

6

Student Perceptions About IT's Impact on the Academic Experience

IT is not a substitute for good teaching. Good teachers are good with or without IT and students learn a great deal from them. Poor teachers are poor with or without IT and students learn little from them.

—An undergraduate student

Key Findings

- ◆ Respondents generally agree with six ECAR outcome statements about the impact of information technology (IT) on their coursework. This finding holds across most demographic factors.
 - ❖ About 70 percent of respondents agree IT helps students do better research for courses and results in more prompt feedback from instructors.
 - ❖ About 60 percent of respondents agree IT helps students better control course activities and communicate with classmates.
 - ❖ Three-fifths (60.9 percent) of respondents agree that IT improves their learning in courses.
 - ❖ Two-fifths (40.4 percent) of respondents agree they are more engaged in courses requiring the use of IT; 20.8 percent disagree; and the rest are neutral.
- ◆ More than half of respondents (55.5 percent) choose “convenience” as IT’s chief benefit to their coursework. Respondents who have used a course management system (CMS) choose “convenience” (58.3 percent) more often than those who have not used a CMS (42.7 percent).
- ◆ Females are more likely than males to choose “communication” as the chief benefit of IT in courses, as are education, fine arts, and humanities respondents.
- ◆ Males are more likely than females to choose “improved my learning” as the most important benefit of IT in courses. Associate’s institution respondents and older respondents are also more likely to choose “improved my learning.”
- ◆ Males are more engaged than females in courses that require IT. Business and engineering majors are also more engaged.
- ◆ Respondents who agree IT has a positive impact on their courses are more likely to report a positive experience with a CMS and find CMS features useful. They are also more likely to prefer more IT in courses, describe themselves as innovators or early adopters of technology, and agree their instructors, overall, use IT well in courses.

This chapter presents respondent perceptions about how IT impacts students' academic experiences—course activities, course engagement, and learning. ECAR asked students their opinions about six outcome questions grounded in the “student success” literature to learn what students think about the effect of IT on their courses. Analyzing the data, we found several factors to be strongly associated with positive IT impacts. These factors are students'

- ◆ positive experiences using course management systems,
- ◆ preference for more IT in courses,
- ◆ early adoption of technology, and
- ◆ perception that their instructors use IT well in their courses.

To give these quantitative findings more depth, ECAR did a qualitative analysis of respondent comments to the open-ended survey question. Hundreds of comments touched on the relationship between instructors, technology, and learning; these will be discussed in detail. Finally, this chapter discusses what respondents say about the most valuable benefit of IT in courses.

Student Success and IT

How does higher education's use of IT impact student success? This is a bottom-line concern for higher education leaders, policymakers, and technologists everywhere. Yet the relationship between IT and the student academic experience is exceedingly complicated. Understanding the broader topic of student success alone has been an ongoing challenge for decades, and adding a technology component to the equation means factoring in tricky issues such as technology literacy, emerging technologies, and ever-evolving student technology behaviors and preferences.

Recently, the National Postsecondary Education Cooperative (NPEC) sponsored a three-year initiative on student success. Peter Ewell and Jane Wellman, in their

May 2007 summary report of the project's culminating symposium, stated that “student success,” at its simplest, can be understood as getting students into and through college to a degree or certificate.¹ Beyond this, they point out that “student success” is a generic label for a topic with many dimensions, ranging from *student flow* across the entire educational pipeline, to *quality and content* of learning and skills achieved as a result of going to college, to positive *educational experiences* (such as student engagement or satisfaction). The NPEC work generated a significant body of literature on all these aspects of student success.

Despite the scope and complexity of assessing student success, ECAR thinks its survey of undergraduate IT use provides an excellent opportunity to learn more about this critical area—specifically about how students perceive the impact of IT on courses. To this end, the survey solicits student responses in selected areas related to student success:

- ◆ Student engagement in courses using technology. Using the definition from the National Survey of Student Engagement, we take engagement to mean student participation in course activities that are provided for their learning and personal development.² Over time, student engagement has been consistently and positively linked to student success.³
- ◆ Support for selected course activities known to be associated with learning. These include peer communication and collaboration, instructor feedback, student control over their learning experience, and the ability to conduct course-related research.⁴
- ◆ Learning. ECAR included an overall self-assessment by students, asking them to agree or disagree with the statement “The use of IT in my courses improved my learning.”

ECAR ventures into this arena with caution and explicitly acknowledges important limitations to our data and process, including

- ◆ real limits to the application of survey research and self-reported outcomes about learning and engagement,
- ◆ an unmeasured nonrespondent bias to the ECAR Web-based survey coupled with a near certainty that Web-based surveys are likely to result in somewhat inflated responses,⁵ and
- ◆ unresolved questions about the interplay between institutional action and student impact.

Perhaps the most common measure of student success is grade performance. ECAR asks students for a self-reported cumulative GPA and looks at how GPA is related to other survey data. From one perspective it would seem that higher IT literacy and engagement would be associated with higher grades; from another perspective, some aspects of IT, such as gaming and downloading music and video, can be a tempting distraction from academic studies and therefore associated with lower grades. To date, our data suggest that most factors that ECAR analyzes are not strongly associated with respondent GPA.

GPA is, however, mildly associated with only one nondemographic factor in the study—frequency of use of some technologies. Respondents who report that they play computer games, download music and video, do online social networking, or IM much more frequently (especially daily) than others are more likely to report a lower GPA. ECAR controlled for gender, age, class standing, major, and family income, which are factors understood to be associated with GPA. This finding mirrors previous years’ study findings and suggests that beyond certain thresholds, student socializing and recreational activities may contribute to academic underperformance.

Overview of Student Perceptions About IT’s Impact

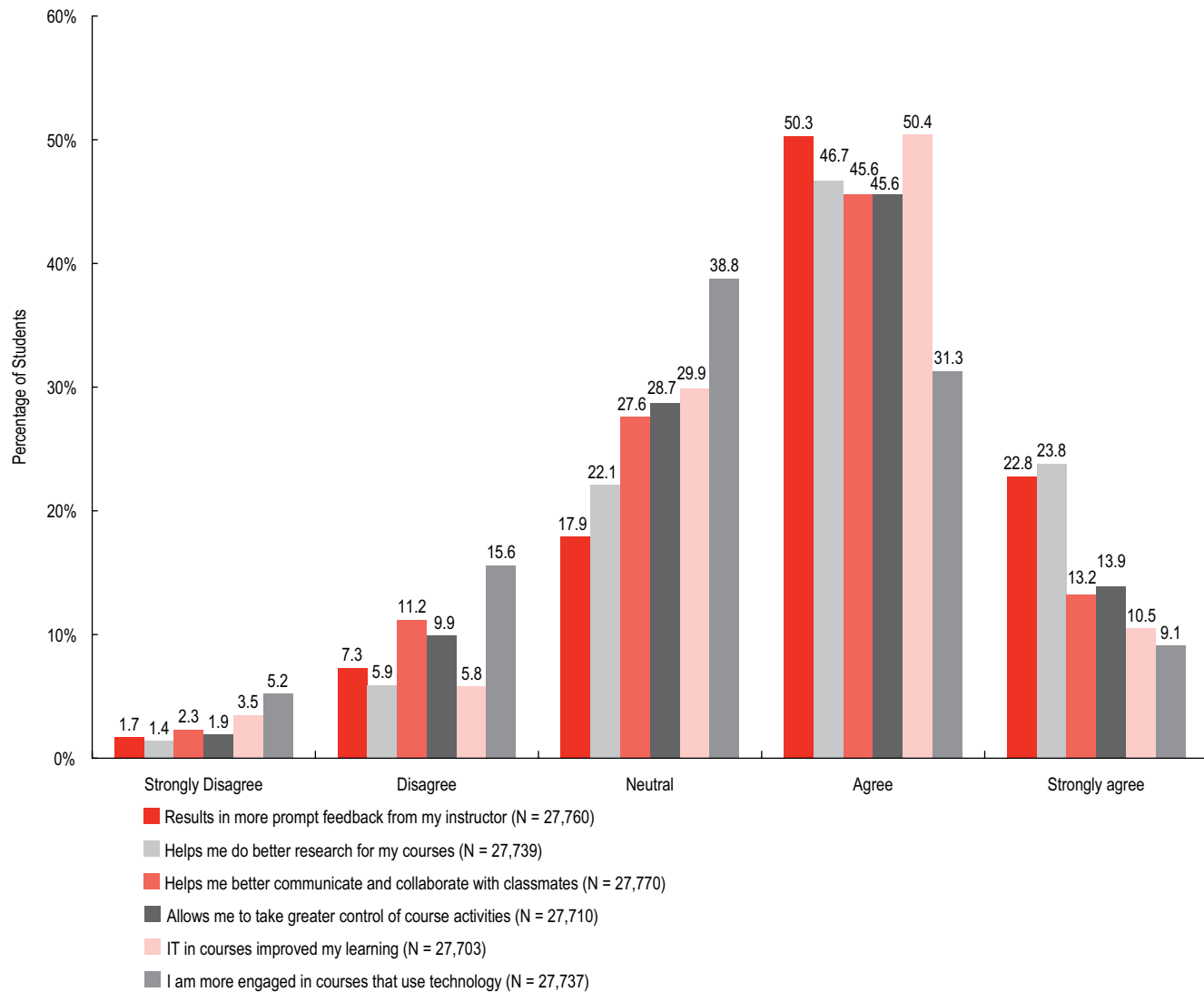
For each of the past three years, ECAR has asked respondents whether they agree or disagree with six outcome statements about technology’s impact on student engagement, course activities, and learning. Table 6-1 and Figure 6-1 show that respondents for 2007 are generally positive, though not overwhelmingly so, as were respondents from the 2005 and 2006 ECAR studies.⁶

Table 6-1. Student Perceptions About IT in Courses

	N	Mean*	Std. Deviation
Support for Coursework			
Helps me do better research for my courses	27,749	3.86	0.897
Results in more prompt feedback from my instructor	27,760	3.85	0.910
Allows me to take greater control of my course activities	27,710	3.60	0.911
Helps me better communicate and collaborate with my classmates	27,770	3.56	0.935
Learning			
The use of IT in my courses has improved my learning	27,703	3.59	0.881
Student Engagement			
I am more engaged in courses that require me to use IT	27,737	3.23	0.993

*Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

Figure 6-1. Student Perceptions About IT in Courses



Most respondents perceive technology as an enabler of course activities—helping with peer communication, control of course activities, course research, and instructor feedback. Here, the number of agree responses outweighs the combined disagree and neutral responses. Respondents are most positive about technology’s contribution to their course-related research (70.5 percent agree or strongly agree) and how IT facilitates timely feedback from instructors (73.1 percent agree or strongly agree). They also point to e-mail communication with instructors as extremely helpful. A typical comment was, “I

love the instant feedback/response you can get from professors who use e-mail. I have been happily surprised to find out that more than 90 percent of my professors use e-mail as extensively as I do (and I use it a lot).”

When asked directly if “IT in courses improves my learning,” half (50.4 percent) of respondents agreed and 10.5 percent strongly agreed. Students made frequent reference to IT in this context, with phrases such as “technology is valuable in assisting professors to achieve educational goals,” or “computers and the Internet are invaluable tools in the learning process.” However, it is important to

acknowledge that 1 in 10 respondents either disagree (5.8 percent) or strongly disagree (3.5 percent) with this opinion. Bottom line, a large number of students do not believe IT has a positive role in their learning. One student told us, "Education should consist primarily of personal and group conversation, debate, and lecture. IT has enabled some of my professors to think they do not even have to talk to their students. Technology has its place, but not in the classroom." Later in this chapter we analyze respondent comments from the open-ended survey to understand more deeply what students are thinking about the relationship between technology and learning.

Looking at the distribution of responses about IT and student engagement we see a different pattern. Here, responses form a more traditional bell-shaped curve, with only 40.4 percent agreeing that they are more engaged in courses that require use of IT. This leaves the majority of respondents unconvinced that IT in courses increases student engagement (59.6 percent are neutral or disagree). This finding is consistent with students' views that IT's primary contribution to courses is making things more convenient. For example, ECAR found previously that the most valued CMS features are those that administratively support grade performance (tracking grades and access to sample exams), and those CMS features least valued are those more related to engagement (discussion boards and sharing materials among students). Only for this outcome statement does gender make a difference. About half (49.4 percent) of males report that they are more engaged in courses requiring use of IT, in contrast with only 35.0 percent of females. This is not surprising, given the stronger technology profile of males; they prefer more IT in courses, adopt new technologies sooner, and own and use some technologies more often.

Respondent perceptions about the ECAR outcome statements hold across gender (with

the exception of student engagement and IT), age, class standing, GPA, part-time versus full-time enrollment status, and Carnegie class. Responses are also consistent over the past three years' studies, with one exception. The 2006 data indicated that age mattered—older respondents were somewhat more positive than younger respondents about these outcome statements. However, the 2007 data does not show age as a differentiator. This finding is reminiscent of the Chapter 5 finding that age was less a factor this year in respondent preference for IT in courses. Future studies will continue to track trends based on age differences.

Table 6-2 shows respondents' agreement with outcome statements by student major.⁷ As expected, business and engineering majors, with their stronger technical profile, report somewhat more agreement that technology has a positive impact on their academic experience. This is especially true for student engagement in courses. More than half of engineering (56.5 percent) and business (51.3 percent) students agree or strongly agree that they are more engaged in courses using IT, compared with other students (only 38.2 percent agree or strongly agree). It may be that the more project-oriented disciplines such as engineering and business find more value in IT support for collaboration and management activities; alternatively, the softer disciplines such as humanities and social sciences, involving relatively more intensive face-to-face discussion and argument, find these IT support functions less valuable. Indeed, these results likely reflect differences in disciplinary engagement. Note also that the actual differences between majors are small for outcomes about IT improving course research and facilitating prompt feedback from instructors, indicating that these IT benefits are more consistently valued across majors.

Other factors are also strongly associated with IT's impact on academic outcomes. The data show that CMS experience, preference

Table 6-2. Student Perceptions About IT in Courses, by Major

Major	N	IT in courses improved my learning*	I am more engaged in courses that use technology*	Helps me better communicate and collaborate with classmates*	Results in more prompt feedback from my instructor*	Allows me to take greater control of course activities*	Helps me do better research for my courses*
Business	5,294	3.70	3.46	3.70	3.94	3.76	3.95
Engineering	2,655	3.69	3.59	3.64	3.88	3.69	3.88
Life sciences	4,556	3.59	3.16	3.57	3.90	3.63	3.88
Physical sciences	2,043	3.56	3.22	3.49	3.84	3.55	3.84
Education	3,646	3.56	3.15	3.57	3.81	3.53	3.80
Social sciences	5,340	3.53	3.09	3.52	3.86	3.53	3.86
Humanities	2,876	3.48	2.97	3.46	3.79	3.43	3.78
Fine arts	2,332	3.47	3.05	3.44	3.79	3.45	3.80

*Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

for IT in courses, technology adoption profile, instructor use of IT in courses, and how students like to learn through technology are all important. These relationships are discussed in the following sections.

Course Management Systems and Outcomes

In Chapter 5, Table 5-7 reports that respondents who are positive about their CMS experience are generally more positive than others about how well their instructors use IT in courses. There is a similar association between CMS experience and perceptions about IT's impact on courses. Figure 6-2 shows a stair-step pattern illustrating this finding.⁸ Respondents having a positive CMS experience generally agree with the ECAR positive outcome statements. In contrast, respondents reporting a negative CMS experience are more inclined to be neutral about IT's impact in their courses.

Positive CMS experience is most strongly associated with the outcome "IT in courses allows me to take greater control of my course activities." This makes sense, as support for

management of course activities is a key capability of CMS software and a software feature not readily available through other technologies. One student said, "I really like CMS sites used by my teachers. I found it more difficult to manage my courses where professors did not use the CMS. If using CMS became a requirement, it would really help me and my fellow students." In contrast, a student with a bad CMS experience noted, "I don't like the course management system. It can be helpful, but teachers don't manage it very well, and so it's confusing and hard to keep everything straight."

The weakest association (although still strong) is between CMS experience and the outcome "IT in courses helps me do better research for my courses." While a CMS does provide content for course-related research, it is only one of several research technologies easily available to students, including Internet searches, college and university library sites, and non-CMS course Web sites. For example, one student stated, "The online library resources have definitely been beneficial for me personally. The databases are great, the

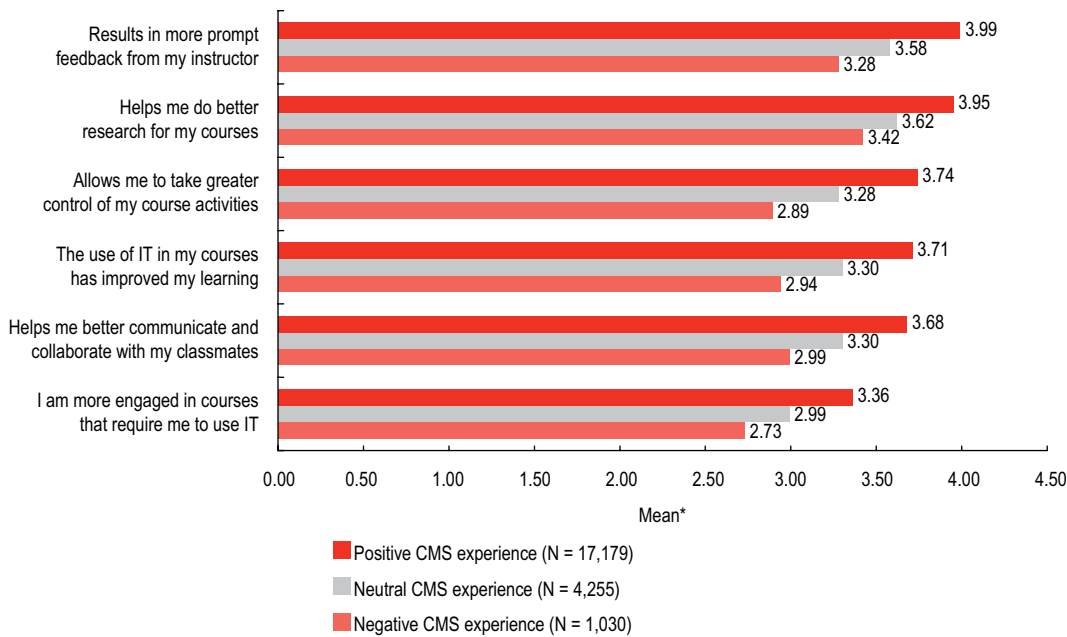


Figure 6-2.
Student Perceptions About IT in Courses, by Positive/Negative Experience Using a CMS

*Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

online journal access amazing, and the inter-library loan Web site superb. These resources have literally cut my research time in half.”

Further, students who think that CMS features are useful—especially the capability to keep track of grades and have access to sample exams—agree more than others that IT is a benefit to their coursework. This finding is consistent with the 2006 study finding and is discussed in more detail in the 2006 study report.

Preference for IT in Courses and Outcomes

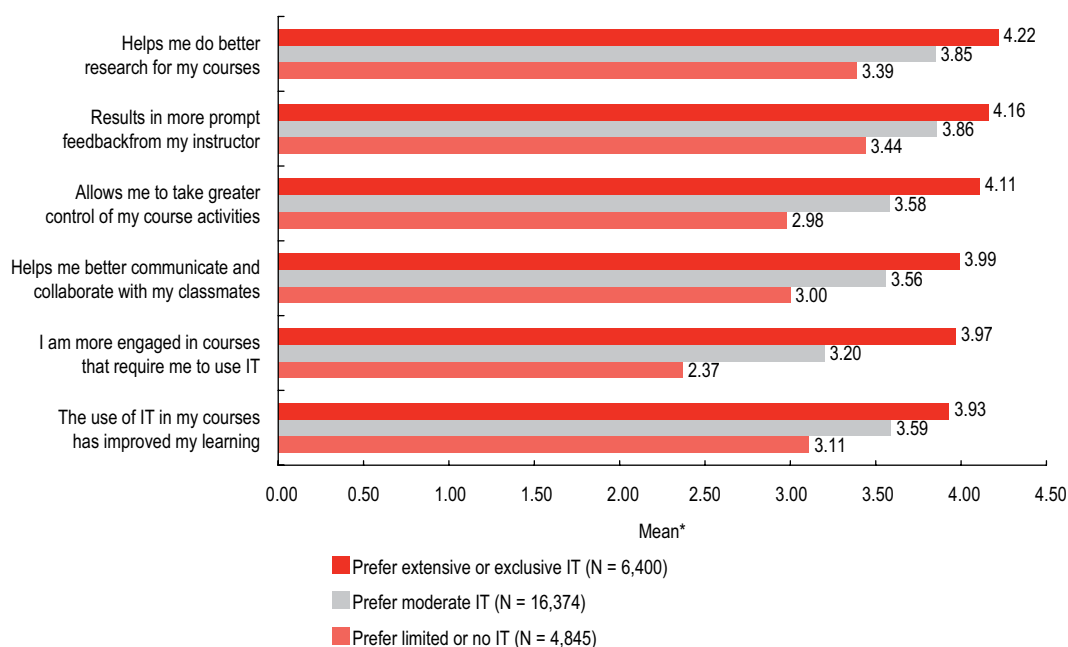
Figure 6-3 again shows a stair-step pattern: Respondents who prefer more IT in courses agree more that IT has a positive impact on coursework. On the other hand, most respondents who do not prefer much IT in their courses generally disagree, or are at best neutral, about all of the ECAR outcome statements. For example, of respondents who prefer limited or no IT in courses, 34.4 percent agree that IT improves their learning; in contrast, 79.5 percent of respondents who prefer extensive or exclusive IT in courses agree

that IT improves their learning. Recognizing the wide range of student preference for IT, some institutions now provide information about the IT that will be used in scheduled courses so that students can factor this into their course enrollment choices.

The strongest relationship by far occurs for the outcome “I am more engaged in courses that require me to use IT.” Three-fourths (75.4 percent) of respondents who prefer extensive to exclusive IT in courses say they are more engaged in courses that use IT. One technology-oriented student said, “When teachers incorporate visuals via computer presentations, it makes learning that much more interesting. PowerPoint, slideshows, and online activities really help me to stay focused in class and engaged in the material.” In contrast, very few respondents who prefer little or no IT in courses say they are more engaged (only 10.4 percent agree). A student explained, “When a professor lectures from the black/whiteboard, I find it a much more engaging classroom experience.”

The weakest relationship (although still strong) is between preference for IT in courses

Figure 6-3.
Student
Perceptions About
IT in Courses, by
Preference for IT
in Courses



*Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

and the outcome statement “IT in my courses results in more prompt feedback from my instructor.” Fully 83.6 percent of respondents who prefer extensive or exclusive IT in courses agree that technology results in more prompt feedback from instructors. Still, more than half of those who prefer little or no IT also agree (56.2 percent). This is likely because e-mail is widely used and appreciated, even by those who do not like other uses of IT in courses.

Although not shown here, we find a similar stair-step pattern when looking at respondents’ technology adoption practices. Respondents who are early adopters of technology are more apt to be positive about the impact of IT on courses and learning, and vice versa.⁹ In addition, we find that respondents who say they like to learn by using programs they can control (such as simulations and video games) or by contributing to Web sites (such as blogs and wikis) are also more positive about the benefits of IT in courses.

These findings are consistent with the 2006 study findings and corroborate other findings in this 2007 study as well. We noted

a cadre of respondents with a set of characteristics in common:

- ◆ they prefer relatively more technology in their courses,
- ◆ they like to learn by using programs they can control and by contributing to Web sites,
- ◆ they report a positive CMS experience and find CMS features useful, and
- ◆ they perceive that technology makes a positive difference in their academic experience.

Faculty Use of IT in Courses and Outcomes

It matters a great deal how well instructors use IT in courses. This theme surfaces in all of the data ECAR collected—the quantitative survey data, the student comments from the open-ended survey question, and the student focus groups. This section looks at the quantitative data results and then dives deeper into the qualitative data to better understand what is behind student perceptions about faculty, technology, and learning.

Faculty Use of IT and ECAR Outcome Questions

Figure 6-4 shows the stair-step pattern once more, this time illustrating that respondents who are more enthusiastic about instructor use of IT in courses are also more enthusiastic about the benefits of IT in courses, and vice versa.¹⁰ This is not surprising, given the relationship between instructor competence and learning. Research about student success concludes that when instructors use effective educational practices, students have a better academic experience.¹¹ It follows that when instructors integrate IT into effective teaching practices, students would be more likely to perceive both that their instructors use IT well in courses and that the effect on their courses is positive. Note that the differentiator is the respondents who agree that their faculty use IT well; neutral and disagree responses are not meaningfully different in their perceptions about outcomes.

Students Speak About Faculty, Technology, and Learning

ECAR turned to 4,752 written comments from the open-ended survey question and found hundreds of responses that mentioned the link between technology and learning, either directly or indirectly. We analyzed these comments to get an in-depth understanding of what respondents were thinking when they generally agreed or disagreed with our survey outcome statement “IT in courses has improved my learning.” Responses were categorized into three major themes that emerged: IT as an enabler of learning, IT as a barrier to learning, and the balance between technology and face-to-face interactions with instructors.

IT as an Enabler of Learning

Respondents identified five positive categories about technology’s impact on learning.

- ◆ Technology facilitates organization and control in the learning environment.

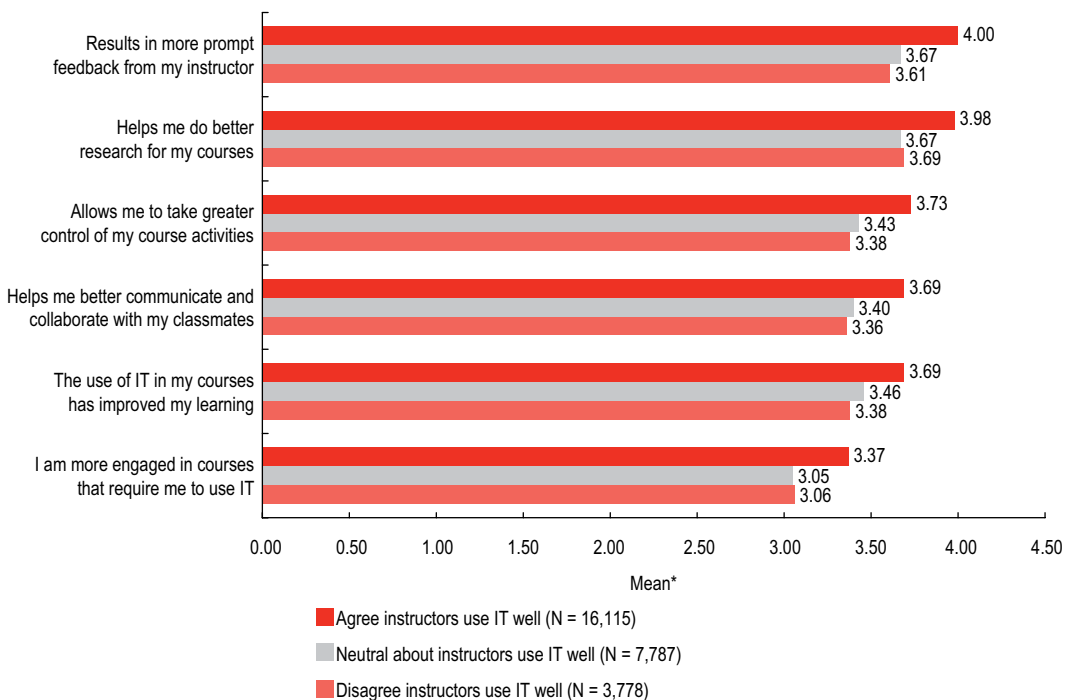


Figure 6-4. Student Perceptions About IT in Courses, by Instructors Use IT Well in My Courses

*Scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

- ◆ Technology facilitates communication with faculty and classmates.
- ◆ Technology can make content more accessible, including class materials and Internet resources.
- ◆ Technology in courses is valuable when directly linked to applications useful to future employment.
- ◆ Technology is an enabler of learning when professors use it effectively.

The first three categories, about control, communication, and content, align nicely with the quantitative findings about the ECAR outcome statements—that respondents generally agree that IT in courses helps students control course activities, communicate with classmates, receive prompt feedback from instructors, and do better research for courses. Further, respondents explicitly identified four areas of technology most valuable in this regard. Posting grades online is considered very useful for tracking performance and correcting problems early in the term. E-mail and communication via the CMS are credited with facilitating course-related communications. Course management systems also surface in the context of helping students with class preparation and keeping assignments under control and organized. Finally, students often described the value of the Internet as a source of content useful to courses.

Respondents say they value courses using IT that is directly relevant to future employment, even though this topic was not covered in the quantitative survey. One student was pleased: “My experiences with technology at the university have prepared me for my line of work and given me an edge over other individuals when I apply for jobs.”

Respondents also send a clear message that proper use of IT by instructors is critical to technology’s success as a learning tool. This was the most common theme discussed; about one-third of written comments dealt in some way with how an instructor’s use of IT makes a difference. One student summed up,

“Using technology in high school or college all comes down to how well the professor or teacher can use technology. If they know how to use technology and they are good with it, if they know how to integrate it well in the course, then it is a useful aid in learning.” Students also talked about the reverse, where an instructor’s poor use of IT is seen as a barrier to learning.

IT as a Barrier to Learning

Respondents were also consistent in identifying perceived barriers to using technology for learning. In fact, more students commented on IT barriers than enablers. Barriers fell into four broad categories:

- ◆ There are problems with technologies themselves and with their institutional implementations and support.
- ◆ The proliferation of technology has created a more complex learning environment.
- ◆ Poor use of technology by faculty (underuse, overuse, inappropriate use, or overdependence) detracts from the learning experience.
- ◆ Instructors sometimes overestimate student comfort with or access to technology resources.

With respect to technical problems, respondents were adamant that they need IT services and products that are fast, easy to use, and reliable. Without basic reliability, students feel they can’t count on technology when they need it most, for submitting assignments, taking exams, and communicating with classmates and instructors. They expressed frustration about networks being down, technical support being unavailable, or technology interfering with getting their coursework done. Students often complained about their CMS, saying it was “often down when I need it,” “there are problems uploading files,” and “there are problems with time-based assignments.” Students refer to problems with technolo-

gies themselves as well as pointing to poor institutional implementation and support of IT infrastructure and applications.

Respondents also raise an interesting point—that the proliferation of technology has created a more complex learning environment for today’s students. One student explained, “Professors use too much technology (PowerPoint, CMS, e-reserves, etcetera). As students, they never had to use so many sources of [electronic] information, and they don’t understand how overwhelming it can be. I miss the days when I could look at my notebook and handouts and that was it. Try studying when the Internet is down, or the CMS isn’t working. Professors need to ask themselves why they are using so many sources when 15 years ago they were surviving just fine without them.”

Students are extremely sensitive to both how and how much technology is used in their courses—including underuse, overuse, misuse, and overdependence on technology. Many students expressed concerns that some faculty do not use available technology to post grades or improve communication, or do not do so effectively. In some cases students felt faculty use too much technology. This is complicated by the fact that each student has unique ideas about what constitutes underuse or overuse of technology. Typical comments include

- ◆ *Underuse*: “The biggest issue is that most of my professors either do not grasp the vast improvement their courses would receive by taking advantage of more IT or are not technologically savvy enough to figure it out.”
- ◆ *Inappropriate use*: “IT only creates problems when professors don’t know how to use the programs properly.”
- ◆ *Overuse*: “Some simple classroom activities are overcomplicated by forceful addition of technology.”
- ◆ *Overdependence*: “I think in many ways technology has become an obstacle to

good classroom exercises and experiences, as faculty have become too dependent on it.”

Respondents also questioned instructors’ assumptions about student IT literacy. One comment was, “I think professors should demonstrate more use of technology. They expect that all of their students are already fluent in technology use, which is not the case.” Another student agreed: “Students typically do not have time to spend many hours learning a new program. When professors merely throw a program at you and say ‘learn how to do this,’ and you are graded on your performance with that program, this has a negative effect on your grade.”

Other students told us they were at a disadvantage because of their nontraditional or economic status. A student clarified: “As a nontraditional student, I find IT more of a challenge than traditional students who grew up in the Information Age. My IT skills are not as good, yet some instructors take it for granted that all of their students possess equal competence with technology. This has been somewhat of a handicap for me, especially when it comes to researching on the Internet and using online library sources.” Another student said, “Information technology is great, but when teachers start making computer-based participation requirements it really puts poor students at a disadvantage. I do not own a computer and I should not be penalized for my inability to buy one. Teachers should not make the assumption that every student owns a computer, but unfortunately they do make that assumption.”

The Balance Between IT and Face-to-Face Interaction

Many students wanted us to know that technology is not a substitute for face-to-face interaction with faculty. This is consistent with our quantitative findings that by far most students prefer only “moderate” technology in their courses (59.3 percent).

This theme was strong in all of our student focus groups as well. The sidebar provides example comments.

Learning Implications

For better or worse, students put responsibility for the answer to the question, “Does

technology improve learning?” squarely on their instructors. With rare exception, students do not attribute IT-related learning problems to their own technical limitations. Instead, they comment, “Technology seems to benefit me academically only when my professors know how to properly employ the technologies afforded them” and “When instructors do not use technology efficiently, it degrades the education experience and creates disgust among students about the instructor.” If the student conclusions are correct, then optimizing technology effectiveness for learning is best focused in four areas:

- ◆ developing instructor technology skill sets;
- ◆ training instructors on how to effectively integrate technology and pedagogy;
- ◆ improving the speed, reliability, and support of institutions’ network and academic applications, especially course management systems; and
- ◆ increasing instructor and administrator awareness about how their students differ in technology savvy and access to technology resources.

In fact, numerous respondents explicitly mentioned the need for more formal training of instructors, especially for such common applications used in the classroom as CMS tools. The bottom line is that while technology holds promise, realizing this promise requires strong institutional support to facilitate instructor mastery of IT skills, built on a foundation of reliable, sufficiently high-performance IT infrastructure and high-quality applications.

The Most Valuable Benefit of IT

Again this year, convenience is the clear winner for the “most valuable benefit of IT in courses.” More than half of respondents (55.5 percent) tell us that technology’s contribution to “convenience” trumped that of technology’s support for communicating with

Striking the Balance Between IT and Face-to-Face Interactions

Respondents gave various reasons why they thought technology does not replace instructors. Here are some typical comments:

- ◆ “IT adds a level of convenience to the class, and I feel it is best used for this. It cannot and should not be used in lieu of interacting with an educated professor. There is no substitute for a person that can understand his or her students and what they need to progress.”
- ◆ “I find technology a useful tool. However, it easily becomes frustrating when not working properly or when an instructor uses it too much. I feel face-to-face interaction allows for students to learn how to work with others and interact with people, developing social skills needed for the work-world.”
- ◆ “I worry that in many classes that faculty have gone IT crazy, sacrificing the human element in the process.”
- ◆ “I feel that computers and the Internet are invaluable tools in the learning process. However, I also feel that IT isn’t what helps the younger generation learn critical thinking and making decisions based on common sense.”
- ◆ “I am a firm believer in getting to know people and figuring out where they are coming from. My best teachers use the CMS and e-mail to keep us posted on important information, but they are also the most personal professors on campus.”
- ◆ “I have taken online courses, but I am not sure if the convenience of the online classes outweighs the learning experience of the classroom.”
- ◆ “I may be old-fashioned, but I prefer to learn in class or in face-to-face conversations with students. I am really good with IT, but I prefer going to the library and pulling out some books.”
- ◆ “Although all of the new technology is a great blessing as far as convenience and efficiency, nothing will replace live face-to-face interaction with the instructor.”

classmates and instructors, managing course activities, or improving learning. In fact, even though 60.9 percent of respondents agreed that IT in courses improved their learning, just 1 in 10 respondents (10.3 percent) identified “improved my learning” as the most valuable benefit of IT in courses.

Figure 6-5 shows that females more often value IT most for its help in communicating and collaborating with classmates and instructors (12.4 percent) than do males (7.5 percent). ECAR also finds that respondents majoring in education, fine arts, and humanities are also more likely to value communication as the top IT benefit in courses.

What is the profile of respondents who think that technology’s primary benefit is enhanced learning? Gender, age, and Carnegie class all play a role. Males are more likely to choose “improves my learning” as their most valuable benefit of IT in courses (12.6 percent) than females (8.9 percent). This makes sense, since males report more engagement in courses that require technology. Associate’s institution respondents perceive a contribution to learning as the primary benefit of IT in courses (16.7 percent) more often than four-year-institution respondents (9.9 percent). This likely reflects the larger populations of older

and nontraditional students at associate’s institutions.¹² In fact, older respondents, regardless of the type of institution they attend, are more apt to choose “improved my learning” as the primary benefit of IT in courses. Of respondents 40 years and older, 17.8 percent chose “improved my learning,” compared with only 9.5 percent of traditional-age respondents 18 to 24 years old.

Respondents using a CMS this quarter/semester are least likely to choose “improved my learning” as the most important benefit (8.9 percent). Instead, CMS users choose “convenience” most often (58.1 percent). Vendors and institutions alike would agree that course management systems are all about convenience—organizing and presenting materials, enabling interaction between faculty and students, and the like. It follows that CMS users would be more likely than non-CMS users to choose convenience as the primary benefit of IT in courses.

In fact, of all the questions asked in the survey, the strongest association with respondent choice of top IT benefit is whether they have ever taken a course using a CMS. Figure 6-6 shows that respondents who have been exposed to a CMS choose “convenience” (58.3 percent) more often than those who

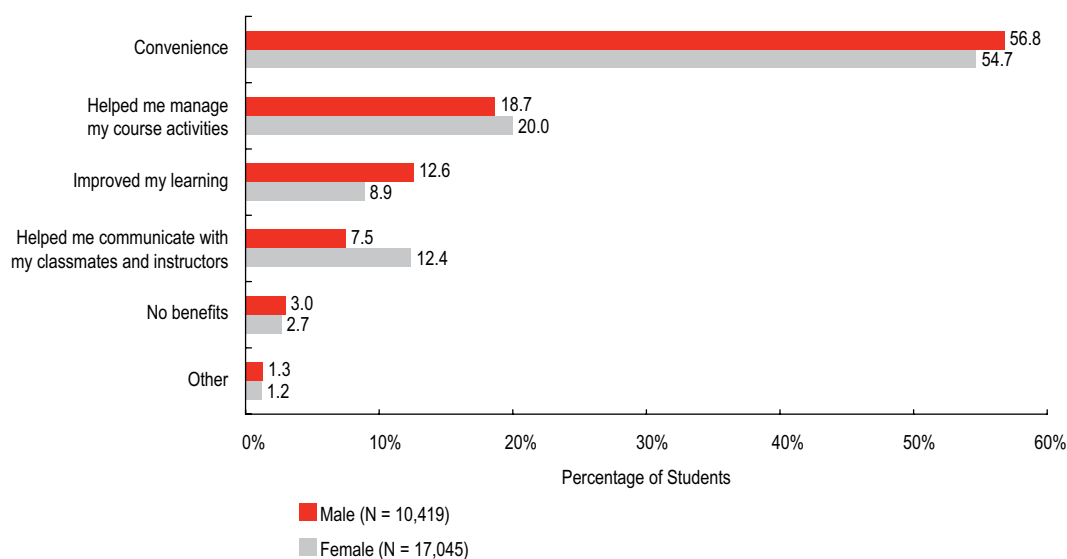
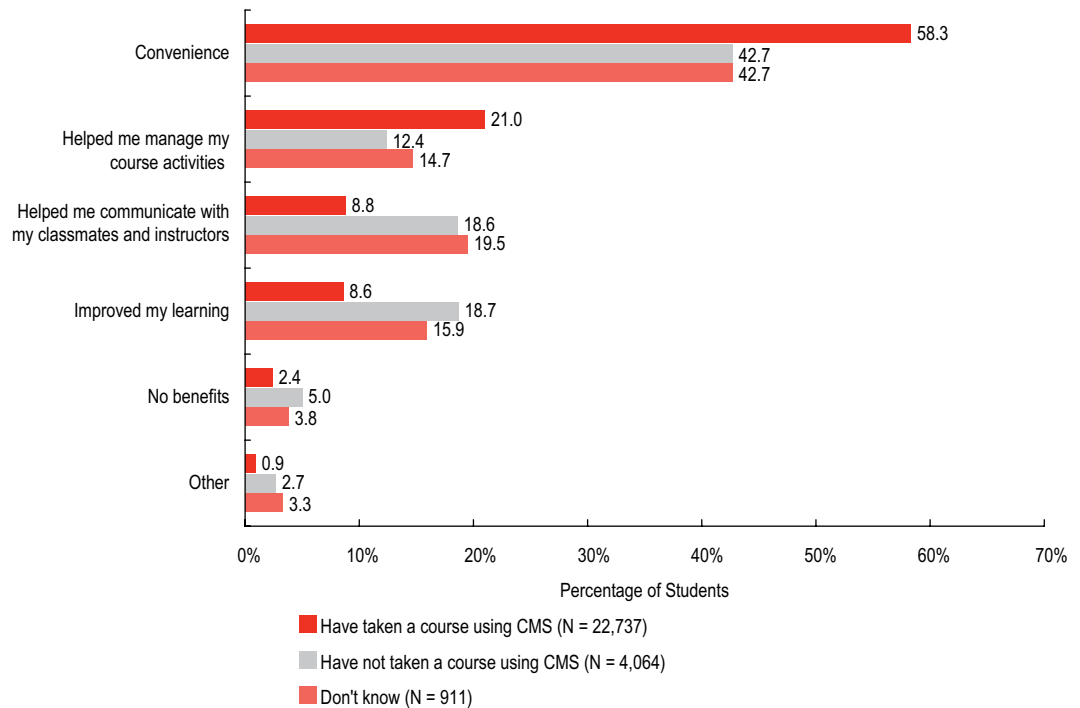


Figure 6-5. Most Valuable Benefit from Using IT in Courses, by Gender

Figure 6-6. Most Valuable Benefit, by Students Who Have Taken a Course Using a CMS



have never been exposed to a CMS (42.7 percent). A typical comment was, “I am now taking classes with the course management system—the convenience factor is invaluable.” In addition, respondents exposed to a CMS are also more likely to see the CMS capabilities that help them manage their course activities as the top IT benefit.

Perhaps this finding linking CMS exposure to convenience helps explain the increase in respondents who chose “convenience” as the top benefit of IT this year. For the 40 institutions that participated in all of the past three ECAR studies, the percentage of their respondents choosing “convenience” as the most valuable benefit increased from 50.0 percent in 2005 to 51.6 percent in 2006 to 56.3 percent in 2007. It makes sense that if we have more CMS users overall this year, and if CMS users more often choose “convenience” as the primary IT benefit in courses, that we would show an overall increase in respondents choosing “convenience” as well.

Endnotes

1. Peter Ewell and Jane Wellman, *Enhancing Student Success in Education: Summary Report of the NPEC Initiative and National Symposium on Postsecondary Student Success* (National Postsecondary Education Cooperative [NPEC], 2007).
2. The National Survey of Student Engagement, “Engaged Learning: Fostering Success for All Students” (NSSE, 2006), http://nsse.iub.edu/NSSE_2006_Annual_Report/docs/NSSE_2006_Annual_Report.pdf.
3. George D. Kuh et al., *What Matters to Student Success: A Review of the Literature, Commissioned Report for the National Symposium of Postsecondary Student Success: Spearheading a Dialog on Student Success* (National Postsecondary Education Commission [NPEC], 2006), http://nces.ed.gov/npec/pdf/Kuh_Team_Report.pdf. These themes are discussed and references are provided throughout this paper.
4. Ibid.
5. Robert Carini and others, “College Student Responses to Web and Paper Surveys: Does Mode Matter?” *Research in Higher Education* 44, no.1 (2003): 1–19.
6. The wording in the 2005 survey was slightly different from the 2006 and 2007 surveys, which included the words “... than in courses that do not

- use technology” to each of the outcome statements. For example, the 2006 and 2007 survey statement was, “The use of information technology in my courses helps me better communicate and collaborate with my classmates than in courses that do not use technology.” The 2005 survey statement was, “The use of information technology in my courses has helped me better communicate and collaborate with my classmates.”
7. Numerous students (17.4 percent) report more than one major and will be included in all majors reported.
 8. For the Student Perceptions about IT in Courses outcome questions shown in Figures 6-2, 6-3, and 6-4, the “agree” and “strongly agree” responses have been combined into “agree,” and the “disagree” and “strongly disagree” responses have been combined into “disagree.” Also, for the question about student experience with course management systems, the “positive” and “very positive” responses have been combined into “positive,” and the “negative” and “very negative” responses have been combined into “negative.”
 9. Gail Salaway, Richard N. Katz, and Judith B. Caruso, *The ECAR Study of Undergraduate Students and Information Technology, 2006* (Boulder, CO: EDUCAUSE Center for Applied Research, 2006), 80.
 10. For the question “Overall, instructors use IT well in my courses,” the “agree” and “strongly agree” responses have been combined into “agree,” and the “disagree” and “strongly disagree” responses have been combined into “disagree” responses.
 11. Arthur Chickering, *Applying the Seven Principles of Good Practice for Undergraduate Education*, ed. Zelda Gamson (San Francisco: Jossey-Bass, 1991); and George D. Kuh, *What Matters to Student Success*.
 12. For the previous 2006 study, 19.3 percent of associate’s institution students chose “improved my learning” as the IT benefit of most value to them. This was based on eight associate’s institutions with 3,380 students responding to the survey. This year the number is 16.7 percent, based on four associate’s institutions and 1,824 responding students.