21st Century Campus Report

Campus 2.0: Colleges increase technology to meet student demand

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Executive Summary

Students, educators and IT administrators at higher education institutions agree that it's important to leverage technology in lecture halls and classrooms to prepare students for their future careers and fields of study. If implemented correctly, tech tools can engage students, encourage them to learn and improve student achievement.

For the third straight year, CDW·G has surveyed 1,000 college students, faculty and IT staff members to examine the role of technology in higher education. The survey looks into students' expectations for technology on their campuses and explores how well colleges are meeting their needs.

This year, the survey results — culled together in the *2010 21st Century Campus Report: Campus 2.0* — focus on what colleges are doing right and how they are incorporating new tech tools into interactive learning experiences.

Overall, higher education institutions continue to place a high priority on utilizing technology on campus, increasing their campus technology offerings to meet the needs of current and future students. While there are some differing opinions on which technologies provide the most value, there is consensus on the fact that future students will have even higher expectations for technology on campus.

This white paper shares and explains the report's key findings and provide recommendations and action items on how colleges and universities can further build and improve on their 21st century campuses.

Key Findings

1. Faculty and IT leaders continue to place a high priority on technology.

The survey found that 88 percent of instructors believe technology is essential to teaching a class successfully and that technology is a useful tool for students. As for IT professionals, 72 percent believe that their institution understands how faculty want to use technology to teach, and 79 percent believe that their campus understands how students want to use technology.

2. Many institutions have increased their campus technology offerings to meet the needs of current and future students.

Colleges are successfully integrating new technology that empowers students and faculty to personalize and expand the learning experience. Seventy percent of schools now offer digital content, including online textbooks and other online class materials, such as PDF documents and class notes.

Sixty-one percent of colleges offer virtual or online learning opportunities, and 58 percent offer online collaboration software, allowing students to communicate, collaborate or share their work with each other and their professors.

The time and money spent on technology is making a difference. Three out of four college students report that their institutions understand how they want to use technology as a learning tool.

3. Defining and supporting the new learning environment is a challenge.

While more than three-fourths of faculty say it is important to teach in a 21st century classroom, faculty and IT leaders have different views of what technologies are essential for learning. IT administrators see an opportunity to bring a larger variety of technologies into the classroom.

For example, 72 percent of IT staffers say online collaboration is critical in a 21st century classroom, but only 31 percent of faculty agreed. And while 68 percent of IT staffers say virtual learning is key, only 35 percent of faculty agreed.

In addition, three times as many IT administrators as faculty feel that e-reader devices and recorded class lectures are essential classroom tools, and about four times as many IT administrators feel that high-definition video conferencing is important. However, IT professionals and instructors mostly agree that Wi-Fi, digital content and smart podiums are essential classroom technologies.

Jerome F. Waldron, CIO of Salisbury University in Maryland, says it's only natural for IT staff to cast a wider net when it comes to defining what classroom technologies are essential.

Faculty members have come a long way in adopting technology in recent years.

"CIOs tend to want to see immediate adoption of a technology, but success and adoption build upon themselves over time," he says. "Whenever you get the latest and greatest technologies, you have to look at people's ability to adapt to change and take that into consideration."

According to the survey, another challenge facing campus IT leaders is keeping the IT infrastructure up to date to support increasing demands for 21st century learning tools. In fact, 44 percent of IT staffers say their IT infrastructure needs to be refreshed, particularly storage, security and servers.

4. The next class of college students has even higher expectations for technology. Today, 63 percent of current college students say technology on campus was important in choosing their college. But 93 percent of today's high school students say campus technology is important as they decide on a college.

Here are four other important trends that expand upon the key findings:

Virtual learning is growing. Classrooms are no longer just four walls. Virtual or online learning is on the rise, opening the door to a host of new learning experiences for students. Today, 61 percent of institutions offer virtual learning, and 53 percent of students have taken a class that offers virtual learning.

That's the trend at Daytona State College, where 22,000 of its 40,000 students each year take online courses. Virtual learning is popular at the former community college in Daytona Beach, Fla., because many students are working adults, and the online courses allow them the flexibility to take classes at their own pace, says Rand S. Spiwak, the college's executive vice president and CFO.

Some classes are full online courses conducted over a learning management system, while others are hybrids where students and faculty meet in a classroom on occasion. Virtual learning is catering to different students' learning styles and lifestyles, and it has improved student retention rates by 80 percent, Spiwak says.

"Some students learn best in a traditional classroom with lectures and teaching handouts," he says. "Others take pure online classes and never set foot on campus. It's one extreme to another. Most are comfortable with a combination of both."

Besides giving professional adults the ability to take classes while working full time, the survey found that virtual learning provides two other main benefits: it increases the variety of courses students can take and it gives students the opportunity to learn from a broader number of instructors.

Digital content provides new educational benefits and possibilities. Digital content, such as online textbooks and other class materials in digital format, gives colleges the opportunity to augment or even replace traditional textbooks. Today, 62 percent of faculty use digital content in conjunction with teaching. Nearly all see benefits to digital content as a textbook alternative.

Faculty and students rank cost savings to students as the top benefit, followed by instant access to content. Other benefits are ease of note taking and the ability to access the most current content.

However, there are challenges to increased adoption. According to students surveyed, 68 percent believe some students prefer print materials, another 51 percent say some faculty are reluctant to move to digital textbooks, and 47 percent are worried that digital textbook devices may be too expensive.

Students have embraced collaboration and social media. Students are using social media as educational tools that allow them to communicate, collaborate and share content with their classmates and professors in real time. Tools they use include Facebook, Twitter, blogs and wikis.

Here's how students are taking advantage of social media:

• Sixty-four percent use social media to connect with classmates to study or work on class assignments at least several times per month;

• Forty-one percent use social media to study or work on class assignments at least several times a month;

• Twenty-seven percent use social media to connect with faculty to study or work on class assignments at least several times a month.

Faculty are engaged and taking advantage of technology. Instructors are exploring the technologies that students use in their personal lives and are starting to bring them into their classrooms. For example, 23 percent use wikis or blogs, 19 percent are using online texting or video chatting, 12 percent are deploying podcasts or vodcasts, another 10 percent are using social networking, and 8 percent are taking advantage of MP3 players.

In the survey, some professors say they are recording their lectures in an MP3 format, offer interactive, online practice quizzes and hold live online review sessions before exams. These review sessions are recorded, so students who cannot attend them can review them at their leisure.
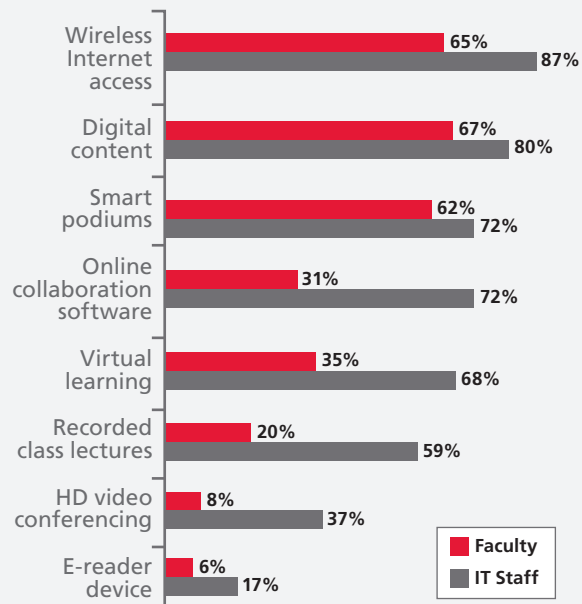
Recommendations

In this section, the white paper will highlight some campus technology issues that could be problematic and may need to be addressed.

More professional development and more budget are needed. Students, faculty and IT leaders continue to see a lack of budget and a lack of technology knowledge as the biggest challenges to technology integration. In fact, professional development could help bridge the gap between what instructors and IT staffers view as essential technology tools for the classrooms.

As mentioned previously, faculty consistently have a more narrow view of what tools are essential. Only 20 percent feel that recording class lectures is critical, for example.

Different Views on Essential Technology

"Essential" elements of the 21st century classroom, according to faculty and IT staff:

Technology	Faculty	IT Staff
Wireless Internet access	65%	87%
Digital content	67%	80%
Smart podiums	62%	72%
Online collaboration software	31%	72%
Virtual learning	35%	68%
Recorded class lectures	20%	59%
HD video conferencing	8%	37%
E-reader device	6%	17%

To successfully implement technology requires sustained professional development, says Christopher G. Johnson, assistant professor of educational technology at the University of Arizona South in Sierra Vista, Ariz.

Higher education leaders must realize that any hardware or software investment will likely be wasted if they do not provide faculty the opportunity to learn how to use the new technology, he says. They must also realize that learning takes time, effort and money.

"Faculty must have an initial opportunity to be introduced to the new technology and learn its 'nuts and bolts' — the basics of how it works," Johnson explains. "They then have to take the time to experiment with the technology, to explore how it can have an impact on teaching and learning. This experimentation on the technology's impact on teaching and learning is

the critical component in helping faculty understand how to best use the technology."

Update IT infrastructure to continue to meet campus technology needs. As mentioned previously, 44 percent of IT administrators believe their infrastructures need to be or could be refreshed.

To provide the campus with "always on" access to 21st century technologies, 49 percent say they need to upgrade or add more storage, 43 percent need to bolster security and 40 percent need to update or add more servers. And to ensure that the campus has enough bandwidth, 39 percent say they need to upgrade their networking equipment and 35 percent need to upgrade their wireless networks. Just 8 percent said their campus IT infrastructure does not need improvement.

Colleges need to improve students' technology skills to prepare them for their careers. While college campuses are trying new technologies and integrating the tools into their classrooms, fewer students and faculty members say students are being prepared to use technology as a professional tool in the workforce.

According to the 2010 survey, 76 percent of students and 67 percent of faculty say their schools are adequately preparing students to use technology at work, which is down from 82 percent and 74 percent in 2009, respectively.

Waldron, of Salisbury University, says the statistics show that technology integration is a continual work in progress. The numbers are also a reminder that campuses need to provide students access to technology and that faculty need to let students practice using those tools that they will come across in their careers.

"Students are fearless, but have limited knowledge of how most technologies work," he says. "Most feel competent, but they are consumer-level users. They do not know the tools of their trade, so tech literacy and tech fluency is increasingly important."

Calls to Action

To recap, here are three action items to help you strengthen your efforts in integrating 21st century technology across campus.

1. Understand that technology means different things to each group on campus. Generational differences and approaches to learning mean that faculty view technology differently than students. Campuses need to go beyond just having technology to understanding how technology can improve the learning process.

2. Survey students, faculty and IT staff regarding technology issues. Ensure that the IT department understands what faculty and students expect and that the IT infrastructure can support continued innovation. Consider using the CDW·G 21st Century Campus Report Survey Tool to help you evaluate the campus's needs and develop a technology plan moving forward.

A link for the survey tool and access to the full report can be found at: CDWG.com/21stCenturyCampus

For example, Waldron surveys students every March and asks them what technologies they are using and how they feel about campus technologies. His goal is to stay on top of trends in order to give students what they need for their education, he says.

This spring, Waldron saw a big increase in smartphone adoption at Salisbury University. And as a result, the IT department is now looking into mobile applications, so students can access administrative systems, the learning management system and general campus information. "Every year, they have newer and higher expectations for technology, so I'm trying to keep an eye on what they're looking for and which technologies they are using," he says.

3. Consider using technology demonstration labs to give IT staff and faculty hands-on experience with new technologies. Also, watch the technology habits of high school and college students and consider how institutions can integrate the technology tools they use into the learning process.

Both Daytona State College and Salisbury University provide professors with a resource center where interested instructors can test new tools and learn how to incorporate technology into their lessons. At Daytona State, an instructional technology staff is on hand to provide guidance. Faculty members also mentor each other, Spiwak says. Salisbury University's Center for Instructional Design and Delivery offers similar services.

"It's a welcoming place. There is no intimidation or feeling uncomfortable," Waldron says. "They can come in and say, 'I want to try something, but how do I do it?' and we work with them one on one. They are often surprised at how simple it is and how they can pick it up quickly."