutions</b>	70.1%	83.7%	63.1%	76.2%	30.0%	47.1%
<b>Public Institutions</b>	37.7%	60.2%	44.7%	39.7%	11.6%	25.6%

ty teaching and learning excellence works with the IT unit on campus. Again, this is most common for doctoral institutions and least common for baccalaureate schools.

On average, at about half of all institutions instructional designers work with the IT unit in the development of course materials. However, once again we find this practice significantly more at doctoral institutions (73.1%) and significantly less at baccalaureate campuses (26.3%). About half of respondents in all Carnegie classes reported providing faculty with intensive support for using technology. About two-thirds of all campuses reported that they provide and support activities for faculty who use technology, with that percentage increasing with institutional complexity.

The least common form of faculty support is providing instructional technologists who are also discipline specialists, with only 17.6% of all campuses reporting such support structures overall. However, this percentage is 28.4% for doctoral institutions, where one also sees the greatest tendency towards decentralized support as reported in Section One of this monograph. Having IT support personnel who also understand the nuances of a given field can provide exceptional value to faculty, but this is probably a relative luxury and affordable only at institutions with greater resources.

### **Student Computing**

The percentage of students using their own computers on campus varies as a function of Carnegie class, as shown in Table 3-6. Students are significantly more likely to have their own computers at a doctoral institution or a baccalaureate institution than the other categories, and least likely to have their own at an associate's college. While some of this difference can probably be attributed to the kinds of coursework demands that would require a computer, there may well be another factor working here. When the percentage of student ownership is examined in terms of institutional control—that is, public or private institutions—a very strong and statistically significant pattern emerges, as seen in Table 3-7. At private institutions, there is approximately a 20% greater level of student ownership than at public institutions within each Carnegie group. If a student is attending a private institution, there is some correlation with his or her relative affluence, even when financial aid is factored out, and hence there is probably greater means to afford the technology than for a student who is commuting from home to the nearby public institution. This finding, along with an intuitive awareness that a digital divide still persists on any campus, be it private or public, supports the premise that public access to equipment needs to continue to be offered or some students will be disadvantaged

**Table 3-8  
Policies on Student Computer Requirements**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>All students are provided a personal computer</b>	3.5%	.7%	3.6%	8.3%	.0%	4.2%
<b>Students in general required to buy/lease personal computers</b>	3.5%	8.2%	2.4%	.0%	2.2%	5.2%
<b>Students in some departments required to buy/lease PCs</b>	12.1%	24.6%	6.5%	3.8%	19.1%	9.4%
<b>PC buy/lease recommended but not required for all students</b>	32.5%	36.6%	39.6%	48.1%	.0%	22.9%
<b>PC buy/lease recommended but not required in some departments</b>	6.9%	11.9%	8.3%	1.5%	1.1%	10.4%
<b>No requirements or recommendations about PCs</b>	41.4%	17.9%	39.6%	38.3%	77.5%	47.9%

in using technology effectively in the pursuit of their academic goals.

Campuses vary greatly as to their requirements and expectations regarding student access to technology, as shown in Table 3-8. A higher percentage of doctoral institutions reported having some form of requirement, with this level of expectation decreasing in masters and baccalaureate schools and significantly lower in associate's colleges, with 77% of the latter group having no such requirements or expectations.

About 7% of all responding campuses guarantee computer access for all students, either by providing them with a machine or by requiring the student to buy or lease a computer. However, very different patterns characterize these two methods of guaranteeing access. The practice of actually providing a computer to all students, and embedding this cost into the price of the program, is found more in baccalaureate institutions (8.3%) and somewhat at comprehensive colleges (3.6%) in comparison to other institutions. The practice of providing a computer to all students is virtually nonexistent in

doctoral institutions or associate's colleges. It is interesting to note, however, that each of these practices was reported at all types of institutions, and by both public and private institutions, although there is a greater propensity for private institutions to require or recommend student ownership. About 8% of responding doctoral institutions require a student to purchase or lease a computer, with this practice less common in masters institutions and associate's colleges and completely nonexistent for baccalaureate campuses.

Overall, about one-third of all campuses recommend, but do not require, that all students have a computer. This is most common on baccalaureate campuses with nearly half having such a recommendation. The interesting finding here is that such a policy was not reported by a single associate's college responding to this survey.

An additional 12% of all campuses require that students in particular departments, disciplines, or courses of study have a computer. Again, we found very uneven patterns here, with about a quarter of all doctoral institu-

**Table 3-9  
High-Speed Network Connections Offered in Residence Halls**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Yes</b>	77.4%	99.3%	92.9%	95.5%	3.4%	63.5%
<b>No</b>	4.0%	.0%	1.8%	1.5%	11.2%	10.4%
<b>No Residence Halls</b>	18.5%	.7%	5.4%	3.0%	85.4%	26.0%

**Table 3-10  
Primary Technology of Network Connections in Residence Halls**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Ethernet</b>	94.2%	94.0%	93.6%	95.3%	100.0%	93.4%
<b>Cable Modem</b>	1.0%	.8%	1.9%	0%	0%	1.6%
<b>DSL</b>	.8%	1.5%	.6%	0%	0%	1.6%
<b>Wireless</b>	2.9%	3.0%	2.6%	3.9%	0%	1.6%

**Table 3-11  
Various Speeds of Residence-Hall Network Connections**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>10 Mbps</b>	34.6%	37.6%	36.5%	24.4%	.0%	45.9%
<b>10–11 Mbps</b>	4.2%	3.0%	5.1%	4.7%	.0%	3.3%
<b>10/100 Mbps</b>	42.5%	45.1%	37.2%	51.2%	66.7%	31.1%
<b>100 Mbps</b>	16.5%	11.3%	18.6%	18.9%	33.3%	16.4%
<b>&gt;100 Mbps</b>	2.3%	3.0%	2.6%	.8%	.0%	3.3%

tions having such requirements (most likely in engineering, technical, and business programs). Interestingly, this requirement was also reported by 19% of all responding associate’s colleges. This approach is least common in baccalaureate institutions, consistent with the philosophy of a baccalaureate degree being a generalist curriculum, focusing on a liberal education, and not vocational preparation. In addition to these, about 7% of all campuses reported having a policy that recommends—but does not require—having a computer within given departments, with this pattern being most common at doctoral and masters institutions.

Another dimension of student computing addressed by the survey is the level of support provided in the residence halls that house undergraduate students. See Table 3-9. More than 92% of all BA, MA, and DR institutions

reported providing high-speed network access in the residence halls, while only 63.5% of “other” schools did so. Only 3.4% of associate’s colleges reported having this service but this number is distorted because 85.4% of schools in this group reported not having residence halls. Even so, of the nearly 15% of associate’s schools with residence halls, fewer than a quarter of these reported providing high-speed access.

Nearly all schools, regardless of Carnegie class, use Ethernet connections (see Table 3-10). The speeds of connectivity reported are also consistent across types of schools, as seen in Table 3-11.

### **Course Management Systems**

A final discussion about student and faculty computing relates to the use of course management systems. The analysis here focuses on use and patterns of deployment, while a dis-

**Table 3-12**  
**Course Management System Practices**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Not deployed and no plans to deploy</b>	3.5%	.7%	2.4%	6.0%	1.1%	8.3%
<b>Planning to deploy one CMS or more</b>	4.3%	2.2%	2.4%	10.5%	1.1%	5.2%
<b>Support a single commercial CMS</b>	64.3%	56.0%	75.1%	66.2%	74.2%	44.8%
<b>Support more than one commercial CMS</b>	9.3%	15.7%	6.5%	3.8%	11.2%	11.5%
<b>Support a single homegrown CMS</b>	5.2%	5.2%	5.3%	3.0%	.0%	12.5%
<b>Support more than one homegrown CMS</b>	.6%	.7%	.0%	.0%	.0%	3.1%
<b>Employ a hybrid approach (homegrown and commercial)</b>	10.1%	17.9%	4.7%	6.0%	10.1%	14.6%

**Table 3-13**  
**Faculty Use of a Course Management System**

	<b>All</b>	<b>DR</b>	<b>MA</b>	<b>BA</b>	<b>AA</b>	<b>Other</b>
<b>Employed for all or nearly all courses</b>	12.6%	11.9%	13.0%	8.3%	11.2%	19.8%
<b>Used selectively by faculty</b>	80.0%	85.8%	81.7%	77.4%	87.6%	65.6%
<b>Faculty do not use course management systems</b>	7.4%	2.2%	5.3%	14.3%	1.1%	14.6%

cussion of the actual systems in use can be found in Section Five of this monograph. As illustrated in Table 3-12, over 90% of all campuses are using a course management system. Only 3.5% of all responding campuses have not deployed such a system and do not have plans to do so, with 4.3% planning to deploy a course management system but not having yet begun. About two-thirds of all responding campuses have implemented and support a single commercial course management system, with another 5.2% supporting a single homegrown system, while 9.3% support multiple commercial systems. More doctoral institutions reported supporting multiple systems than any other

Carnegie group. Finally, an additional 10.1% use both homegrown and commercial systems, with doctoral institutions again most frequently employing this approach.

Finally, we examined the nature and extent of faculty use of course management systems, as shown in Table 3-13. At the vast majority of campuses, faculty members use these systems selectively. It is worth noting that associate's colleges reported significantly higher use than all other groups, with only 1.1% of schools in this classification reporting that faculty do not use such systems. More than 12% of all responding campuses reported that these systems are employed for all or nearly all courses.