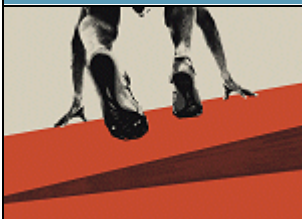


# CAMPUS TECHNOLOGY



Technology & the Community College

## The Three R's: Resourceful, Resilient, and Ready

- By Rama Ramaswami
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The economic slump's enrollment surge is coming up against shrinking tech budgets. But community colleges continue to find ways to deploy advanced technology to attract students whose expectations have not waned one whit.

**FOR YEARS, COMMUNITY COLLEGES** were the red-headed stepchildren of education," says Jimmy Duke, dean of the math and natural sciences division at **Calhoun Community College** (AL). "But now they're no longer thought of as 'just' community colleges."

Duke is referring to a widespread investment in technology by community colleges across the country that is boosting the image of these two-year schools and making them more competitive with four-year institutions. It's no secret that the US economic downturn has resulted in droves of professionals, job seekers, and high school graduates heading back to school to develop new skills, but the fact of the matter is that today, fewer of these students can afford a conventional four-year college education. Community and technical colleges typically charge tuition fees that are less than half of those at public four-year colleges, and one-tenth of those at private four-year schools, according to the [National Center for Education Statistics](#). Once viewed as inferior alternatives, community colleges are enjoying a spike in popularity-- and are scrambling to invest in technology that can help them meet the demand.

Still, while the enrollment surge coincides with the current recession, it isn't a recent trend: According to the latest report from the US Department of Education ([The Condition of Education, Special Analysis 2008: Community Colleges](#)), enrollment in two-year institutions has been rising steadily for several years, posting a 10 percent increase between 2000 and 2006. During the 2006-2007 academic year, the nation's 1,045 community colleges signed on 6.2 million students, or 35 percent of all post-secondary students enrolled that year. Though statistics for the 2007-2008 academic year are not yet available, most community colleges estimate enrollment increases of 10 percent or more from the previous year, with even higher registration for online courses.

Calhoun Community College, with a current enrollment of 9,000, is no exception. Duke says he expects an addition of several hundred students from the previous academic year. Technologically,

the college is prepared to handle the increase. "We've had a coordinated effort in technology going back about eight years," he maintains. The college started out with a course management system from [Blackboard](#) that was initially used only for distance education, but now applies to almost all traditional courses as well. In early 2008, Calhoun invested in [Tegrity](#)'s Campus 2.0 lecture-capture solution, which helped the college serve an expanding pool of distance learners. "We found that these kinds of things upgraded the reputation of the college," says Duke. "For instance, a student's mom could look over her son's shoulder and see a live presentation on the screen. She'd become impressed with the kind of technology we provide."

And, he adds, the college is planning to offer more. "We have not fully utilized video teleconferencing, for example," he points out. "We've done very well with asynchronous technology, but we're trying to grow the synchronous side. We're always looking for what's new."

At **Southern State Community College**, students log in from their homes or offices to **control their instructor's mouse and desktop** while he opens up databases and audibly guides them through their searches.

### Give Them an 'A' for Access

In fact, Duke is voicing a strategy that community college educators are increasingly adopting: using technology as a hook to attract more students.

"Is technology a selling point? Absolutely," says Eunice Bellinger, executive VP of academic affairs at **Genesee Community College** (NY). "Students see the technology, both in the knowledge-base and in our course delivery. We can't say our students are coming here *because* of the technology, but they certainly expect it when they get here, and it enables us to deliver efficient and high-quality education."

To do so, community colleges are focusing on their core strengths. One area in which two-year institutions have excelled: distance learning. The extreme diversity of the student body (working adults, part-time students, seniors, disadvantaged students) means that many individuals need to be able to study remotely at their convenience, tasking educational institutions with providing easy, 24/7 access to learning opportunities. Community colleges have responded to this challenge extremely well-- better than most four-year institutions, in fact. A May 2008 study of more than 1,000 higher ed institutions conducted by technology solutions hub [CDW-G](#) reports that 94 percent of community colleges offer distance learning, compared to 74 percent of four-year institutions (see "Room for Improvement"). Genesee, for one, has six campus locations spread out over a 2,300-square-mile rural area. But the college has invested in technology that connects the various locations and allows students and faculty seamless, single sign-on access to what the institution calls its "unified digital campus." Students at Genesee's outlying campus centers can go to the facility nearest them and take classes offered through a variety of distance learning applications, including podcasts and video and web conferencing. Many course resources also are accessible via home computer.

Similarly, **Southern State Community College**, serving five counties in an isolated section of southern Ohio, has invested in advanced technology to reach out to its far-flung students. With a small enrollment of 2,500 to 2,600, the college serves an area that is very sparsely populated and in which most residents are below the federal poverty level, according to Louis Mays, a librarian and professor of digital literacy at SSCC. He adds that about 20 miles separate each of SSCC's four rural campuses, forcing faculty and staff members to spend a lot of time traveling among those locations. But investments in technology are now slashing that commuting time. Moreover, Mays maintains

that SSCC is one of the few community colleges with a fiber optic network that supports both asynchronous and synchronous systems. Recently, he says, SSCC implemented [Wimba Classroom](#), a virtual learning environment, and Wimba Pronto, an instant messaging system. Both are part of Wimba's Collaboration Suite, which supplements course management systems with interactive technologies such as voice, video, podcasting, application sharing, polling, and whiteboarding. SSCC uses Wimba Classroom to teach both blended and entirely online classes, and as a supplemental PowerLink in Blackboard, its course management system.



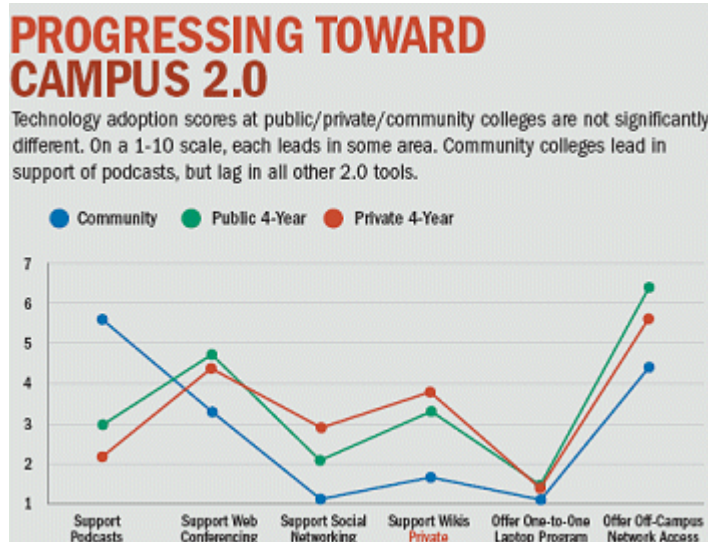
**CALHOUN COMMUNITY COLLEGE** is capitalizing on technology to serve an expanding pool of distance learners, as well as augment the reputation of the college.

The highly interactive software helps students develop the hands-on skills they'll need if they transfer to a four-year institution or enter the workplace. For instance, in his information literacy course, Mays uses the application-sharing function of Wimba Classroom to give guided online tours of different library databases. Students log in from their homes or offices and are able to control Mays' mouse and desktop while the instructor opens up various databases and audibly guides his students through their searches. In addition, his class members learn how to export references to [RefWorks](#), an online research management program that allows the creation of a bibliography in any format required.

The college also is increasingly using Wimba to hold departmental meetings, workshops, and other events (such as guest lectures) online. "We're eliminating the need to travel so much, and there's a lot of potential for staff development through online meetings and training," says Mays.

### Pumping up Administrative Efficiency

Mays is just one of many community college educators who are excited about the potential of technology to streamline administrative processes. "That's where the big story is for us," declares Bill Campman, VP for information technology at **Tallahassee Community College** (FL). "We launched three portal sites that have driven huge organizational change for us."



The portals, one each for the college board of trustees, faculty/staff, and students, have transformed information exchange. "The board of trustees meeting now engages the board members with the college leadership at a different level," says Campman. "Instead of having a [PowerPoint](#) presentation 'pushed' to them, the board members can navigate themselves, and engage with the presenters during the workshop. Each board member has a laptop in front of him or her, as well as a presentation display. Once information has been shared with the board, the college leadership will share the same presentation with all the deans and the senate. This allows

one version of the information to be available to all. Additionally, it is posted on the web."

Campman adds that the faculty/staff portal works much the same way, with everyone being able to access and share timely information. The student portal is another all-in-one, single sign-on system for registration, advising, payment, e-mail, the learning management system, and other campus resources; social networking and other tools are under development.

"We'll continue to invest in our portal environment, mostly in human capital, because we already have the IT infrastructure," Campman says. That infrastructure is largely Campman's doing. He lists his achievements in the three years that he has been at TCC: "Since I arrived, we have replaced our core switching infrastructure, installed a new 22TB SAN [storage area network], migrated from [Novell](#) GroupWise to Microsoft Exchange, provided Exchange accounts for all students, added wireless connectivity across the entire campus, upgraded our internet bandwidth from 6MB to 90MB, migrated from a Novell network to a Microsoft network, migrated our [IBM](#) VSE mainframe ERP system to a [Linux](#) platform, and built a data warehouse." And he isn't done yet. He's in the process of replacing TCC's networkswitching infrastructure, moving to VoIP, and shifting some enterprise applications to the portal systems.

Campman's work has delivered tangible payoffs. For example, in the 2008 fall semester, using the portals and data warehouse allowed TCC's faculty and staff to launch a campuswide student enrollment and retention campaign in just one day. More importantly, technology upgrades have allowed TCC to cut its operating budget by \$500,000-- welcome news for college administrators who may balk at investing in new systems.

Certainly, as state and local governments slash their budgets, community colleges (which typically receive 60 percent of their funding from these sources) are bracing to take a hit. But in fact, say the pundits, now may be the best time for schools to build a solid IT infrastructure that is flexible and scalable enough to accommodate tightening budgets, according to Anthony Hardy, director of technology and information systems at **Jefferson Davis Community College** (AL). Hardy should know: He's been charged with updating JDCC's aging IT infrastructure without spending too much.

### Room for Improvement

**IN OCTOBER 2008**, technology products provider [CDW-G](#) released a survey of campus IT entitled, "The 21st Century Campus: Are We There Yet?" The answer to that question: both yes and no, according to the results.

While a majority of the 1,000-plus students, faculty, and IT staff surveyed recognize the importance of technology in the classroom and workplace, technology is not always widely available on campus, and what is available isn't used to the fullest extent. For example, just 33 percent of faculty members say technology is fully integrated into their campus; 57 percent of faculty members who teach in a "smart" classroom say they don't use the technology daily; and 55 percent of all respondents believe that faculty members' lack of knowledge regarding the use of technology is the most significant impediment to IT on campus. But students aren't exactly tech-savvy either-- the vast majority don't use videoconferencing (91 percent), web conferencing (88 percent), or wikis (73 percent), and 83 percent don't listen to podcasts.

The 137 community college respondents largely mirror the overall results, with a few exceptions.

Ninety-four percent of community colleges offer distance learning, compared to just 74 percent of four-year public and private institutions. (See "High on Distance Learning, Low on One-to-One".) On an index of 20 indicators of how well an institution is integrating technology into the educational experience, community colleges score an average of 48.47 out of 100, slightly better than the all-institution average of 46.08. Community colleges also lead in supporting podcasts.

"But if you look at other indicators, there's room for improvement," says Josh Roberts, senior sales manager for higher education at CDW-G. "Community colleges lag behind in other areas, such as offering off-campus network access, wikis, one-to-one laptop programs, and some other technologies." (See "Progressing Toward Campus 2.0".)

Still, community colleges will narrow the gap quickly, Roberts says, because of two strategies they're using: creative outsourcing of IT to technology providers, and investing in back-end technology. "The thing that is important to them is return on investment," says Roberts. "So they'll be funding projects that will save money. Say they don't have in-house IT and they're running out of network storage; they'll come to us and say they have a problem. Their account manager will use our back-end storage engineers to come up with a solution."

Roberts expects technology vendors to place a "pretty big emphasis on the community college space" in the next two years. For their part, he emphasizes, the colleges will be focusing not on front-end equipment like PCs, but on "things that are pertinent to the back end of the business," such as network upgrades and enhanced data storage.

"We hope to make everything as advanced as possible," he says. "We want to focus on the end user experience rather than on the technology behind the scenes. But we have a lot of cost-saving measures in place."

Virtualization technology gave Hardy the balance of performance and economy that he needed. His investment in servers from [Virtual Iron](#) has resulted in a "40 to 50 percent savings on hardware," he says. "We badly needed to add new servers and replace existing ones. Where we had 10 or 12 physical servers previously, we now have four physical servers and upwards of 18 or 20 virtual servers. We've also moved to a storage area network for the back end."

Hardy acknowledges that he's had to do a lot of work. But he's confident that virtualization is the right move for JDCC: "It allows us to keep our computers modernized, prepare for replacement, and still have additional funds for more technology and smart classrooms. We need to make sure we can keep replacing the old setups we have." In addition, Hardy would like to increase the school's wireless coverage from its current 80 percent level. And he plans to find the money to do what he considers essential by economizing on things that he believes the college doesn't need as urgently. For example, he says, although the JDCC system has a firewall, it doesn't have network access control. "It's a funding issue. It's simply not worth the cost for the 70 or 80 students who may get on the network."

One other cost-cutting strategy that Hardy advocates is the use of free software. He uses [Panopto's](#) CourseCast software for lecture capture. Available free to academic and government institutions, the software offers a simple user interface that allows faculty to capture and distribute content with very little training-- freeing up IT staff for other tasks. "I don't have to have my people do the editing or posting," says Hardy. "A lot of schools have the capability to use free software but don't use it."

To purchase IT equipment, Hardy negotiates passionately, using the state contract as a starting point,

and shopping as many as 17 vendors. "It's good old-fashioned bargaining," he says. "We leverage them against each other and they offer us a better deal."

But ultimately, he maintains it's virtualization that has revolutionized the college's approach to technology. "Virtualization was a big one for us. It was our key to setting ourselves apart from other schools." Though admittedly a "huge step," Hardy insists JDCC has been able to do it economically. "Other community colleges have spent three times what we have on software alone, to get the same capacity. Thanks to virtualization and the cost savings from it, our students get access to the same technologies, and we're able to have modern PCs, flat screens, and the most modern programs available."

Currently, JDCC has one PC for every 2.5 of its roughly 1,200 students. While its classes are not exclusively online (about 80 percent are traditional classroom courses), all are required to be posted on the school's Blackboard course management system. "We encourage students to use the technology," says Hardy. "We're seeing a fairly rapid increase in online enrollment-- 15 percent each year in the last three years. In the next two years, the goal of our dean of instruction is to offer a fully capable online degree."

### **Farming IT Out**

For institutions that don't have the inhouse IT capacity to meet technology needs, outsourcing may be the most economical option. Genesee Community College, for one, has outsourced all of its administrative and academic technology needs to [SunGard Higher Education](#). The vendor provides about 15 employees on-site, as well as a remote database administrator; manages four people on the college's IT staff; and advises college faculty and staff on planning and writing grant applications for acquiring and implementing technology.

The arrangement allows the institution to furnish its 6,600 students with an array of advanced technologies, including 80 smart classrooms (or 60 percent of all available classrooms) equipped with networked computers, projection systems, document cameras, video/ DVD playback equipment, and internet access. The Blackboard course management system in use at Genesee is linked to SunGard's Banner administrative suite, enabling faculty and students to go back and forth between the two, and automatically populating students into courses. Through SunGard's Luminis Platform, which provides portal and web services delivery and integration capabilities, users gain single sign-on access to the GENesee Electronic Student Information System (GenESIS), a unified digital environment comprised of many systems.

Server virtualization was the right move for **JeffersonDavis Community College**, keeping computers modernized, the school prepared for technology replacement, and **opening up funds for more technology and smart classrooms**. It has been the key to setting JDCC apart from other schools.

"Our college is investing in technology to be on the cutting edge," says Genesee's Bellinger. "We need to mirror the technology that our students will be using on a daily basis. It's a question of fulfilling the needs of the workplace, not just a matter of increasing our prestige. With the economy the way it is, community colleges are now a much more viable alternative. We have to match the quality of a traditional four-year education in two years."

Mays at SSCC isn't setting his sights quite that high, but he agrees that technology is allowing community colleges to broaden their vision in many ways-- and thus helping students broaden theirs. "We're not in competition with four-year schools," he says. "We cater to a specific type of student

such as a transitional student from high school, or a non-traditional student coming back. But technology has exposed our students-- many of whom have grown up in very isolated environments-- to experts and guest lecturers in other parts of the world." For example, SSCC offers a two-credit seminar course, The Genographic Project: A Journey Through Humankind, which is based on genetic and DNA research conducted by the National Geographic Society. A highlight of the course is an online connection-- through SSCC's Wimba software-- to the project's director, Spencer Wells, an eminent geneticist and National Geographic Explorer-in- Residence.

A welcome side effect of community colleges' investment in technology is that it allows them to stress the "community" in their name. Mays is proud that SSCC's technology was able to help residents of Hillsboro who were affected by global delivery company DHL's December 2008 layoffs in nearby Wilmington. "We worked with county task forces to get ready for the layoffs. We had licenses to provide access to databases and made arrangements with two vendors to break their database licenses with us so that DHL workers could access two of their workforce development databases. We knew we needed to be sensitive to what our nation is going through, so we've been thinking outside the box. This was not a conventional use of technology."

#### High on Distance Learning, Low on One-to-One

	% Community Colleges	% Four-Year Public and Private Colleges
Offering distance learning	94	74
Offering a wireless network	94	96
Offering a course management system	83	87
Offering off-campus network access/ computing	44	62
Offering one-to-one laptop programs	11	12
Percentage of students reporting they can always get a seat in a school computer lab	49	44

Source: CDW-G 21st Century Campus Study

For Calhoun's Duke, "Technology is useful in *any* course, not just in distance education." What about the economic downturn? "Technology tends to come down in price as the new becomes the routine," he maintains. "We *have* to keep investing in it."

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#### About the Author

Rama Ramaswami is senior editor at The Economist Group, publisher of The Economist, Financial Times, and other international publications. She is based in New York City.