

Roadmap

TOOLS FOR NAVIGATING COMPLEX DECISIONS

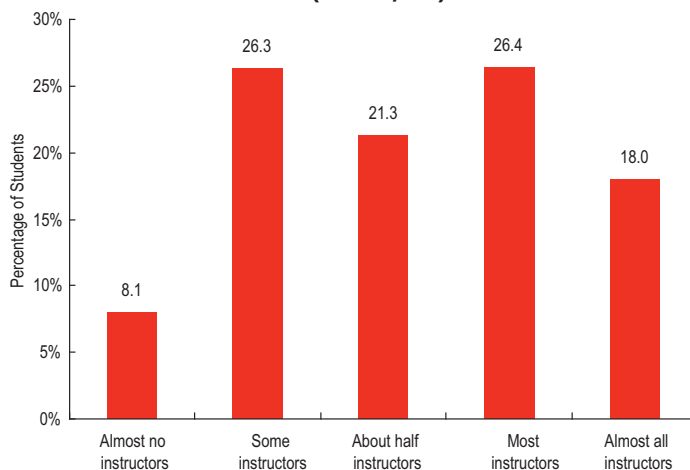
The ECAR Study of Undergraduate Students and Information Technology, 2008

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KEY FINDINGS

- ▶ Laptops are owned by 80.5% of the student respondents, and 71.1% of freshmen own a laptop less than one year old.
- ▶ Internet-capable phones are owned by 66.1% of respondents. About 18% of students use the Internet from their cell phones or PDAs weekly or more often.
- ▶ Fully 80% of students report that they are “very skilled” or “expert” at using the Internet to effectively and efficiently search for information.
- ▶ More than 85% of respondents use one or more social networking sites (SNSs). Of these, more than half (55.8%) spend 5 hours or less per week using them, and 26.9% spend between 6 and 10 hours per week.
- ▶ Half of SNS users use these sites to communicate with classmates about course-related topics; only 5.5% use them to communicate with instructors about course-related topics.
- ▶ Fully 44.4% of respondents report that “most” or “almost all” of their instructors use information technology effectively in courses.

How Many of Your Instructors Use IT Effectively in Courses?
(N = 26,102)



Information technology (IT) plays an increasingly significant role in the lives of today’s undergraduates, who use technology extensively in course, job, and recreational activities. Five years ago, ECAR launched the first study of undergraduate students and IT to obtain information about student IT behaviors and preferences—information that can inform the practices of teaching faculty and is useful to institutional leaders and technologists as they implement campus technology environments. Each year the study asks students about their ownership of, use of, and skills with technology, as well as their experiences with IT in their courses. Because of the increasing interest in and use of social

networking sites (SNSs) among undergraduates, the 2008 survey also included detailed questions about students’ use of and experiences with these sites.

This ECAR Roadmap synthesizes the results of 27,317 freshman, senior, and community college student responses from a spring 2008 survey and interviews with students at 98 higher education institutions as reported in The ECAR Study of Undergraduate Students and Information Technology, 2008 by Gail Salaway and Judith Borreson Caruso. It also compares the 2008 results with the results from the 2006 and 2007 ECAR studies.¹ To order the full study and learn about subscribing to ECAR, visit the ECAR website at <http://www.educause.edu/ecar> or contact us at ecar@educause.edu.

COMPARING 2006–2008 RESULTS

Among the 44 institutions that participated in each of the 2006, 2007, and 2008 studies, ECAR found...

- Increased ownership of laptop computers (65.9% in 2006, 73.5% in 2007, 82.2% in 2008)
- Decreased ownership of desktop computers (71.0% in 2006, 59.7% in 2007, 51.2% in 2008)
- Increased use of SNSs (74.8% in 2006, 83.1% in 2007, 88.8% in 2008)
- Increased daily use of SNSs (32.8% in 2006, 49.6% in 2007, 58.8% in 2008)

Technology Ownership, Access, and Use

As students indicated in previous years, computer ownership is almost universal: 98.5% of freshmen, seniors, and community college respondents report owning a computer. Laptops are the platform of choice, with 80.5% owning them and 71.1% of the freshmen owning laptops that are less than one year old. Two-thirds of respondents own Internet-capable cell phones, with an additional 5.3% planning to purchase one in the next 12 months. Almost 18% of respondents report using the Internet from their cell phone or PDA at least weekly.

Not surprisingly, students in the study report extensive use of technology for school, work, and recreation. They spend, on average, almost 20 hours per week doing online activities. Over 90% of them use the college or university library website and presentation software such as PowerPoint. Most students also use spreadsheets (85.9%), SNSs (85.2%), text messaging (83.6%), course management systems (CMSs) (82.3%), graphics software such as Photoshop or Flash (73.9%), and instant messaging (73.8%). Approximately one-third of students contribute content to wikis or blogs or use video- or audio-creation software. Younger students are the heaviest users of some social and communications technologies. For 18–19-year-olds, 87.3% use SNSs, 76.3% use text messaging, and 57.5% use instant messaging several times a week or more often.

Students' Technology Skills

In response to the survey, students provided a self-assessment of their technology skills using a 5-point scale (not at all skilled, not very skilled, fairly skilled, very skilled, or expert). They are most confident about their skills using presentation software, the college or university library website, spreadsheets, and CMSs, rating themselves between "fairly skilled" and "very skilled." They rate their computer maintenance and graphics software skills lower, between "not very skilled" and "fairly skilled." Respondents give themselves high marks when it comes to information literacy skills, with 79.5% rating themselves as "very skilled" or "expert" at using the Internet to effectively and efficiently search for information. When asked about their technology

adoption practices, just over half of students consider themselves mainstream adopters, with 35.4% considering themselves early adopters and 13.2% late adopters.

Information Technology in Courses

In each of the past three years' studies, student respondents report preferring only a moderate amount of IT in their courses. In 2008, 59.3% again say they prefer moderate IT in courses. However, there is a cadre of students who prefer extensive or exclusive IT in their courses (25.0%), as well as some who prefer limited or no IT in courses (15.8%).

ECAR also asked students which technologies were used in their courses at the time of the survey (February–April 2008). Students report that the college or university library website (67.7%) was the most used technology in their courses, followed by presentation software (63.5%). Many students used spreadsheets (43.3%). Seniors report higher usage of presentation software and spreadsheets in their courses. Between 10% and 20% of students used wikis, graphics software, SNSs, and instant messaging in their courses. Engineering students are the highest users of spreadsheets, programming languages, and discipline-specific technologies in their courses.

Very few of the study's respondents, who are predominantly traditional, full-time students, are enrolled in online courses. During the quarter or semester of the survey, only 2.8% of all respondents were enrolled exclusively in online courses, though an additional 11.9% were taking a mix of online and face-to-face courses. Part-time students report enrolling in more online courses, with 11.5% taking online courses only. When asked their level of agreement with the statement that "students would benefit if my institution required students to take at least one entirely online course," 46.0% of all respondents disagree.

This year ECAR asked students how they liked to learn with technology. Over three-fourths (80.2%) of the students report that they like to learn by running Internet searches, and 50.8% like to learn through programs they can control, such as video games and simulations. Students

METHODOLOGY

- ▶ A literature review to identify and clarify the study's major elements, including a review of past ECAR studies and other higher education IT student surveys.
- ▶ A longitudinal analysis of the data from the 2006, 2007, and 2008 ECAR studies of students and IT.
- ▶ A quantitative survey using a sample of freshmen, seniors, and community college students at 98 U.S. higher education institutions; 27,317 students responded. Respondents by Carnegie class were 46.5% Doctoral, 33.2% Master's, 5.3% Bachelor's, 12.2% Associate, and 2.8% Other. Respondents were 63.2% female, 84.0% attend school full-time, and 60.3% live off campus. Two international institutions participated but were not included in the study results.
- ▶ Interviews of 75 students in focus group settings at four institutions.
- ▶ Analysis of the 5,877 student comments in response to the survey's open-ended question.

identifying themselves as innovators or early adopters of technology have an even stronger preference for these modes of learning.

The great majority of students (82.3%) have used CMSs at some point in their college career. This usage remains the same as the 2007 level, which was up significantly from previous years. For the students who have used CMSs, 69.5% report a positive or very positive experience with these systems.

ECAR finds that 44.4% of student respondents perceive that “most” or “almost all” of their instructors use IT effectively in their courses. Fewer respondents think that their instructors understand the IT skill levels of their students, with 17.3% of students perceiving that “almost no instructors” understand students’ skills.

IT's Impact on the Academic Experience

In order to gauge student perceptions about which aspects of technology most affect their academic experience, ECAR asked about the impact of IT on enhancing student engagement in courses, increasing convenience, improving learning, and preparing them for the workplace. Students report the most agreement with the statement “IT makes doing my course activities more convenient” (65.6%). Only about 46% agree that the use of IT in their courses improves their learning. Business and engineering majors are more likely to agree with positive outcomes from the use of IT in their courses. Those respondents who are more positive about IT's impact on courses also prefer more IT in their courses, adopt technology earlier, have positive experiences with CMSs, and more frequently believe that their instructors use IT effectively in courses.

Social Networking Sites

In the past few years, SNSs like Facebook and MySpace have become a sort of cyberspace equivalent of the student union. Recognizing that institutional leaders need to know

more about the way students think of these popular resources, ECAR added a set of focused questions on SNSs to its 2008 survey. Not surprisingly, students report widespread participation in SNSs. More than 85% of respondents participate in one or more of these networks. Usage, however, is quite sensitive to age. Almost all respondents 18–19 years old use SNSs (95.1%), while only 37.0% of respondents aged 30 years or older do so. Facebook is the most popular SNS, used by 89.3% of the students, and MySpace is second, used by 48.3%.

Despite their popularity, SNSs do not consume most students’ time in the way some popular accounts suggest. About half of SNS users spend time on just one site, have only one SNS profile, and participate in 1–5 groups within SNSs; the majority spend 5 hours or less per week on SNSs. Younger respondents report spending more time than older respondents.

Half of students who use SNSs do so to communicate with classmates about course-related topics; only 5.5% use them to communicate with instructors about course-related topics. In their comments, students give mixed reactions to greater use of social networking in the academic setting—some suggest it can be useful for coursework, while others contend that social networking software is intended to be for recreational purposes and should remain that way.

While cyberstalking and other dangers continue to be an important part of the discussion of SNSs, student respondents aren't overly alarmed. Less than one-third of SNS users report that they are “very concerned” or “extremely concerned” about misuse of their information, security problems, cyberbullying or cyberstalking, or leaving a history that could cause them problems. Another 20–30% indicate that they are moderately concerned about these risks. To offset these risks, most students place access restrictions on their profiles (87.4%).

OBSERVATIONS—WHAT DOES THIS MEAN?

Based on its findings in *The ECAR Study of Undergraduate Students and Information Technology, 2008*, ECAR thinks that these observations warrant further consideration:

1. Students perceive that more instructors need to use IT effectively in courses.

Student comments—both positive and negative—clearly indicate that how instructors use IT is foremost in the minds of students. The ECAR quantitative data indicate that many students do not feel that instructors generally are currently using IT effectively in courses. This is important because those students who do feel that most of their instructors use IT well have a more positive opinion about the impact of IT—that IT makes doing course activities more convenient, that they are more actively engaged in the course, that they are more prepared for the workplace, and, most importantly, that IT improves their learning. These are powerful findings about the value of having instructors use IT effectively. Efforts to strengthen instructors' IT skill sets and improve how they integrate technology and pedagogy may benefit student academic success.

2. Students value face-to-face instruction—year after year.

Several ECAR findings point to students' perceptions that IT should not replace or overshadow the real learning benefits of classroom interactions. Every year from 2004 to 2008, many student respondents report that they prefer only "moderate" amounts of IT in their courses. In the focus groups and in written comments, students describe the importance of face-to-face interaction between instructors and students. Also supporting this finding, most students (62.3%) indicated that they don't skip classes when materials from course lectures are available online. As institutions adjust their curricula and increase technology use in courses, they would be well served to remain cognizant of the importance of retaining opportunities for students to have face-to-face interactions with their instructors.

3. Social networking sites are much-used and valued by students.

Fully 85.2% of students use SNSs. While their primary use is to stay in touch with friends (96.8%), almost half of students use them to communicate with classmates about course-related topics (49.7%). Far fewer, however, report using them to communicate with instructors. The question for institutions is whether they should encourage use of SNSs in courses and, if so, how. Student comments provide mixed opinions about whether or not SNSs should be used by instructors as a technology tool for coursework. Institutions will need to explore this question and decide how to proceed.

4. Students are increasingly mobile.

This year saw a jump in ownership of mobile devices. More students than ever own laptops (80.5%), and cell phone owners appear to be trading their simple cell phones for Internet-capable phones (66.1% now own them). While the high cost of mobile Internet access continues to be an obstacle for many students, more than 17% already access the Internet weekly or more often using their cell phone or PDA. For students who claim to be early adopters of technology, 25.9% access the Internet from a mobile device weekly or more often. As more students adopt these technologies, institutions need to consider their strategies for providing IT services on handheld mobile devices.

5. Students expect IT to be available.

In 2007, many students commented on the occasionally unreliable IT services at their institutions. So, in 2008, ECAR asked students if their institution's IT services are always available when they need them for coursework. On this critical question, only 49.8% agree or strongly agree. Another 33.4% are neutral, and 16.8% disagree or strongly disagree. Again, comments provided by students confirm these results. Students relate experiences where the network, CMS, or other technologies were not available or reliable when they needed them for their academic work. To ensure student success, institutions will need to strengthen the reliability and availability of their technology services.

Endnote

1. Gail Salaway, Richard N. Katz, and Judith B. Caruso, with Robert B. Kvaivik and Mark R. Nelson, *The ECAR Study of Undergraduate Students and Information Technology, 2006* (Research Study, Vol. 7) (Boulder, CO: EDUCAUSE Center for Applied Research, 2006), available from <http://www.educause.edu/ecar>;

and Gail Salaway and Judith Borreson Caruso, with Mark R. Nelson, *The ECAR Study of Undergraduate Students and Information Technology, 2007* (Research Study, Vol. 6) (Boulder, CO: EDUCAUSE Center for Applied Research, 2007), available from <http://www.educause.edu/ecar>.