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Lessons From CT2016
This month’s Campus Technology 2016 conference offered a wealth of ideas, conversations and commentary. Here are five takeaways.

AT THE Campus Technology 2016 conference in Boston this month, higher education IT leaders from across the country gathered to share their ideas and experiences. Here are some takeaways gleaned from the event’s keynotes, sessions and conversations:

Students view IT as electricity — but university leadership may not, according to Thomas Hoover, associate vice chancellor and chief information officer at the University of Tennessee at Chattanooga. In the session “Confessions of a Solutions-Based IT Organization,” Hoover and his UTC colleagues talked about how they’ve tackled funding, staffing and infrastructure issues and revamped their institution’s IT organization. One of their biggest challenges: moving from a break-fix funding model (“no money until there’s no service”) to a more strategic approach.

Hoover stressed that it’s up to IT to find a way to educate the administration that technology must be a continual investment. “If you don’t market yourself in IT, nobody else will,” he asserted.

“If you are in education and you’re not on Twitter, you might be missing a lot,” said Jaime Casap, chief education evangelist at Google, encouraging attendees of his “Future Learning in Higher Education” session to follow him at @jcasap. And he’s right, at least in the case of the CT conference — an active backchannel at the event (#Campustech) provided valuable commentary throughout many of the sessions. Two particularly prolific and insightful tweeters at CT: @koutropoulos and @BryanAlexander.

Higher ed should seek transformation, not innovation. “Innovators haven’t been able to get it yet” because they are finding solutions to existing problems, said keynoter Stephen Downes, MOOC pioneer and program leader for learning and performance support systems at the National Research Council of Canada. Instead, we need to focus on the changing definitions of need — reframe our perception of the benefits of new technology.

Don’t say no, provide an alternative. Restrictive policies don’t necessarily result in the best security, said Sadik Abdulla, security practice director for CDW, in his session “State of Security 2016.” The past two years have seen an 800 percent increase in users uploading confidential information to cloud storage services — mostly people just trying to do their jobs, he noted. IT needs to provide an easy, convenient and secure way for them to accomplish the same.

Wearable technologies are turning sci-fi into reality. We are going to end up in an environment where every human activity is mediated by technology, said Emory Craig, director of e-learning and instructional technologies at The College of New Rochelle (NY), who presented “Wearable Technology Innovations” with colleague Maya Georgieva, ed tech strategist and co-founder of Digital Bodies. Already, sensors can be tattooed, implanted, embedded in stickers and woven into fabrics, generating a tremendous amount of data. Craig’s vision of the wearable future: “Technology will interact with us. Every possible surface will become a display. Technology that doesn’t interact with us will be perceived as broken. Sensors will be everywhere. Everything that can be tracked will be tracked.” We are at the tip of the iceberg when it comes to analytics, he said, and the stakes are higher when technology is worn on our bodies, generating personal data.
BADGES FOR JOB SKILLS. Online students at the Oregon Institute of Technology can now earn digital badges to identify their skill sets and demonstrate their competencies to current or future employers. Oregon Tech Online is currently offering more than 20 badges in several areas, including Healthcare and Information Technology, but any course, series of courses, or assessment-based offering at the institution is “badge-able.” For instance, “It is possible to develop a badge for an exam, an award, successful completion of a coding ‘boot camp,’ or to reflect a specific skill set students may achieve at a certain point in their college career,” according to a statement from the school. Badges are awarded for “excelling enough to be deemed proficient at the skill,” and can be stacked to show specializations. Read the full story online.

MORE VIDEO. More students have exposure to video in their courses, more schools are using video, more educators are using flipped classrooms more often, and more lecture capture and webcasting is going on, according to new research from Kaltura. The company surveyed more than 1,500 people across both higher education and K-12 on the state of video in education. Among the findings: Fifty-eight percent of colleges are running flipped classes, up from 50 percent last year. Lecture capture has grown by five percentage points to 77 percent and webcasting has gone up by four percentage points to 51 percent over the same period. Read the full story online.

FUNDING DISTANCE LEARNING. A United States Department of Agriculture grant program will help fund 45 projects designed to give rural communities in 32 states access to educational experts via videoconferencing. Several of the initiatives will help area colleges and universities connect with high school students to provide college-level courses, as well as offer professional development opportunities for K-12 teachers. For example, Washington’s Wenatchee Valley College outreach will encompass 19 rural hub and end user sites for these types of education programs as well as workforce development efforts. The same funding stream is also being applied to healthcare projects for connecting patients with medical professionals. Read the full story online.

ADAPTIVE LEARNING AT SCALE. Seven public research universities are embarking on a three-year project focused on improving undergraduate education through personalized learning and adaptive courseware. Arizona State University, Colorado State University, Georgia State University, Northern Arizona University, Oregon State University, Portland State University (OR) and the University of Mississippi will each receive $515,000 from the Association of Public and Land-grant Universities’ Personalized Learning Consortium. The APLU will oversee the universities’ efforts to “adopt, implement and scale use of adaptive courseware in high-enrollment, blended learning courses in multiple departments and programs to improve student success,” according to a news release. The association plans to implement the best practices of the seven grantees across its national network of more than 200 public research university members across the U.S. Read the full story online.

EARLY SUPPORT. Starting this fall, an Arizona community college system will be automating collaboration workstreams among faculty, advisers and students to
**Campus + Industry**

help it improve student outcomes and completion rates. **Pima Community College District** in Tucson will invest an estimated $423,000 over three years to implement Starfish Early Alert and Starfish Connect from Hobsons. The early alert program is intended to flag behaviors that could signal a student is at risk. The Connect software provides a customized collection of resources a student may turn to in times of need, including faculty advisers, counselors, instructors and tutors. The 70,000 students of Pima CC will gain access to the applications through computers and smartphones as part of the institution’s efforts to provide “proactive support services,” especially during the first year of students’ college careers. Read the full story online.

**SUMMER UPGRADE.** Classrooms at **Syracuse University** (NY)

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**PRODUCT ROUNDUP**

Smartdesks’ **Quark2** sit-stand mobile collaborative learning conference table can be adjusted in 12 increments, from sitting to standing height. Read the full story online.

Spectrum Industries has introduced a two-in-one **Flex Lectern** that combines an instructor workstation with a mobile device cart. Read the full story online.

The **Acer TravelMate X349** features an all-aluminum chassis, weighs in at 3.3 pounds and measures under 0.7 inches thick. Read the full story online.

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The National Association of State Procurement Officials’ Purchasing Cooperative
are undergoing renovation as part of the institution’s efforts to create “21st century academic and research environments.” The project will spend $9 million to update technology and academic spaces in more than a dozen buildings on campus to add cutting-edge equipment and capabilities for instruction and collaboration. Remodeling will add improvements for accessibility, as well as audio and visual system upgrades, installation of new smart teaching stations, technology overhauls, classroom seating and furniture replacements, and setup of new seminar rooms, meeting rooms and classrooms. Read the full story online.

**SHARING DATA.** The University of North Carolina system has joined the PAR Framework, an organization of higher education institutions that share their data in an effort to provide one another with predictive models and benchmarks. The goal for UNC is to encourage success for more post-secondary students in its state. “Unlocking insights from student success benchmark data is essential for realizing our vision for academic excellence, access and opportunity for all of our students,” said University of North Carolina President Margaret Spellings. “We look forward to contributing the expertise of North Carolina’s faculty and institutional leaders to shape the conversation and improve outcomes nationwide.” Read the full story online.

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Making Virtual Classrooms More Interactive

Harvard and UC Berkeley share two different approaches to helping online business school students feel like they’re attending class in person.

**YOU KNOW** you have a truly collaborative online instructional platform when students take selfies of themselves posing on a display with their remote instructors. That has actually transpired with people who experience Harvard Business School’s (MA) HBX Live virtual classroom. The environment — really a high-end production studio with some major technical twists — was introduced a year ago to reproduce in an online format the rich give-and-take that’s essential to the school’s case method style of teaching.

Located in Boston’s WGBH public television station, the studio allows students from anywhere with an internet connection to interact in real time with each other and faculty members. The space is dominated by a semi-circular video wall that’s 30 feet wide and 15 feet high, displaying up to 60 students simultaneously — each appearing bigger than life on an LED screen 2.5 feet wide and 2 feet high. Across from that wall hang two 90-inch touch monitors that act as digital blackboards on which the instructor can write or diagram. According to Elizabeth Hess, the senior managing director over HBX Live as well as Harvard Business School’s HBX digital learning initiative, instructors work in the studio space with the help of a production crew that manages all of the technical aspects of the setup.

It’s hard not to contrast all of that with a much smaller-scale system built for use by the University of California Berkeley Haas School of Business, in which an instructor can sit in front of one or two large touch displays showing all class participants, and call on individual students by tapping on their moving faces. The teacher may or may not have somebody else in the room helping with production aspects.

Both setups were designed with a fundamental purpose: to engage online students and make them feel as if they’re physically sitting in the classroom, even to the extent of being hyper-aware that they could be called on at any moment to contribute something to the discussion. In spite
of obvious differences, both programs contribute ideas that could help more traditional online initiatives perk up their own efforts.

Capturing Interactivity
Interactivity is an essential aspect for business schools — and other professional schools for that matter. “Learners tend to cite convenience as a driving factor for considering an online or hybrid alternative to a traditional classroom program experience,” pointed out Zach McHenry, the manager of course delivery and support for the Berkeley Resource Center for Online Education (BRCOE). But for professional degree seekers, he said, “the networking and peer connection is almost more important than class work.”

A new department spun off from the University Extension program, BRCOE

FIELD NOTES FROM BERKELEY’S BRCOE

- Students may be used to taking online courses — as consumers — but they may not expect to be “fully engaged,” said Zach McHenry, manager of course delivery and support for the Berkeley Resource Center for Online Education. To make sure they’re ready, “we’ll do a pre-session where they come in; just by being there, they’re being oriented to what it is. We call on people, bring them up [on the display], and then they can see this is how it is.”

- If a student comes ill-prepared, the system allows them to “decline to be present.” They’ll still be sitting in on the session and their attendance is still tracked, but the faculty member will know not to call on them, though that’s still left to the instructor’s discretion.

- In early iterations of the live session platform, instructors had to manipulate mice and keyboards. The addition of touchscreens and tablets really makes the operation less cumbersome.
helps campus clients with online program development, marketing and recruitment, pedagogical design, media production, and course support and delivery services. In the spring of 2013, Berkeley's business school approached BRCOE about providing a rich “live session” experience in fully online and hybrid MBA classes. The goal: to get beyond the standard online offerings and create a more interactive platform. So often, McHenry noted, “teaching virtually robs instructors of the ability to ‘read’ their students’ facial and body cues; to see who is engaged, confused, distracted or even absent. This makes online instruction feel lonely, disempowering and, too often, more like a lecture than a discussion.”

For the new platform's core infrastructure, BRCOE selected Adobe Connect as best-of-breed for videoconferencing. But even best-of-breed couldn’t come close to accommodating the scale the university needed — with 50 or more people in a class. While Connect “claims” unlimited camera feeds, “there is still a practical limit,” McHenry said, whether bandwidth, display real estate or “just noise,” which caps the maximum practical class size.

It was the addition of Vantage Point from Refined Data, an Adobe partner, that made the difference. “If Connect is the engine in this project, then Vantage Point is the rocket fuel,” McHenry emphasized.

The Refined Data software allowed BRCOE to incorporate two standout features in the online course platform: the ability for an instructor to “activate” any remote student to take the lead by tapping on the display, and the option to form breakout groups for student team interaction. Both features have been key to making online students feel fully involved in the classroom experience.

What's more, the equipment is no barrier to entry. All it takes, said McHenry, is a laptop, a web-cam and, ideally, a secondary monitor for viewing students while using the primary display for presentations and screen sharing. He estimated that for about a thousand dollars, not counting the software, faculty can deliver a “deeply engaging classroom experience.” (The higher the budget, the bigger the displays.)

Students tend to agree. "I really like the live session format,” said one participant in a course evaluation. “It does feel like a class.” Added another, “The live lecture sessions made it feel more interactive, which was more engaging than just watching content on our own time.”

High Production Values Pay Off

HBX Live is an offshoot of HBX, a course platform developed at Harvard for primarily asynchronous learning experiences. Among the initial users of HBX Live have been people attending Harvard Business School’s executive education and corporate training programs as well as those pursuing its Credential of Readiness (CORe), a small bundle of intense courses designed for students from any discipline who want to acquire a business sensibility.

Because there’s a logistical limit to the number of people who can be part of the main event, HBX Live uses a lottery system to choose those who will appear on the big screen. Additional students can tune in as “observers” to view the stream and participate in polls and online chats.

The studio experience provides online students with a rare chance to talk with their instructors, many of whom are celebrity experts in the world of business. CORe students, for example, don’t normally get real-time faculty interaction — the lectures are delivered by video, Hess explained. So their initial response when they participate in HBX Live is to say, “You’re real!” “They enjoy the opportunity to ask faculty
One person does end user support;  
A technical director manages the video feeds and lining up the next view; and  
A sound engineer handles the audio.

That sound engineer isn’t simply confirming that the speaker can be heard. He or she is also managing the individual audio feeds coming in from the 60 participants. “We ask that all of the students keep their mics live,” said Hess. “We want to hear the reaction — the ‘ooohs’ and ‘aahs’ and laughing — very much like a regular classroom. It’s quite effective. It helps in making the experience real.” But when a dog barks or a baby cries, she added, the audio engineer can bring down the level of that individual’s audio feed to eliminate ambient noise that could be distracting.

Besides the handheld camera, six fixed cameras on the floor provide additional views of the room while also giving students on the video wall a sense of where they’re sitting in the classroom. That’s important, Hess pointed out, so that they know when a faculty member starts to turn toward their section; after all, they might be called on to speak.

As for the faculty, because they can see who’s raising their hands and they can watch student reactions to commentary, “they can really respond,” said Hess. “They can take all those visual cues to engage the people most intent on speaking or [those who] are going to drive a really interesting discussion.”

Of course, said Hess, there is one challenge faculty have to deal with in this setup that they don’t struggle with in their face-to-face courses: “It’s more intense than the classroom because everyone is sitting in the front row.”

Dian Schaffhauser is a senior contributing editor for Campus Technology.

FIELD NOTES FROM HARVARD’S HBX LIVE

- To keep students paying attention, said Elizabeth Hess, senior managing director for HBX and HBX Live, the video view changes every four to five seconds, continually chosen by the technical director as the program proceeds.
- From experience, testing and surveying participants, HBX Live has found that sessions work best when they’re kept to 70 minutes and no longer.
- The video output aspects of HBX Live aren’t its only value, as Hess noted. For example, BBC Radio has partnered with the program on a “really interesting” use case. “They see it as a vehicle to have a discussion with 60 people on a topic — in real time — that they can use for their radio broadcasts. There really isn’t any other technology that would enable them to have [that many people] engaged in a conversation from different locations around the world in a quick way.”
Tapping Into Research and Education Networks

Advanced research and education networks can be a tremendous resource for colleges and universities both large and small. So why doesn’t every school take part?

**RESEARCH AND** education networks (RENs) have been designed to meet the needs of some of the most demanding internet users in the country: scientists, academics and researchers in the nation’s leading academic institutions. These networks are engineered to support high-quality services that remain consistent regardless of the number of users on the network. They have the speed, quality, flexibility and support to readily adapt to new experiments or projects that place new demands on the network.

RENs “have enormous capabilities and potential for all schools, small and large, to realize new capabilities in teaching, learning, research and administration,” according to Rob Vietzke, vice president of network services at Internet2, a member-owned advanced technology community that operates the largest and fastest coast-to-coast research and education network in the U.S. REN services are technologically ahead of the curve, enabling communication and collaboration on a high-speed network free of the noise and friction found on most commercial providers.

So why doesn’t every college and university take full advantage of the complete smorgasbord of services and benefits RENs provide?

**It Comes Down to Money**

According to Ed Chapel, senior vice president at NJEDge, a REN that services institutions in New Jersey, some schools are thinly resourced and therefore unable to conduct the diligence and research to fully avail themselves of these resources. Vietzke agrees. It’s not that schools are unwilling or don’t desire to take advantage of the services offered by RENs; some just don’t have the funds. “Adoption by the schools is sometimes a little uneven depending on what the funding model is,” said Vietzke. Schools are scrambling to move more of their investment into their IT delivery systems and to make their capabilities as robust as possible, but sometimes the funding does not match the desire, he explained.

For the most part, large research institutions take full advantage of REN services. Even some small, private schools do, according to Mark Johnson, chief technology strategist at MCNC, one of the largest and oldest RENs in the country serving institutions in North Carolina. For example, Davidson College (NC), a small school of about 1,800 undergraduate students with little research ambition, taps into MCNC to enhance the use of technology in...
the classroom, in collaboration and in administration. Davidson is an anomaly. Most small institutions that are not research-driven and are seldom awarded grants miss out on REN services because of inadequate funding. But some schools, no matter their size, miss out because they are unaware of the services available.

**Getting the Word Out**

While large research institutions with deep pockets are certainly taking full advantage of the high-performing research capacity offered by RENs, some may be missing out on other REN services such as instructional design, professional development support, multimedia treatment and ADA compliance resources. RENs need to do a much better job of marketing and promoting their resources, said NJEDge’s Chapel. “We want to keep in mind that there is an obligation to ensure that these valuable resources are consumed.”

RENs are exceptional at providing technical and financial transparency to their members and focusing on service delivery, but as a general rule, most do not actively promote their services and potential. Depending on their maturity, some RENs employ different methods of marketing, but it’s certainly not their forte.

RENs typically comprise a group of engineers and entrepreneurs who helped build the network capability because it is additive. “Many of us came out of one institution and started serving our state. We are not marketing people and we’re certainly not profit-driven people, so sometimes we miss the opportunities to market the great services that we’re doing,” said Vietzke, who before joining Internet2 worked at the University of Connecticut as the director and network architect of the Connecticut Education Network.

“Many of us believe that we are lacking in our ability and effectiveness in promoting the value that we have to offer as well as we could. We mass market when we should be target marketing.” — Ed Chapel, NJEDge

Internet2 and the 39 RENs across the country try to engage with their members and inform them about the services they offer while ensuring that the RENs and schools can communicate with one another. “We are a community, we are not a business. There is a piece of what we do where communication is critical. But that said we are generally focused on service delivery. We put all our resources into that,” said Vietzke.

NJEdge utilizes LISP servers, its website and regularly scheduled meetings and events throughout the year to get the word out about its services, but does not have a well-defined marketing plan or communication strategy, admitted Chapel. “Many of us believe that we are lacking in our ability and effectiveness in promoting the value that we have to offer as well as we could,” he said, adding that this could be the root cause of underutilization.

To successfully market their services, RENs must build elaborate customer relationship marketing lists and better target their efforts. Most RENs, said Chapel, don’t have those skill sets. “We mass market when we should be target marketing,” he said.

The Great Plains Network (GPN), one of the county’s smallest RENs, does not have a marketing department, but that does not mean that William Mitchell, the network’s executive director, does not think about how to market its services. In fact, he thinks about it “quite a bit.” Since its beginnings, GPN has outsourced much of its technical operations to its member institutions and has recently hired a consultant to help forge GPN’s brand and identity. “[We’re] taking more of a marketing look at GPN and how we can better communicate to our members,” said Mitchell. He initially believed that GPN was doing a fine job communicating with its members, but some member surveys showed otherwise. “We can do a much better job,” Mitchell said.
To ensure that its member schools are fully aware of its services, GPN employs a director for research and cyberinfrastructure initiatives. This individual works with researchers from the member schools, enables them to take advantage of the resources that GPN and the community of RENs provide, and supports grant development. “You can call it outreach, you can call it a matchmaking service — [pairing researchers] at one institution who are exploring the same area as another one at a different institution,” said Mitchell. Offering this type of service is just part of GPN’s DNA, he said.

Vieztke and Internet2, which celebrates its 20th anniversary this coming October, see RENs as an important piece of the national story in terms of research and education. “We have become a national asset in defining what’s next for the future internet,” said Vieztke. “RENs are enablers of meaningful research and education collaboration at the local, regional, national and global levels,” agreed Jen Leasure, president of The Quilt, a national REN coalition representing 36 networks across the country. “Armed with the tool of robust and flexible networks as well as the technical expertise and support provided by RENs, community anchor institutions that connect to RENs have the opportunity for technology to transform and enrich their mission and goals.”

Frank DiMaria is a writer based in Fort Mill, SC.

**RELATED READING**

Don’t miss “NJEdge.Net: Advancing Education and Research,” our in-depth conversation with Ed Chapel, senior vice president at NJEdge, about the role of research and education networks in higher education.
How to Design Standards-Based Online Courses

Two universities share how the Quality Matters rubric informs their online course design and improves the learning experience for students.

MARY CHAYKO, a professor in the School of Communication and Information at Rutgers University (NJ), has taught both hybrid and fully online courses for several years. In 2014, as she was designing a new course, Chayko realized she wanted to make the experience more seamless for students, so she turned to Denise Kreiger, a Rutgers instructional design and technology specialist with experience using the Quality Matters (QM) framework for online courses.

Many faculty members struggle when they initially make the transition from face-to-face to online and hybrid settings, and that is where QM can help — by laying out course design principles for improving student learning, engagement and satisfaction. Faculty often think they are following a hybrid model, yet the online and in-person aspects of their course remain very separate, said Kreiger. “One of the biggest complaints I have heard from students is that when you do a hybrid that way, they think they are going into two different courses. The way I do hybrids is to fully integrate the online and in-class components into one seamless course. How are you going to do group activities when you can’t see each other face-to-face? How are you going to build commu-

WHAT IS QM?

Quality Matters is a nonprofit organization with more than 1,000 subscribing members dedicated to quality assurance in online education. It has developed a rubric to guide course design as well as the evaluation of online and blended courses by peer reviewers. The rubric consists of general standards in eight areas, with specific standards detailed for each area:

1) Course overview and introduction;
2) Learning objectives (competencies);
3) Assessment and measurement;
4) Instructional materials;
5) Course activities and learner interaction;
6) Course technology;
7) Learner support; and
8) Accessibility and usability.

The specific standards are assessed by a point system, with some standards assigned more value than others. Standards with the highest point value are considered “essential” standards, which must all be achieved in order for a course to meet overall QM standards.
Developing a New QM-Certified Course

Chayko and Kreiger met weekly for six months to develop Chayko’s new hybrid course, which dealt with how emerging digital technologies contribute to disruptive changes. Kreiger developed a course blueprint document and made sure all of QM’s general standards were being incorporated. “Their standards put a lot of emphasis on what is known as course alignment,” she said. “So we emphasize that the learning objectives, the assessments, the instructional materials and course activities are all aligned.”

Chayko admits that initially she struggled with the different approach to course development. “I couldn’t understand why we would be going into the level of detail we did,” she said. “Ordinarily I might start with the activities, but instead we started with learning objectives, and should they be accomplished in class or online, and how will they fit together. We then proceeded to activities and readings. It flipped [the process] upside down for me and prompted me to think about the course in a way that would make most sense for students — and got me to think about what I want students to understand here.”

But when she taught two sections of the course in spring 2015, Chayko described it as a pleasure to teach. “All the detailed work is done by the time you step into the classroom, and you are fully engaged,” she said. “You know exactly where you are going and it frees you up to concentrate on working with students individually because you are not going week by week.”

Chayko and Kreiger’s course was the first at Rutgers to ever be peer-reviewed and receive a QM certificate for course design. “The highest score
you could receive in a QM review is 99 points and we received 99 points,” said Kreiger, “so we felt really good about that.” Since then, a second course in Rutgers’ School of Communication and Information has received the formal QM certification. Chayko and Kreiger made a model course available to the whole Rutgers community, so all instructional designers and faculty can see what a QM-certified course looks like.

Finding the time to do this course development work is a challenge for busy faculty members. “Not every faculty member has the time to do something like this,” Chayko said. “This was a brand new course that I decided I wanted to give this priority treatment to be a real showcase course for the program, but it wouldn’t be realistic to spend this much time on every single course.”

Support for Faculty

Bethany Simunich, director of online pedagogy and research at Kent State Online (OH), agrees that faculty members are very busy, but they also are passionate about helping students learn. Kent State Online has an instructional design process that follows the QM standards. “If the faculty can use their time wisely to focus on alignment and creating engaging content and authentic assessment, that is time well spent,” Simunich said. “The other aspects of online courses we can help them with.”

She noted that resources such as the Kent State Online Blackboard template and the Kent State Online syllabus template help faculty to meet over half of the QM standards by including standard information on university policies and resources, as well as placeholders for vital course components, such as the instructor introduction and course learning objectives.

Kent State has been a QM member since 2009. Although there is no mandate to use the framework, the university has a suite of support tools and resources for faculty members who want to design high-quality courses, including those who want to work with the QM rubric. Approximately 275 Kent State faculty and distance learning staff have gone through QM’s flagship workshop. Instructional designers are educated in QM and able to talk to faculty about what they should be thinking about when they design online and hybrid courses.

“It has been a groundswell,” Simunich said. “The call has come more and more from faculty. They are interested in QM. We have faculty members who have become peer reviewers, and faculty who have gone through the workshop are asking for more information and guidance on QM.” She added that research studies done on QM have shown increased learner satisfaction in courses that implemented QM design standards.

In addition, Kent State is a member of the Ohio QM Consortium, which is the largest consortium affiliated with QM, and includes 61 member schools. “We use a barter system for QM reviews,” Simunich explained. “If we put a course up for review, we spend some of our points; if we serve as reviewers for other universities in Ohio, we gain some points.”

Like Rutgers’ Chayko and Kreiger, Simunich said there are key benefits to designing a whole course upfront. In a face-to-face course, designing and teaching are more merged. You can make more changes on the fly. “With online teaching you have to design it all out ahead of time, and that is the thing that QM helps with so much,” she said. It helps faculty think through not just the pedagogical design, but also about things specific to the online classroom — creating a good course structure and good navigation; inserting the teaching presence into the course; and having students create their own social presence. “I need to purposefully think about all those things before my course begins,” Simunich added. “The QM rubric goes through all of that to make sure I have all the facets of my course. When I design an online course, I think about the entire design before the course begins. When it starts, I concentrate on teaching.”

David Raths is a freelance writer based in Philadelphia.
7 Best Practices for Deploying Lecture Capture Campuswide

Technology leaders from universities with large lecture capture implementations share their advice for rolling out the technology at scale.

TODAY’S STUDENTS increasingly expect ubiquitous lecture capture so they can review lectures to improve their understanding of the material or catch up on a class they missed. “Lecture capture in general is becoming very quickly an expectation of students,” said Chris Edwards, assistant vice president at the University of Cincinnati in Ohio.

To meet this demand, colleges and universities are scaling up their lecture capture deployments to more classrooms and providing faculty the option of recording lectures outside of the classroom. “We are seeing an uptick in use of lecture capture, need for lecture capture and also video content creation by faculty outside the lecture hall,” said John Harford, manager of collaboration technology and digital education at Yale University (CT).

Campus Technology spoke with administrators and technology leadership at numerous universities with large-scale lecture capture implementations to identify best practices for campuswide deployments.

1) Automate the Recording Process to Make It Effortless

The University of Massachusetts Lowell has an opt-in policy for lecture capture. Faculty log in to a website and select which of their courses they want to record. The Department of Instructional Technology then schedules the lecture capture appliance to record the lectures for that course automatically, and creates a link in Blackboard or on a website where students can go to retrieve the lectures for viewing. “Faculty don’t have to remember to hit the play button; they don’t have to do any post publishing after the fact; and it just makes it much easier for a larger scale deployment,” said Mike Lucas, senior director of instructional technology at the institution.

The university uses Echo360 lecture capture appliances and some Sonic Foundry Mediasite appliances. While lecture capture appliances are “not cheap,” according to Lucas, they reduce the complexity for faculty and staff. “We’re weighing it against going into a room to fix a computer issue because of drivers not working and it’s not seeing a camera and it’s not seeing a document camera,”
said Lucas. “With the appliance, it basically runs 24/7, and for the most part it’s pretty rock solid.”

The University of California, San Francisco uses Sonic Foundry Mediasite appliances with CollegeNET 25Live scheduling software to automate the lecture capture process. “For us the best practice is to not have the instructor physically involved in the process,” said John DeAngelo, assistant vice chancellor for educational technology services at the university.

### 2) Focus on Implementation in Large-Capacity Classrooms

Campuses with large-scale deployments generally focus on lecture halls first and gradually expand to smaller classrooms. For those that have a mix of appliance-based and software-based systems, they tend to place the appliances in the large lecture halls, where they can get a bigger bang for their buck, and use the lower-cost lecture capture software in smaller rooms.

“You have to think about which rooms are really good candidates for lecture capture, and those are typically middle and large classrooms. We focused our efforts on the classrooms that are what we consider the large gateway classrooms,” said Edwards. At the University of Cincinnati, those are classes such as chemistry, physics and calculus, which typically take place in lecture halls, have large enrollments and tend to have a higher DFW (drop, fail, withdrawal) rate. “If students don’t make their way through these particular courses then it could result in a change in their career direction,” said Edwards. “We saw Echo360 as part of a holistic strategy to address DFW rates, so that’s where we targeted.”

According to Lucas, installing lecture capture appliances and high-definition cameras in the large lecture halls at UMass Lowell has helped reduce DFWs in high-enrollment classes such as Calculus 1. “We have had very good luck as far as student success and student satisfaction,” he said. “[Students’] ability to go back and look at the Calculus 1 lectures has helped us out with reducing the DFWs.”

### 3) Establish Relationships With Leadership and Early Adopters

Rather than trying to work directly with faculty to promote adoption, Lucas began by developing relationships with department chairs in a few key departments and asking to present the technology at departmental meetings. Those meetings led to faculty members in the nursing, engineering and biology departments trying it out. Once he had some data from those initial deployments, Lucas approached the deans of the various colleges in an effort to scale the deployment up to the enterprise level. “All of the deans were basically on board already because they had seen the numbers; they had talked to their faculty; and this was something that they thought was going to help the students,” said Lucas. “So we went from six to 60 in the course of one summer.”

The University of Cincinnati began its implementation by identifying the colleges, IT professionals, instructional design professionals and faculty members who had “that innovator, early adopter mindset,” said Edwards. “Just because you can raise your hand doesn’t make you an early adopter. There are some very specific characteristics: the willingness to work through the bumps and bruises that often accompany an implementation early on, being willing to provide feedback, to participate in assessment plans, to share your experiences with the larger university community.” The success of the pilot project with those early adopters eased the rollout of lecture capture technology with other faculty members.

### 4) Pay Attention to Audio

Good-quality audio recording is the most critical component of lecture capture, according to both Lucas and DeAngelo. Lucas ranks the presentation materials as the second most important component of the lecture capture, with video of the instructors themselves coming last.
“Audio is the critical lynchpin in capture,” said DeAngelo. “You might be able to get by if you don’t see the instructor, or if they step outside the viewing angle of the camera, but if you can’t hear them, the capture is wasted. It’s critical that they pay attention to audio.”

5) Offer Flexibility for Instructors to Record Lectures Anywhere, Any Time
For faculty who are interested in creating flipped classrooms or implementing an active learning approach, Harford recommends providing faculty with the ability to record lectures however they want. “I want them to be able to either use the capture system or to use their own method of capture and just upload it to the capture system,” he said. That way, faculty can record lectures from the comfort of their office, home or somewhere else.

The University of Cincinnati allows faculty to record their lectures anywhere on campus using Echo360’s personal capture platform for recording, “which allows staff members to do lecture capture ad hoc or on their laptop in any room on campus,” said Edwards.

6) Ensure Adequate Storage and Processing on Servers
Captured lectures typically include about an hour’s worth of two video streams — one of the instructor and one of the presentation materials — resulting in large video files, which require a significant amount of storage space. Each lecture capture also has to be processed before students can view it, which requires a significant amount of processing power.

“We were burning through about a terabyte of content every four weeks, so we had to realize that what we had for servers when we started this out is not going to cut it once we deploy it to 50 percent of the classrooms on campus,” said Lucas. UMass Lowell had to scale up its storage and processing to meet the demand.

If he was starting the process today, Lucas said he would go to a cloud-based environment. “We did not have that option when we began this, but if I was to begin it now, I would go to the cloud,” he said. “And we’re migrating to the cloud also. We have an investment in the data center, but we want to get out of the data center business like every other university.”

UCSF tries to limit the number of recordings to conserve storage space. “We try to get people to only record those things that they absolutely need to record,” said DeAngelo. “After three or four years, we’ll go back and review based on usage patterns and ask persons to either delete them or to move them to another server, their own server for example. But storage does become an issue after multiple years of recording.”

7) Engage With Other Colleges and Universities
As with any major technology implementation, it’s important to partner and communicate with peers at other colleges and universities to find out about their successes and challenges. “We’ve been communicating with other schools that are in a similar situation as ours, and then schools that aren’t,” said Harford. “How do they get through the hoops of various departments and shared spaces and non-shared spaces and funding? What’s their approach? Is it more centralized, or is it more dispersed? I don’t have the answers to that, but I’m always reaching out to the community to find out what others are doing.”

Leila Meyer is a technology writer based in British Columbia.
TEACHING WITH TECH: A BALANCING ACT

We surveyed faculty members on the use of digital technologies for teaching, and their responses reveal an overwhelmingly positive outlook on tech in the classroom — as long as education remains the core goal.  

By Dian Schaffhauser

Higher Ed Loves Technology. Nearly nine in 10 faculty members say tech has helped them teach. More than eight in 10 say it has helped their students learn. Yet, even that positive outlook has its limits. While respondents to Campus Technology’s first-ever “Teaching With Technology” survey overwhelmingly believe that the use of digital technologies has made their jobs easier, they also realize that dependency on devices and other forms of tech may decrease the amount of time students spend on the basics — reading, writing and thinking — and increase the temptations to cheat and plagiarize.

We ran this survey to better understand the love-hate relationship educators have with tech in the classroom. After weeding out responses from people who work in K-12, hold non-teaching positions in higher education or work for vendors or for non-school organizations, we were left with a total of 524 respondents, who answered a lot of questions and also shared a lot of open-ended opinions about what works and doesn’t work for them in their lecture halls and learning spaces.
Who Responded
There are a lot of people who play a part or have a vested interest in the use of technology in colleges and universities. But for the sake of this survey, CT wanted to find out what faculty thought about the topic, so we targeted our questions to that role within the institution. Everybody else who responded to the survey was eliminated from the results we're sharing with you here.

We were left with 524 qualified participants who held faculty roles. Of those, 69 percent work in public institutions, 23 percent in private not-for-profit colleges and another 8 percent work in private for-profit schools. Seven in 10 institutions (71 percent) run four-year programs; the other 29 percent run two-year programs.

Our typical respondent has spent an average of 21 years in the field. Nearly half of the respondents (49 percent) have 21 years or more of experience working in higher education; the next largest group (33 percent) has between 11 and 20 years.

The respondents come from a gamut of school and college types. The top three most represented are education (19 percent), business (14 percent) and liberal arts (10 percent). Every other discipline has single-digit representation.
Perspective on Tech
As you’d expect with a survey by a magazine that focuses on technology in education, most respondents are upbeat about its value in the field. Four-fifths of people (81 percent) reported that tech has had either an “extremely positive” or “mostly positive” impact on education. Only a single individual among all 524 respondents said just the opposite.

As a humanities professor in Georgia proclaimed, “Technology is making education magical. We have the ability to engage each student one-on-one.”

At the same time, added another instructor from a community college in Ohio, “Technology is too advanced for many adult learners and creates a barrier to learning and teaching. Let’s hope the power never goes out.”

Nearly as many respondents (77 percent) believe that tech has made their jobs easier (see chart on the next page). However, in contrast to the previous question, many more people (16 percent) also said tech has made their jobs harder.
more technology in the education process. All the gamification and MOOC-ifying of education won’t change the basic structure: Students write, writing instructors and peers provide feedback, students revise.”

Difficulty of the job doesn’t seem to have dampened instructors’ enthusiasm for technology. Almost nine in 10 (88 percent) reported that tech has positively impacted the effectiveness of their teaching. Another 11 percent are neutral on the question, and just 1 percent believes tech has had a negative effect on their ability to teach.

Educators are nearly as affirmative on tech’s impact on student learning. Most people (84 percent) believe the use of tech has positively affected learning. Yet, compared to the tiny number of “negative” responses in the previous question, about five times as many people (6 percent) also believe that tech has negatively affected their students’ abilities to learn.

Several respondents reminded us that one population is often left out of conversations about the benefits (or lack) of technology in teaching and learning: students with disabilities. “Clickers, YouTube, etc. are largely inaccessible to students with sensory impairments,” stated

A humanities teacher in a New Jersey community college noted that while tech may make education (and life) easier, it won’t replace certain basic teaching skills, such as writing instruction. “Student writers need to develop voice, gain information literacy, learn grammatical consistency and enhance critical/analytical thinking skills,” he said. “That won’t change even as the mode of education shifts to incorporate...
Technology in the Hands of Students

Less than a quarter of faculty (23 percent) fully support the idea of their institutions providing computing devices to all students. Relatively few schools do this, and when they do, it frequently takes the form of subsidies that students can use to acquire devices from a fixed list of choices at the college bookstore. Nevertheless, a majority of instructors are inclined to like the idea to some extent. When the share of teachers who favor handing out devices is added to the share of teachers who favor the idea but with some reservations as well as those who could go either way, the overall count is 85 percent.

People are more inclined to favor the idea of students providing their own devices for classroom learning. A solid third (33 percent) said they would go with that approach “absolutely.” Another third (34 percent) would choose that approach with some reservations. And a quarter could go either way.
Almost seven in 10 (69 percent) believe that between 51 and 100 percent of their students have internet connectivity. Also, few institutions provide a means for students to get internet access at home if they’re unable to afford it. The presumption in post-secondary education is probably that students can use campus resources when they need to get online to do school work.

That isn’t necessarily sufficient for one business professor at a New York for-profit college who suggested that “school supplies” start including the addition of “some sort of internet access package for all students,” so that lack of access outside of college “goes away as an issue.”

Technology in the Classroom

To gain an overall understanding of what kind of technology is seen as the most useful for teaching and learning, we asked people to assess the value of specific types of devices in the classroom. (See chart on the next page.) Laptops came out on top in that ranking; 95 percent of respondents said they consider those either “essential” or “valuable.” Workstations — higher end computers with faster processors, more RAM, more storage and dedicated graphics cards — came in second, adjudged essential or valuable by 76 percent of faculty. Those were followed closely at 74 percent by all-in-one computers, such as the iMac, and traditional desktop computers. This crowd isn’t ready to see the virtues of smart watches. Those came in last in the list, seen as essential or valuable by only 5 percent of faculty.

The presence of one technology in the classroom, however, is viewed with mixed emotions by most instructors — and that’s mobile phones. About one-fifth of faculty allow the use of phones in their learning spaces (21 percent) and one-fifth don’t (22 percent). The remaining 57 percent do allow the phones but with limitations. The conflicting emotions were summed up in this comment from a liberal arts instructor at a four-year university in Connecticut: “We need a means of blocking use of devices for accessing social media, texting, etc., without blocking the use of such devices for exclusive educational purposes, [such as] taking notes.”
Seven in 10 survey respondents (71 percent) are using a blend of online and face-to-face for their teaching environments. Among the remainder, more are using the traditional course approach (19 percent) compared to the online-only mode (10 percent).

Yet, when we asked people directly, “Are you using a blended or hybrid model for your classes?” the numbers came out slightly differently. (See chart on the next page.) There, 75 percent stated that all or some of their courses were blended. Another 11 percent said they would be moving to blended in the next year or exploring the option. The remaining 15 percent suggested that they’re not doing blended instruction
now, and they don’t intend to in the near future either.

Faculty are also fairly far along in flipping their classes. Fifty-five percent are somewhere along the spectrum of flipping all or some of their courses, in which they ask their students to view videos or some other digital matter online before coming to school and then use class time for other activities, such as hands-on and team projects or discussions. Twenty-five percent intend to introduce the flipped model into their courses over the next year or are exploring that possibility.

Overall, our respondents are putting technology to use a lot in their lecture halls and classrooms. Faculty reported using tech for instructional purposes on average about 62 percent of the time. One in 10 people (11 percent) uses it all the time. A quarter use tech three-quarters or more of the time. We’d bet those instructors are running primarily online courses.

The use of technology for homework is almost assumed among respondents. Ninety-four percent said they assign work outside of class that requires tech use.
## Hardware in Use in Learning Environments

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>In Use Now</th>
<th>Will Be in Use Within One Year</th>
<th>Not in Use but on My Wish List</th>
<th>Not in Use at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional desktop computers or workstations</td>
<td>82%</td>
<td>4%</td>
<td>2%</td>
<td>13%</td>
</tr>
<tr>
<td>Traditional laptops</td>
<td>82%</td>
<td>5%</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>Non-interactive projectors</td>
<td>72%</td>
<td>3%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Non-interactive, large-screen displays</td>
<td>61%</td>
<td>3%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Scanner/multi-function printer</td>
<td>58%</td>
<td>6%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Mobile phones</td>
<td>55%</td>
<td>5%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Cameras and other photographic equipment</td>
<td>53%</td>
<td>10%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Media tablets (iPad and Android tablets)</td>
<td>47%</td>
<td>6%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Tech-enabled lectern</td>
<td>46%</td>
<td>6%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Document camera</td>
<td>43%</td>
<td>7%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Interactive whiteboard</td>
<td>43%</td>
<td>7%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>Clickers/student response devices</td>
<td>41%</td>
<td>9%</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>Interactive, large-screen displays</td>
<td>31%</td>
<td>6%</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>Interactive projectors</td>
<td>28%</td>
<td>10%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>Detachable tablets (such as Microsoft Surface or Lenovo Yoga)</td>
<td>27%</td>
<td>6%</td>
<td>14%</td>
<td>3%</td>
</tr>
<tr>
<td>Tech-enabled student furnishings</td>
<td>21%</td>
<td>4%</td>
<td>15%</td>
<td>3%</td>
</tr>
<tr>
<td>E-readers (such as Amazon Fire)</td>
<td>21%</td>
<td>5%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Scientific sensors and probes</td>
<td>19%</td>
<td>4%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>Graphics tablets (such as Wacom)</td>
<td>15%</td>
<td>3%</td>
<td>11%</td>
<td>4%</td>
</tr>
<tr>
<td>3D printer</td>
<td>14%</td>
<td>4%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Chromebooks</td>
<td>13%</td>
<td>4%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>Robotics</td>
<td>9%</td>
<td>4%</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>3D scanner</td>
<td>8%</td>
<td>4%</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Die cutter</td>
<td>6%</td>
<td>3%</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>Virtual reality gear</td>
<td>6%</td>
<td>6%</td>
<td>18%</td>
<td>2%</td>
</tr>
<tr>
<td>Smart watch</td>
<td>3%</td>
<td>2%</td>
<td>9%</td>
<td>3%</td>
</tr>
</tbody>
</table>
The six most common forms of instructional tech hardware used in the classroom are traditional desktop computers or workstations (in use in 82 percent of learning environments); traditional laptops (also 82 percent); non-interactive projectors (72 percent); non-interactive, large-screen displays (61 percent); and multifunction printers/scanners and mobile phones (each with 58 percent). (See chart on the previous page.)

### Top Hardware on Faculty Wish List for the Classroom

<table>
<thead>
<tr>
<th>Hardware Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D scanner</td>
<td>19%</td>
</tr>
<tr>
<td>3D printer</td>
<td>19%</td>
</tr>
<tr>
<td>Virtual reality gear</td>
<td>18%</td>
</tr>
<tr>
<td>Interactive, large-screen displays</td>
<td>17%</td>
</tr>
<tr>
<td>Tech-enabled student furnishings</td>
<td>15%</td>
</tr>
<tr>
<td>Detachable tablets (such as Microsoft Surface and Lenovo Yoga, etc.)</td>
<td>14%</td>
</tr>
<tr>
<td>Interactive whiteboard</td>
<td>13%</td>
</tr>
<tr>
<td>Interactive projectors</td>
<td>13%</td>
</tr>
<tr>
<td>Graphics tablets (Wacom, etc.)</td>
<td>11%</td>
</tr>
<tr>
<td>Chromebooks</td>
<td>11%</td>
</tr>
<tr>
<td>E-readers (such as Amazon Fire)</td>
<td>10%</td>
</tr>
</tbody>
</table>

### Software in Use in Learning Environments

<table>
<thead>
<tr>
<th>Software Type</th>
<th>In Use Now</th>
<th>Will Be in Use Within One Year</th>
<th>Not in Use but on My Wish List</th>
<th>Not in Use at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processing</td>
<td>96%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation software</td>
<td>96%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online video services (YouTube, Vimeo)</td>
<td>89%</td>
<td>4%</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Learning management system</td>
<td>87%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gradebook</td>
<td>87%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-books</td>
<td>68%</td>
<td>5%</td>
<td>6%</td>
<td>21%</td>
</tr>
<tr>
<td>Classroom management</td>
<td>68%</td>
<td>4%</td>
<td>5%</td>
<td>23%</td>
</tr>
<tr>
<td>Scanner/multi-function printer</td>
<td>67%</td>
<td>3%</td>
<td>3%</td>
<td>26%</td>
</tr>
<tr>
<td>Lecture capture/screen capture</td>
<td>67%</td>
<td>7%</td>
<td>7%</td>
<td>20%</td>
</tr>
<tr>
<td>Social media services</td>
<td>60%</td>
<td>6%</td>
<td>4%</td>
<td>30%</td>
</tr>
<tr>
<td>Image editing</td>
<td>56%</td>
<td>3%</td>
<td>6%</td>
<td>35%</td>
</tr>
<tr>
<td>Video editing</td>
<td>54%</td>
<td>7%</td>
<td>6%</td>
<td>34%</td>
</tr>
<tr>
<td>Collaboration/whiteboard software</td>
<td>52%</td>
<td>6%</td>
<td>10%</td>
<td>32%</td>
</tr>
<tr>
<td>E-portfolios</td>
<td>43%</td>
<td>6%</td>
<td>12%</td>
<td>38%</td>
</tr>
<tr>
<td>Audio editing/mixing</td>
<td>42%</td>
<td>6%</td>
<td>9%</td>
<td>43%</td>
</tr>
<tr>
<td>Subscription-based education streaming services</td>
<td>41%</td>
<td>5%</td>
<td>7%</td>
<td>47%</td>
</tr>
<tr>
<td>Games</td>
<td>31%</td>
<td>6%</td>
<td>12%</td>
<td>51%</td>
</tr>
<tr>
<td>Adaptive learning</td>
<td>29%</td>
<td>6%</td>
<td>13%</td>
<td>52%</td>
</tr>
<tr>
<td>Animation software</td>
<td>26%</td>
<td>4%</td>
<td>17%</td>
<td>52%</td>
</tr>
<tr>
<td>3D modeling</td>
<td>15%</td>
<td>4%</td>
<td>11%</td>
<td>71%</td>
</tr>
</tbody>
</table>
Most people in the survey (74 percent) are using a mix of digital and paper-based textbooks for their courses. And a similar number are using open educational resources (OER), taking advantage of the numerous free and low-cost digital materials available for college study.

A large majority of instructors (79 percent) said they don’t require students to use some kind of fee-based homework system, such as Cengage Learning’s Aplia or WileyPLUS. Nevertheless, that still leaves more than one in five faculty members (21 percent) who do use those systems.

Getting Tech Help

A large majority of educators in this survey are fairly con-
ficient about their abilities to use technology. A solid 79 percent said their tech skills are “maxed out” or that they know enough to “get the job done” and adapt to new tech “quickly.” On the other end, a tiny number of respondents (less than 3 percent) acknowledged that they have tech skills that are “below average” or even nonexistent.

However, they aren’t so confident of the technical abilities of their students. More than half (52 percent) said students are only average in this area. Fewer — 39 percent — said their students are either excellent or above average.

As a natural sciences faculty member at a community college in Nebraska asserted, “While students know games and Facebook pretty well, they seem to be almost totally clueless about school- or office-use software that is about work rather than entertainment.”

Two-thirds of educators (65 percent) feel sufficiently supported in their use of technology on campus.

When help is needed, more instructors (30 percent) turn to the help desk or the IT department first, before any other source of assistance. That’s followed by online searching (29 percent) and peers and instructional technologists (16 percent each). All other options received single-digit responses. (See chart on the next page.)

<table>
<thead>
<tr>
<th>FACULTY REPORTING ON THEIR OWN TECH ABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolutely confident. My skills are maxed out.</td>
</tr>
<tr>
<td>Very confident. I get the job done and adapt to new tech quickly.</td>
</tr>
<tr>
<td>My tech skills are adequate.</td>
</tr>
<tr>
<td>I lack confidence. My tech skills are below average, and I’m a bit overwhelmed by new technologies.</td>
</tr>
<tr>
<td>I’m extremely incompetent with technology. I need help all the time.</td>
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<table>
<thead>
<tr>
<th>FACULTY REPORTING ON THE TECH ABILITIES OF THEIR STUDENTS</th>
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<tbody>
<tr>
<td>Excellent</td>
</tr>
<tr>
<td>Above average</td>
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<tr>
<td>Average</td>
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<tr>
<td>Below average</td>
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<tr>
<td>Failing</td>
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<th>DO YOU HAVE ACCESS TO ADEQUATE SUPPORT AND TRAINING FOR TECHNOLOGY IN USE?</th>
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<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>35%</td>
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</table>
One respondent, a faculty member in the library of an Indiana university, advised the integration of instructional designers into academic departments. She also recommended that we all stop viewing online classes as something “new and innovative.” By now, she said, those should just be “part of the regular teaching landscape.”

What the Future Holds for Technology in Teaching

Overwhelmingly, higher education faculty are an optimistic bunch when it comes to pondering the years to come. A full 97 percent said they believe that technology will play a positive role in education in the future.

However, the technologies that exist in classrooms today won’t necessarily be the same ones that are around in 10 years. In an open-ended question, respondents were asked to predict what education tech would die over the next decade. Desktop computers were mentioned by 29 percent of the 408 people who suggested anything at all. That type of tech won hands-down by a margin of nearly 2-to-1 compared to the next most popular choice: clickers, referenced in 16 percent of the votes.

One category that isn’t fully represented in any of these choices is self-service training. “I appreciate that my institution has made Lynda.com free to all faculty,” emphasized a liberal arts instructor in Texas. This video streaming course service “helps when trying to learn new tech skills, which we can then share with our students.”

Another area left uncovered in the survey questions: training in the use of pedagogy to support instruction with technology. “I fully believe that more instructors need professional development pertaining to the effective implementation of technology,” insisted an education instructor at a four-year not-for-profit in Kentucky. The two models or frameworks she specifically cited were TPACK and SAMR, both more commonly known in the K-12 world.

PREFERRED SOURCE FOR HELP WITH TECHNOLOGY

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<th>Source</th>
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<td>Online search</td>
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<td>Peers</td>
<td>16%</td>
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<td>Instructional technologist</td>
<td>16%</td>
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<tr>
<td>Product manual</td>
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<tr>
<td>Students</td>
<td>1%</td>
</tr>
<tr>
<td>Vendor support</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>3%</td>
</tr>
</tbody>
</table>

WILL TECHNOLOGY PLAY A POSITIVE ROLE IN EDUCATION IN THE FUTURE?

- Yes: 3%
- No: 97%

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WILL TECHNOLOGY PLAY A POSITIVE ROLE IN EDUCATION IN THE FUTURE?

- Yes: 3%
- No: 97%

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TOP 10 EDUCATION TECHNOLOGIES THAT WILL BE DEAD AND GONE IN THE NEXT DECADE

1) Desktop computers and laptops
2) Clickers
3) Non-interactive projectors and whiteboards
4) Document cameras/overhead projectors
5) Traditional presentation software
6) Interactive whiteboards
7) CDs and DVDs and their players
8) Printed anything
9) Current learning management systems
10) Computer labs and dedicated workstations

But desktop computers came in fifth when we asked people to specify which classroom tech they wished would die. (See chart on the next page.) The top choice there was the learning management system, followed by student mobile devices and apps; social media; clickers; and overall
“Inflated administrative affection for bloated applications.” And while respondents were dreaming big, we also asked them to predict which emerging technologies would become important to education in the next decade. The two that blow all other suggestions out of the water were augmented and virtual reality and 3D anything — scanning, printing and design. These two categories were referenced many more times than any other type of technology.

We also rather liked these emerging tech ideas, free for the taking by any ed tech vendor reading these results: data collection using drones, and device/app jamming for the classroom.

As a reminder that institutions vary widely in timeframe for their adoption of technologies, many of the categories that some faculty would like to put out to pasture are the same ones that instructors at other campuses can’t wait to get their hands on. Among those referenced multiple times on both sides of the argument: mobile devices, social media, clickers and learning management systems.

Or, as one faculty member in Kansas pointed out, “All past and present instructional technology is valuable. Depending on availability, there is no obsolete instructional technology. Because of diverse subject matter, it’s difficult to identify or assess how valuable a given technology is to others.”

How you view technology in teaching may have much to do with how well you’re able to maintain the emphasis on the real prize for a college education — what one education professor in Louisiana called “traditional learning.” By that she meant writing correctly, doing simple mathematics, and thinking without technology. “Learning does not always have to be fun,” she pointed out. “Learning is a necessary part of life and we need to raise educated individuals.”

Said another, “Tech is a fad that makes more work and reduces learning because now, instead of teaching English and writing, I’m teaching a person how to use a computer.” As this
FACULTY GRIPES

Want to know what about technology really bugs faculty? Here’s what they told us:

Tech without the training. As one tech-loving Kansas faculty member explained, “It’s absolutely useless and counter-productive to teaching unless it’s deployed strategically, used wisely and properly supported.”

The ease and speed with which students can cheat and plagiarize. “Students do not consider ‘finding an answer’ on the internet unacceptable,” grumbled one faculty member in Kentucky. “They do not see any difference between ‘finding an answer’ and researching a topic.”

Technology in search of a purpose. “Significant negatives have been caused by having technology shoved at faculty as solutions for which there are no problems,” moaned a fine arts instructor in Maryland. “The notion that technology can replace face-to-face [and] allow classes to be larger or remote is pervasive, and has denigrated the quality of education.”

Continuous upgrades. As an engineering professor in Minnesota lamented, “[Just] when I learn how to use it, they change it and I have to start all over.”

The cost of tech at the expense of other aspects of education. “Technology will suck financial resources, thus faculty will continue to be underpaid and community college education will continue its steady demise,” griped a liberal arts instructor and online coordinator at a New Mexico community college.

liberal arts educator at a New Mexico community college added, “Don’t get me wrong. I am a ‘technogeek’ myself. But that is not useful to my students or to learning. Thinking, critiquing, reading, practicing — those are important to learning.”

Dian Schaffhauser is a senior contributing editor for Campus Technology.
Bringing Peer Review Tech to the Classroom

The My Reviewers peer review software platform provides document management tools, resources and workflows for students, instructors and administrators in college and university writing programs.

Moxley, who is also director of composition at USF, has been working on the concept of peer review software for writing programs for more than a decade. USF began piloting My Reviewers in freshman composition courses during the 2009-2010 academic year. Since the peer review features came online in 2012, students at USF have conducted more than 88,811 peer reviews. Beginning in the fall of 2014, My Reviewers also was adopted by the university’s Professional and Technical Writing program.

Moxley said there are several problems inherent in college writing programs that My Reviewers can help alleviate. He noted that students in first-year writing courses are often asked to conduct peer groups in class — but there’s no easy way for instructors to sort through the peer reviews to distinguish unhelpful reviews from strong ones. Many students are unsure of how to conduct peer reviews, lacking models of effective comments or a system that holds them accountable. My Reviewers provides a way to optimize timely feedback from instructors and peers, Moxley explained. It enables instructors to more effectively administer peer review and assess the quality of peer-to-peer feedback in a digital environment. And real-time analytics allow instructors and administrators to make evidence-based curriculum changes, identify at-risk students, and research instructor efficacy.
Moxley and collaborators at several other universities, including Ross at Penn, have received $677,811 in funding from the National Science Foundation to study the use of My Reviewers in STEM courses.

For example, science faculty at the University of Pennsylvania are exploring how the technology can help them integrate more writing assignments into their courses. Doing so has been a challenge, Ross said, because busy faculty don’t have much time available for grading papers. “We thought that with training on this peer review software, the students could actually be responding to each other’s work in a way that advances their knowledge of peer reviewing, which they will be doing forever in some fashion,” she explained, “while developing social skills involved in peer reviewing and building their subject-matter knowledge. Because part of real peer review is to critique each other’s work in a way that advances their knowledge of peer reviewing, which they will be doing forever in some fashion,” she explained, “while developing social skills involved in peer reviewing and building their subject-matter knowledge. Because part of real peer review is to critique each other’s technical claims and problem-solving.”

She said peer review could help some students who are struggling with the sciences, because it immerses them in social learning as opposed to solo problem-solving. “So those who learn through social interaction and are more satisfied in a social community are likelier to be retained,” Ross said. “That is our hope and one of the questions we are studying.”

How it Works

In a nutshell, here is how My Reviewers works: Students upload texts to cloud storage; then, using a suite of document management tools (sticky notes, text boxes, highlights, hyperlinks), teachers provide feedback by inserting comments, providing endnotes, and assessing texts via rubrics that calculate scores through user-defined weights. Students perform peer reviews using the same tools. Comments and rubric scores are aggregated for assessment purposes; learning analytics track student progress by rubric criteria and project performance as well as measure curriculum effectiveness. Administrators mentor teachers using real-time evidence. The system has a permission-based architecture and can be configured so that access to student documents is viewable by a single instructor, multiple instructors or by mentors and instructors.

Moxley said that just having all the student writing and comments in digital form will help researchers better understand the writing process, collaboration and revision. “Historically there has been a lot of research regarding the helpfulness of both teacher and student commenting. One thing that digital tools afford is a much simpler way to analyze that,” he said. Also, in a digital space it is easy to aggregate all the comments you received over the period of a semester, both from peers and instructors, which can help students see patterns in their own writing.

In the first-year composition courses at USF, students write three papers, and for each of those papers, they write three drafts. The instructors and peers give feedback on those drafts, and the software aggregates those comments. The revision plan workflow pulls peer and instructor reviews and offers research-based, heuristic questions so that students engage with query-based feedback instead of directive feedback. A “Community Comments” feature provides a handbook regarding style, mechanics and grammar.

Students are graded on their review comments as well as their own papers. “In our first-year composition program, we attribute 30 percent of the grade to the peer review,” Moxley said.

USF charges students for use of the software, but the cost also includes e-books. “When they were charged for books alone it was $150,” Moxley pointed out. For the use of My Reviewers and the e-books, the charge is a much lower $47.

Digitizing the writing review process also is of interest to administrators focused on student success, Moxley said. “Everything is recorded by instructors,” he noted. “We can use that information to track student success over time. If we have students who haven’t turned in work or are doing poorly, people involved in mentorship can reach out and find out what is going on. We give reports to the office of institutional effectiveness, and they use them each year for accreditation reporting.”

Beyond the English Department

Moxley and collaborators at several other universities, including Ross at Penn, have received $677,811 in funding from the National Science Foundation to study the use of My Reviewers in STEM courses.
Marketing the Software

Although USF owns the intellectual property for My Reviewers, Moxley has formed a limited liability company and licensed the technology in order to make sales to other universities. His startup received a follow-on grant from an NSF program called I-Corps to help entrepreneurs commercialize technology funded by NSF.

So far, a dozen schools have tried the software. “I invited some schools prematurely, I think, because we weren’t quite ready,” Moxley admitted. “It took us a long time to develop a bug-free toolset.”

Moxley said some other universities have created peer review software, but those programs are not as full-featured. “The way we aggregate peer review data with the analytic reports and portfolio process, no one else has that,” he said. “We also place an emphasis on collaborative writing. The modern workplace requires collaboration skills. My Reviewers permits students to write as a group and evaluate other teams’ portfolios.”

One of the business challenges, Moxley said, is that people have a tendency to expect digital tools to be free. “We have spent over $1 million on development,” he said, starting with $250,000 in startup funds from USF and then the fees charged to students using it at USF. “This involved a lot of investment.”

Penn’s Ross believes My Reviewers has great potential as the field of writing studies moves toward being more of a social science. “Here you have an ideal marriage of pedagogy and metrics,” she said. “I think for us it is not only the peer reviewing, but also how to train the faculty and new instructors in assessment work. When you are looking at inter-rater reliability and consistency of evaluation, the tool is tremendous for that.”

David Raths is a freelance writer based in Philadelphia.
Building a New Model for Data-Driven Decision-Making

By creating a centralized Office of Analytics and developing a flexible analytics platform, the University of Maryland University College has leveraged data to reduce recruiting expenses, increase course completion and student persistence rates, and inform university policy.

THE University of Maryland University College, one of the largest distance learning institutions in the world, has long been an innovator in business intelligence and data warehousing. In fact, the platform it invested in building over several years proved so valuable to its own administrators that the university recently spun out its Office of Analytics into a startup company — HelioCampus — that provides both a BI platform and data analysis services.

UMUC enrolls more than 85,000 students worldwide. Most classes are taught either online or in hybrid format. In 2012, like many of its online learning peers, UMUC experienced enrollment volatility. (A large percentage of its enrollees are active-duty military, family or veterans, and the federal government shutdown impacted that population.) Among the challenges the institution faced: decreasing revenue from lower enrollments, an evolving business model and an increased focus on student outcomes.

In response, it created a new, centralized Office of Analytics, tasked with leveraging the university’s data to enhance decision-making on campus.

“We aimed to build a flexible platform that could answer many of the business questions that the university had,” said Darren Catalano, UMUC’s former vice president of analytics and now CEO of HelioCampus. “We needed to get information to the state and federal government and the University System of Maryland. We wanted to build a system where we could easily and in a timely manner answer the questions that the administration, faculty and other stakeholders had.” By integrating the BI platform with the student information system, learning management system,
When he first arrived at UMUC five years ago, Catalano considered recommending the purchase of a commercial business intelligence solution. “But when I looked at the vendors, I was underwhelmed,” he said. “There was nothing I saw that could help us, so we ended up building it out ourselves.” That decision has led to what is now HelioCampus. “We are taking what we built at UMUC and productizing it for the market,” he said. “It is a preconfigured data platform that we combine with services from our data analysts and scientists. It took us five years and more than $10 million to get to where we are today. With HelioCampus, we offer that to universities at a fraction of the time and cost. Our implementations run around six months and can be done faster.”

The HelioCampus platform enables the analytics team to provide services that include student metrics dashboards, operational reporting, variance analyses, predictive applications, forecast modeling and ad-hoc reporting. The system relies on the Amazon Web Services Cloud to host, process and deliver the data analytics services. It was built using open source tools to extract and compile data, including Python and R for building out statistical and predictive models. HelioCampus uses Tableau for front-end dashboard delivery and ad-hoc analysis, and the team is also experimenting with embedding D3 visualizations into dashboards.

Pete Young, senior VP of analytics, planning and technology at UMUC, stressed the iterative nature of the university’s investment. “We are on the fourth-generation product now. We gradually built the team and capabilities.”

First made a request for a modest investment and showed significant wins for the money, he said. That whetted the appetites of senior executives and showed what was possible.

One example of an early win was moving away from operational reporting and starting to build visual dashboards that rolled up the data and showed administrators overall trends, such as which metrics were declining or stubbornly flat. “That helped us start conversations at the university that they never had before,” Catalano said. “I call it the lights-on effect. They don’t know what they don’t know until you turn on the lights. Just aggregating data in a simple visual way facilitated meaningful conversations. We provided valuable commentary as an independent actor on campus, regarding enrollment and retention trends and strategy.”

To deal with enrollment volatility, they worked with the chief financial officer to put together a five-year financial forecast that identified the drivers and trends in enrollment. “They had trust in the data and in us,” Catalano said. “The university took evasive maneuvers to offset that trajectory, and two years later we were back in a positive state.”

“After we weathered those two years of enrollment volatility and pivoted back to growth, we had a challenge from our president to diversify our revenue and reduce our risk because we are very tuition-driven,” Young added.

In October 2014, he and Catalano approached the executive committee with the idea for forming HelioCampus. “By September 2015, we were in front of the Board of Regents securing approval to spin out our Office of Analytics and invest $10 million of state-supported budget into this new venture, which was an unprecedented move,” Young said.

After doing market research, validating the premise and creating a business plan, in January 2016 they launched the company and converted the office’s employees to HelioCampus employees. The new company, which has a staff of about 20, offers a SaaS platform and supporting data analysis services to deliver the solution developed for UMUC to other institutions across the country.

UMUC now contracts with HelioCampus to get the same services it was getting before, as well as enhance and build new capabilities. “UMUC is customer No. 1, but also the driver for research and development because we are probably more advanced than most of higher education,” Young said. “So we will keep pushing the envelope and demanding new innovations out of HelioCampus, which all the other customers can benefit from.”

David Raths is a freelance writer based in Philadelphia.
An Innovation Center Built for Flexibility and Transparency

Clemson University’s Watt Family Innovation Center is a state-of-the-art, tech-infused facility devoted to interactive learning and inter-disciplinary collaboration.

Creative Inquiry program, which emphasizes cross-disciplinary collaboration.

Under the direction of former Clemson President James Barker, the project was launched in 2012 and soon drew the philanthropic help of Clemson faculty member and entrepreneur Charles Watt and his family, who jump-started the effort with an initial donation of $5.5 million. Watt, who has been instrumental in founding and operating three advanced technology companies, including Electronic Systems Support and Scientific Research Corp., worked to get technology vendors involved in making donations. “We wanted them to be involved at the front end of the project, and the truth of the matter is if they had not been involved in this way, we couldn’t have built this building. We would not have had the funds,” he said. “We knew we were going to have to find partnerships. the founding innovation partners have been very dedicated. they want to see students coming out of school better prepared for the marketplace.”

Floyd Cline II, a senior associate at architectural firm

\[\text{Photo courtesy of Perkins+Will, Inc.} \]

Category: IT Infrastructure and Systems
Institution: Clemson University
Project: Watt Family Innovation Center
Project lead: Charles Watt, founding partner

INNOVATION CENTERS are becoming commonplace on university campuses, but few live up to the name as well as Clemson University’s (SC) Watt Family Innovation Center — both in terms of architectural features and the array of technology and collaboration options available to students and faculty. Opened in 2016, the four-story, 70,000-square-foot facility contains 73 spaces with audiovisual tools along with more than 4,300 pieces of hardware provided by 65 different vendors. It has become a natural home for Clemson’s

Perkins & Will, served as project manager on the building. Cline said the initial budget of $12 million didn’t match the lofty vision for the project, but the leaders didn’t let that stop them. They eventually doubled the budget to $24.5 million, and with all the technology donations the actual value of the project is probably twice that amount, he said.

The challenge was to design a space that could provide the kind of flexibility the university wanted so that spaces could
be rearranged overnight as new projects come in. “We investigated flexible solutions as far as mountable walls and raised access flooring systems,” Cline said. “Dr. Watt got companies such as Haworth Inc. involved with an in-kind donation of a furniture package. The building is able to achieve a high level of flexibility and transparency through the use of glass/solid demountable partitions on top of a raised access flooring system throughout,” he added.

To support interactive learning and technology demonstrations, the Watt Center features 191 large-screen, high-res, touchscreen monitors. Videoconferencing applications and wireless connectivity enhance collaboration capabilities. The building contains 12 video walls allowing for big data visualization and immersion. The network infrastructure gives project users access to the university’s high-performance computing resources. The Watt Center also enables virtual meetings with innovation centers across the state of South Carolina, including the University of South Carolina and the Medical University of South Carolina.

Founding innovation partner Philips contributed a 5,000-square-foot media mesh display system on the building façade that serves as a physical representation of the building’s vision. Cline described the mesh’s significance: “We were tasked with creating some sort of digital manifestation of the building that illustrated the high-tech quality of what is going on inside. The mesh is like a big TV screen but also transparent. It blends in with the architecture so it looks like part of the building whether it is on or off. We thought a solid device on the building like a billboard would take up space or block views and would be contrary to the transparency and innovation we were going for.” The media mesh faces a quad that is a central student space on campus and can provide information on upcoming events to be held in the facility.

The overall project required selecting and coordinating the work of a variety of vendors, including Cisco, Visix, Echo360, Brocade and Dell, which already had relationships with the campus, as well as a host of audiovisual companies.

Another example of the building’s cutting-edge design: Philips implemented a Power-over-Ethernet-based indoor lighting system combined with LED lighting to improve energy efficiency. The system gathers historical and real-time anonymous data from each lighting fixture to determine when a room is being used. The occupancy sensors trigger lights to turn on and off, and all the lighting can be controlled from a single, tailored software console. “When you step in a room, the lighting adjusts automatically,” Watt said. “Everything about the building has that kind of autonomy about it.”

Watt is enthusiastic about how the building serves the university’s Creative Inquiry program, which brings together approximately 500 students per semester from various areas for inter-disciplinary group projects. “This gives them a place to come together,” he said. “Even the hallways here have collaborative spaces. I see it as the first full-scale building to address the discipline of technology and how it enhances interactive learning.”

Cline said the most gratifying moment for him was visiting the building a week after classes started and seeing every space packed with students figuring out how to use the technology.

Ultimately, said Watt, part of the vision was to help attract high-caliber students and faculty to Clemson. “It is a first-rate building and I see at it as a model for higher education.”

David Raths is a freelance writer based in Philadelphia.
This summer, South Orange County Community College District (CA) held a kickoff meeting for its latest development project: Smartschedule. CT asked SOCCCD technology leaders Robert Bramucci, vice chancellor of technology and learning services, and Jim Gaston, director of IT-academic systems, why the class schedule is an important area for development and how it fits into their larger technology strategy for student services.

CT: What is Smartschedule? How does it fit in with other SOCCCD student services development projects you’ve done over the years?

Jim Gaston: Smartschedule is the class schedule for our two colleges, Saddleback College in Mission Viejo and Irvine Valley College in Irvine, located in Southern California. We originally put our class schedules online in 1995. Back then, they were just static HTML pages generated in a batch job each night. We upgraded to the first version of Smartschedule in 2002, adding information from the course catalog, faculty profiles, real-time enrollment data, section-specific deadline dates and campus maps highlighting the location of each class. A couple of years later, we added a class shopping cart that is fully integrated with the registration system in our home-grown student system. We are now in the process of designing and building Smartschedule 2.0, the next step in the creation of a class schedule that is truly student-centered. Since we built the original Smartschedule we have also built an academic planning tool (MAP), a student success recommendation engine (Sherpa), a portal that includes a student success dashboard (MySite) and a predictive analytics model that can predict the letter grade for every student in every course in our catalog. The intent of Smartschedule 2.0 is to bring all of this information into one place and present it to students in an intuitive and understandable way.

CT: Why are you focusing on developing technology based on the class schedule?

Gaston: The class schedule is a neglected area in higher education technology. That’s a shame because it is the exact place where students are making important decisions that will impact their future. Academic planning is the theoretical path, but the class schedule is the place students sift through what is actually offered and select desired classes. Too often, we build or acquire systems in isolation and then integrate them after the fact. For example, students use an academic planning tool to select a set of courses to achieve their goals, but when

“A class schedule is a neglected area in higher education technology. That’s a shame because it is the exact place where students are making important decisions that will impact their future.”

Scheduling for Student Success

A revamped class schedule system at South Orange County Community College District is re-imagining the way students formulate academic plans and achieve their goals. By Mary Grush
they browse the class schedule they have to sift through an enormous amount of data that is irrelevant to them. Why? If the student has told us that he/she has the goal of transferring to a university with a specific major, shouldn’t the classes that help meet that goal have a higher profile than those that don’t? Of course, we don’t want to lock students into a rigid path — we make sure they will always have the ability to easily switch views and browse the entire range of offerings. As a community college we want to encourage academic exploration.

Bob Bramucci: We want to “digitalize” the paper class schedule. When you take a paper class schedule and scan it, the result is now digital but it still acts pretty much like the paper schedule. in doing so, you’re missing chances at “digitalization” — i.e., re-envisioning the service as digital from the ground up. For example, when I first moved to Southern California, I depended on the “Thomas Guide” books of paper maps. Converting guide pages to digital photos is digitization, but adding “you are here” wayfinding, turn-by-turn directions and crowdsourced traffic is digitalization. Academia has had paper schedules for about 500 years, so this is a big opportunity!

CT: Are you developing this all in house?

Gaston: We have a great team of developers that includes staff and consultants who are not only wickedly smart but also passionate about student success. They have produced systems in the past that have won state and national recognition (including two awards from Campus Technology magazine) and they are excited to take on this new challenge. Last year we did a series of brainstorming sessions with college faculty and staff and compiled a list of desired features from those discussions. We also reviewed the online schedules of every community college in our state and many major universities to see what other institutions were doing.

Most importantly, however, is that we get students deeply involved in our development projects. Every year we hire a group of students to be on our design team and they are involved in every step of the process. They are in the room when we are kicking around ideas on a whiteboard. They are the first to review wireframes and mockups and they get to kick the tires on a series of prototypes. They work with us to organize and run focus groups with students selected at random in the quad at both of our colleges. We buy a stack of pizzas and offer students walking by our booth a free slice if they will take a few minutes and give us feedback on what we’re building. Finally, when we are ready to launch, the student design team creates help videos that explain to all of our students how to use the system our design team helped us build. Our student design team is a key component to our success.

Bramucci: And it’s not just what we build, or who the developers are — it’s how we build it. We’ve used “agile” software development methodologies for a decade, whereby diverse teams of developers, students, faculty and staff build working modules of software in a series of short “sprints.” This method is not only inclusive but very flexible.

CT: How would you state, very concisely, your major goals for this new development and for the investments you’ve already made in development around student services?

Gaston: We want to improve the success of our students by transforming the class schedule from a static repository of data into a guided pathway that helps students achieve their goals.

Bramucci: My goal is that we can fundamentally re-envision academic administrative processes to match the degree of service and personalization offered by leading digital companies.
Gaston: Our next big project is to build on the success of Sherpa and give it a more holistic capability. Sherpa currently sends out nudges in the form of e-mails, text messages, portal alerts, course recommendations and tasks in students’ personal to-do lists. However, each nudge is in isolation, and we want to improve that by providing a more cohesive and comprehensive set of steps students should take to succeed. We’re currently lining up funding and hope to work on this next project as soon as we are done with SmartSchedule 2.0.

We are also exploring ways we might share the systems we have built at SOCCCD with other institutions. We’re excited by the idea that our work might not only help our 40,000-plus students, but students all across the state or country. That by providing a more cohesive and comprehensive set of steps students should take to succeed. We’re currently lining up funding and hope to work on this next project as soon as we are done with SmartSchedule 2.0.

Bramucci: We know that by sharing and modeling more successful strategies for studying and navigating common academic and administrative tasks, others can help students improve their academic performance. What’s less certain is the extent to which these behaviors can be conducted or approximated by digital agents. Another upcoming system we are working on, My Online Mentor or MOM, aims to be a collection of digital agents that together provide communications that mimic those of a caring human invested in the student’s academic career — ultimately leading to higher levels of student success. CT
Upcoming Events

Sept. 10–19
The SANS Institute
Network Security 2016
Las Vegas

Sept. 14–16
UCLA
Mobility and Modern Web Conference
Los Angeles

Oct. 2–7
The Data Warehousing Institute
TDWI San Diego
San Diego

Oct. 25–28
Educause 2016
Anaheim

Nov. 2–6
Consortium of College and
University Media Centers
2016 CCUMC Annual
Conference
San Antonio

Nov. 6–9
League for Innovation in the
Community College
2016 STEMtech Conference
Philadelphia

Nov. 15–16
EduComm Expo 2016
Chicago

Nov. 16–18
Online Learning Consortium
OLC Accelerate
Orlando

To submit your event, e-mail rkelly@1105media.com.