



Fiscal Year 2004 Summary Report

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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 types of institution varies, with significantly more assistance available at doctoral institutions than other categories and more at MA institutions than BA or AA college campuses.

While there is much discussion about the need for support on an around-the-clock basis, with support available 24 × 7, the CDS data tell us that this is not common practice, occurring at only 5.8% of ALL institutions that have help desks. In contrast, 5.8% of ALL institu-

Table 3-1
Help Desk Availability

	ALL	DR	MA	BA	AA	OTHER
Mean hours/week help desk is available at campuses with a help desk*	69.7	85.3	70.6	62.1	60.2	67.6
Percentage of campuses with a help desk that have 24 × 7 support*	5.8%	15.5%	3.7%	2.4%	1.8%	6.4%
Percentage of all responding campuses that have no help desk	5.8%	2.9%	2.1%	5.9%	15.1%	5.0%
* N = 779						

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

	ALL	DR	MA	BA	AA	OTHER
Yes	88.0%	93.7%	94.2%	96.4%	61.4%	91.4%
No	12.0%	6.3%	5.8%	3.6%	38.6%	8.6%

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

	ALL	DR	MA	BA	AA	OTHER
Never offered	7.3%	0.6%	2.9%	0.6%	28.9%	5.7%
Offered with no plans to discontinue	89.0%	97.1%	93.4%	96.4%	62.7%	93.6%
Offered but considering discontinuing	1.5%	1.7%	2.5%	1.8%	0.6%	0.0%
Already stopped offering	2.2%	0.6%	1.2%	1.2%	7.8%	0.7%

tions indicated that they did not have a help desk. No notable changes were observed between 2003 and 2004 with regard to help desk availability.

A second dimension of campus support has to do with the availability of e-mail, 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 practice of providing all students an e-mail account is very common, reported by 88% of ALL respondents, and fairly consistent for all Carnegie groups except for AA colleges, where the percentage of respondents reporting this practice was much lower than the others (about 61%). 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 not necessarily long-term attendees of the institution. There were no notable changes in these patterns since last year.

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 to understand what is happening with regard to such access, to interpret the data in the previous table, and to identify patterns in the different strategies used by different types of institutions.

Campus policies on providing universal student e-mail differ significantly across Carnegie classes, but overall more than 90% of respondents offer this access. Few DR, MA, or BA schools reported that universal student e-mail was never offered, and nearly all of the respondents in these groups (97%, 93%, and 96%, respectively) reported offering student e-mail with no plans to discontinue this practice.

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 campuses with classrooms equipped with wired Internet connectivity differed significantly as a function of Carnegie class, with MA, BA, and AA institutions all reporting significantly higher percentages of classrooms equipped with wired Internet connectivity than doctoral and

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

	ALL	DR	MA	BA	AA	OTHER
Wired Internet connectivity	86.5%	83.7%	90.9%	90.1%	88.4%	76.0%
Wireless Internet connectivity	33.5%	40.4%	35.5%	32.8%	27.1%	30.3%
LCD projectors	50.5%	46.2%	52.1%	50.3%	49.9%	54.4%
Computers	41.9%	31.5%	43.2%	45.0%	47.6%	42.1%
Televisions	31.7%	22.0%	34.5%	33.9%	39.8%	26.5%
Smart boards	4.6%	3.3%	4.9%	3.9%	6.0%	4.9%
Document projectors/systems/cameras	18.7%	17.5%	19.0%	15.2%	18.0%	24.6%

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 though in absolute terms they probably have far more classrooms with this capability than other types of institutions, the percentage of such classrooms is smaller. Looking at the matched data set, we found that wired Internet connectivity increased significantly since last year among all types of institutions except for the BA group.

While doctoral institutions reported a lower percentage of wired classrooms, they also reported the highest percentage of wireless connectivity in classrooms (about 40%). The percentage of classrooms equipped with wireless Internet connectivity increased significantly for schools in the matched data set, with increases occurring across all groups.

A difference across Carnegie groups for this year's survey was found with LCD projection. OTHER schools reported the highest percentage, on average, of classrooms equipped with LCD projectors, and that percentage was significantly greater than those reported by DR and AA schools. In addition, MA institutions reported a higher percentage than DR schools. Overall, looking at the matched data set, there was a significant increase (about 5%) over last year in this percentage, when the 2003 percentage was 6% greater than 2002, so there is continued movement in this area.

The percentage of classrooms equipped with computers was significantly lower on doctoral campuses as compared to all other Carnegie groups, as was the percentage equipped with televisions. Looking at the matched data set, the percentage of classrooms equipped with computers also increased for the second year in a row, this year by about 4%.

DR institutions reported the lowest percentage of classrooms equipped with smart boards, while AA institutions reported the highest. Schools in the OTHER category reported a notably higher percentage of classrooms equipped with document technology.

Faculty Support

If e-learning is going to become a reality in higher education, the extent of support provided 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.

Most types of support reported for faculty use of technology in teaching and learning differed significantly by Carnegie class. Doctoral institutions reported greater use than other groups of all but one practice, namely faculty training upon request, and this approach was present at the vast majority of campuses and

Table 3-5
How Faculty Are Supported in the Use of Technology in Teaching and Learning

	ALL	DR	MA	BA	AA	OTHER
Designated instructional technology center	73.4%	87.9%	75.1%	59.2%	74.7%	67.9%
Faculty teaching/excellence center that works with IT	56.0%	67.8%	60.2%	39.6%	57.2%	52.1%
Instructional designers who work with technologists	56.9%	77.6%	58.5%	35.5%	51.8%	60.0%
Instructional technologists who are discipline specialists	19.7%	28.2%	17.4%	19.5%	13.9%	20.0%
Intensive support for faculty using technology	51.9%	57.5%	55.6%	47.9%	49.4%	46.4%
Faculty training through scheduled seminars	87.2%	95.4%	92.1%	82.2%	89.8%	71.4%
Faculty training on request	93.6%	93.7%	98.8%	94.7%	93.4%	83.6%
Activities for faculty to share innovative ideas	71.9%	85.6%	79.7%	68.6%	62.7%	56.4%
Special grants/awards for faculty using technology	40.3%	50.0%	45.6%	33.7%	36.7%	31.4%

did not differ by Carnegie class. BA colleges reported using a designated instructional technology center, a faculty teaching/excellence center that works with IT, and instructional designers who work with technologists much less often than did the other groups.

Offering faculty training through scheduled seminars or upon request and activities for faculty to share innovative technology uses were reported least by OTHER campuses. Even among this group, more than 70% of schools offer faculty training through scheduled seminars, and almost 84% do this upon request. These two means of supporting faculty in the use of technology were the most commonly reported overall, with more than 87% and almost 94% of ALL campuses offering these services, respectively.

Employing instructional technologists who are discipline specialists was reported least, with only about 20% of ALL responding institutions employing this strategy. However, more than 28% of doctoral schools reported this practice.

Offering grants or awards to faculty to support innovative use of technology in teaching and learning was the second least reported strategy, with about 40% of ALL responding institutions employing this practice.

In comparing institutions in our matched data set, we saw an across-the-board significant increase at the aggregate (ALL) level for these different manners in which faculty are supported by technology in teaching and learning, with the exception of “instructional technologists who are discipline specialists.”

Student Computing

The estimated percentage of students using their own computers on campus differed significantly as a function of Carnegie class, as shown in Table 3-6. Doctoral and BA institutions did not differ significantly from each other, but both groups had a higher percentage than all of the other groups. In addition, the percentage of students reported to be using their own computers on MA campuses was significantly greater than

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

	ALL	DR	MA	BA	AA	OTHER
Mean	67.1%	81.5%	74.8%	80.3%	34.8%	58.1%
Median	80.0%	90.0%	80.0%	89.0%	30.0%	70.0%
Minimum	0.0%	0.0%	0.0%	8.0%	0.0%	0.0%
Maximum	100.0%	100.0%	100.0%	100.0%	91.0%	100.0%

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

	ALL	DR	MA	BA	AA	OTHER
Private institutions	80.9%	90.5%	79.1%	82.5%	41.8%	68.9%
Public institutions	59.4%	77.0%	70.7%	67.4%	34.7%	59.0%

for AA and OTHER colleges. A notable finding is the significant increase overall in student ownership from 2003 to 2004 among institutions in our matched data set, with the mean increasing from 64% to 67% and the median number increasing from 75% to 80%. This trend was observed and was statistically significant for every Carnegie group within the subset of schools that completed both surveys.

While some of the differences in student computer ownership can probably be attributed to 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 versus private institutions—a very strong and statistically significant pattern emerges, as seen in Table 3-7. At private institutions, there is approximately a 21% greater level of student ownership than at public institutions for ALL institutions. 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 a student who is commuting from home to the nearby public institution. This finding, along with an assumption that a digital divide still persists on any campus, be it private or public, supports the premise that public access to computers needs to continue to be offered or some students will be disadvantaged in using technology effectively in the pur-

suit of their academic goals.

Campuses vary greatly as to their requirements and expectations regarding student access to technology, as shown in Table 3-8. Only about 15% of doctoral institutions do not have any requirements or recommendations about personal computers, whereas more than 82% of AA colleges do not have such guidelines; intermediate percentages were observed among MA, BA, and OTHER institutions. More than 43% of doctoral institutions have policies requiring students in general or in some departments to buy or lease a PC. The percentage of schools recommending PC buying or leasing for all students, but not requiring it, was highest among BA colleges, with more than half of these schools reporting such a policy. Just over 43% of MA colleges and nearly 28% of doctoral schools endorsed this policy, which was virtually nonexistent among AA colleges.

The practice of providing all students with a personal computer is overall uncommon. It is rare at doctoral and MA institutions and nonexistent at AA colleges that responded to our survey. All students are provided a PC at about 5% of the BA colleges and OTHER schools responding to our survey. All of the practices remained relatively constant since last year.

Another dimension of student computing addressed by the CDS survey was the level of support provided in the residence halls that house undergraduate students. As seen in Tables 3-9 and 3-10, more than 94% of BA,

Table 3-8
Policies on Student Computer Requirements

	ALL	DR	MA	BA	AA	OTHER
All students provided a PC	2.5%	0.6%	2.1%	5.3%	0.0%	5.0%
Students in general required to buy/lease PCs	3.7%	6.3%	3.3%	1.8%	1.2%	6.4%
Students in some departments required to buy/lease PCs	13.6%	36.8%	9.5%	1.8%	6.6%	14.3%
PC buy/lease recommended but not required for all students	30.7%	27.6%	43.2%	51.5%	1.8%	22.1%
PC buy/lease recommended but not required in some departments	8.0%	12.6%	7.5%	3.6%	6.6%	10.0%
No requirements or recommendations about PCs	40.1%	14.9%	32.4%	34.9%	82.5%	40.7%
Other	1.5%	1.1%	2.1%	1.2%	1.2%	1.4%

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

	ALL	DR	MA	BA	AA	OTHER
Yes	76.6%	98.9%	94.6%	96.4%	12.7%	70.0%
No	2.8%	0.6%	0.4%	0.6%	5.4%	9.3%
No residence halls	20.6%	0.6%	5.0%	3.0%	81.9%	20.7%

Table 3-10
High-Speed Network Connections Offered in Residence Halls for Institutions with Residence Halls

	ALL*	DR	MA	BA	AA	OTHER
Yes	96.5%	99.4%	99.6%	99.4%	70.0%	88.3%
No	3.5%	0.6%	0.4%	0.6%	30.0%	11.7%

* N = 707

MA, and DR institutions reported providing high-speed network access in the residence halls, while only 70% of OTHER schools did so. Only 12.7% of AA colleges reported offering this access, but this number is distorted because about 82% of the schools in this group reported not having residence halls. Nearly all schools offering high-speed network connec-

tivity in residence halls, regardless of Carnegie class, use primarily Ethernet connections, and the speeds of connectivity reported are also consistent across types of schools, as seen in Tables 3-11 and 3-12.

This year's survey included a new question about a campus-negotiated service to provide online music and movies, in response to illegal

Table 3-11
Primary Technology of Network Connections
for Institutions Offering High-Speed Connectivity in Residence Halls

	ALL*	DR	MA	BA	AA	OTHER
Ethernet	92.8%	94.2%	91.7%	96.9%	71.4%	90.8%
Cable modem	2.1%	1.7%	3.1%	0.0%	9.5%	2.0%
DSL	0.9%	1.2%	0.0%	0.0%	4.8%	3.1%
Wireless	3.5%	1.7%	4.4%	2.5%	14.3%	4.1%
Other	0.7%	1.2%	0.9%	0.6%	0.0%	0.0%
* N = 682						

Table 3-12
Speed of Residence-Hall Network Connections
for Institutions Offering High-Speed Connectivity in Residence Halls

	ALL*	DR	MA	BA	AA	OTHER
10 Mbps	21.6%	29.7%	21.1%	12.3%	4.8%	27.6%
10–11 Mbps	2.9%	1.7%	3.5%	3.7%	4.8%	2.0%
10/100 Mbps	45.9%	45.3%	45.2%	49.7%	57.1%	39.8%
100 Mbps	26.1%	21.5%	27.6%	31.3%	19.0%	23.5%
> 100 Mbps	3.5%	1.7%	2.6%	3.1%	14.3%	7.1%
* N = 682						

Table 3-13
Campus-Negotiated Service to Offer Students Access to Online Music and Movies

	ALL	DR	MA	BA	AA	OTHER
Already offer	3.9%	10.3%	2.9%	4.1%	0.00%	2.1%
Plan to offer	1.8%	3.4%	3.3%	0.6%	0.00%	0.7%
Considering	18.8%	36.2%	23.7%	19.5%	2.4%	7.1%
No plans	75.5%	50.0%	70.1%	75.7%	97.6%	90.0%

file sharing and the undue attention that higher education has received in this regard. Overall, only about 4% of campuses currently offer such a service, but considering that the survey was conducted only 14 months after the first campus announced proceeding with such a service, this is not unimpressive. As shown in Table 3-13, about a quarter of ALL campuses currently offer, plan to offer, or are considering this option. A significantly greater percentage of campuses pursuing such a strategy are doctoral institutions, with only half of schools in this group not currently offering, planning to offer, or considering such a service, whereas about 70–75% of all MA and BA institutions do not plan to do so, and virtually no AA institu-

tions have any plans to do this. It will be interesting to follow the rate of adoption of such a service, depending on litigation or other action related to illegal file-sharing.

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 discussion of the actual systems in use can be found in Section Five of this summary report.

As illustrated in Table 3-14, more than 90% of ALL responding campuses reported using a course management system (CMS). Only 1.2% of ALL respondents have not deployed such a

Table 3-14
Course Management System Deployment and Practices

	ALL	DR	MA	BA	AA	OTHER
Not deployed and no plans to deploy	1.2%	0.0%	0.0%	1.8%	2.4%	2.9%
Planning to deploy one or more CMS	1.7%	0.0%	0.0%	5.3%	1.2%	2.9%
Currently reviewing options	4.7%	2.3%	2.5%	8.3%	4.8%	7.1%
Support a single commercial CMS	69.3%	63.2%	78.4%	68.6%	75.3%	55.0%
Support more than one commercial CMS	8.4%	13.8%	7.9%	4.7%	7.2%	8.6%
Support a single homegrown CMS	3.6%	4.0%	3.3%	4.1%	1.2%	5.7%
Support more than one homegrown CMS	0.4%	0.6%	0.4%	0.6%	0.0%	0.7%
Employ hybrid approach (homegrown and commercial)	8.4%	14.9%	5.4%	3.0%	6.6%	14.3%
Other	2.1%	1.1%	2.1%	3.6%	1.2%	2.9%

Table 3-15
Faculty Use of a Course Management System

	ALL	DR	MA	BA	AA	OTHER
Employed for all or nearly all courses	19.1%	17.2%	18.7%	14.8%	19.3%	27.1%
Faculty use selectively	76.5%	82.8%	79.7%	76.3%	74.9%	65.7%
Faculty do not use	4.4%	0.0%	1.7%	8.9%	6.0%	7.1%

system and do not have plans to do so, with 1.7% planning to deploy a CMS but not having yet begun and 4.7% currently reviewing options. Nearly 70% of ALL responding campuses have implemented and support a single commercial CMS, with another 3.6% supporting a single homegrown system and more than 8% supporting more than one commercial system. The use of more than one commercial CMS was reported most by doctoral institutions (13.8%) and least by BA institutions (4.7%). Over 8% of ALL respondents use both homegrown and commercial systems, with more doctoral institutions reporting employing this approach. The percentage of schools that support a single commercial CMS remained constant among ALL institutions

from 2003 to 2004.

Finally, we examined the nature and extent of faculty use of course management systems, as shown in Table 3-15. At the vast majority of campuses, faculty members use these systems selectively, with only about 19% of ALL responding campuses reporting that these systems are employed for all or nearly all courses. Among the institutions in our matched data set, the percentage of ALL institutions that reported employing a CMS for all or nearly all courses increased significantly from 2003 to 2004 (with the most dramatic changes occurring for MA institutions), and the percentage overall that reported not using a CMS decreased significantly over this time period, especially among BA schools.