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Education Upgrade

Colleges shake their reputation as late adopters

By Lorna Collier

Imagine a college classroom where all the students have iPhones ready to receive documents and other information from the professor: surveys that can be immediately answered, lesson texts or videos and weblinks to supplement the current lecture.

As of fall quarter 2008, Abilene Christian University will be the first school in the United States to equip all its incoming freshmen with iPhones. The school has developed about 15 applications for these phones, including course registration, 3-D campus maps, surveys, podcasts and emergency alerts.

Using Internet-connected smartphones is just one example of how mobile broadband technology is expected to make a significant impact on education in the near future. It's one of several trends explored in the 2008 Horizon Report, an annual review of emerging technologies in education produced by The New Media Consortium and the EDUCAUSE Learning Initiative, in cooperation with 36 education and technology experts around the world.

"These technologies can radically influence the way schools serve their increasingly diverse students, creating the potential for a paradigm shift in education," says Donna L. Russell, assistant professor of education at the University of Missouri-Kansas City, who was part of the team developing the Horizon Report.

Theresa Overall is an associate professor of education at the University of Maine at Farmington. Like many educators, she believes using such tools helps students to "think at a higher level and produce better-quality work."

She uses a classroom "wiki" (or communal Web site) for student assignments. "It's about allowing students to use tools that they are comfortable with," says Overall.

What else is on the horizon for teachers and students? Take a peek into the classroom of the future.

Mobile broadband

Abilene Christian University may be taking the lead by offering iPhones to every student, but the Horizon Report predicts smart phones will be more widely adopted in the coming years because they have so many

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potential educational applications -- especially with the recent release by Apple of software development tools that allow users to create custom iPhone programs.

"The big surprise is campuses haven't started to pay much attention yet," says Larry Johnson, chief operating officer of The New Media Consortium, especially since smart phones can be used to collect data, record and upload sound and video, take notes, answer polls and view video podcasts. Slowly, however, the technology is catching on as a curriculum aid.

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Grassroots video

Colleges and universities are making use of custom YouTube channels and "iTunes U" to place videos of lectures, scientific demonstrations and campus events for students to easily download. Technology-forward educators say that video helps them demonstrate concepts that are more easily shown than written about, such as life-science lessons.

"If you look at grassroots video produced in the academic environment, the proliferation is more in the life sciences than anywhere else," says Jerry Sheehan, manager for government programs development at the California Institute for Telecommunications and Information Technology.

This is because, says Sheehan, students studying life science "have to have ways to visualize it -- you can't understand it without visualizing."

This fall at George Fox University in Oregon, all students will receive Mac laptops equipped with Apple's iLife software suite, which includes video-editing capabilities. The school's chief technology officer Greg Smith says this uniformity in software and hardware will make it easier for teachers to incorporate things like grassroots video into their curricula.

"The students' increased ability to express themselves via video will allow them to more accurately describe what they have learned," says Smith.

Educational wikis

Becoming quite common in schools today are wikis -- collaborative, usually topic-specific Web sites to which a group of people can contribute. Like the University of Maine's Theresa Overall, many teachers set up a wiki for a unit of study or a course, and then require students to post what they've learned and collaborate on entries that include text, pictures and videos related to the topic. Professors can review the students' work in progress and leave notes.

Wikis can be even more far-reaching than a single classroom. For instance, the Flat Classroom Project brings high school students in the U.S. and Qatar together online for discussions and to create video or other projects.

Rochester Institute of Technology created a Digital Entrepreneurship "Ning" site, which lets undergrads connect with venture capitalists and business owners from around

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the world.

"The whole idea was to create something out in the open ... with students aggregating information in a way that was valuable to the community, and the community contributing by offering insights to the students," says Vic Perotti, associate professor at RIT, who directs the "DigEnt" site.

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Since the site began in March 2007 with 24 RIT students, says Perotti, it has grown ten-fold, which Perotti attributes in part to its hosting on Ning -- a "network of networks" visited by other network creators worldwide.

"What is special about this community is that it approaches learning in a very open way. We conduct the process of entrepreneurial education in the context of real-world entrepreneurs and investors, and invite them to participate however they choose."

Overall keeps her classroom syllabus on her wiki, and uses it for everyday classroom sessions. "If

we're brainstorming a list as a class, I don't write it on the board; I make a new wiki page and type as we brainstorm. Then when we're done, we have the list in a place where everyone can access it later. Before, someone had to write it down on paper or else we lost the list."

Data mash-ups

Data mash-ups -- which are expected to become more common in schools within the next two to three years -- combine information from multiple data sources into one tool.

Purdue University currently "mashes" Google Earth with historical data to create "Visible Past" -- a site that allows students to see a rendering of how historical sights may have looked in the past.

Professor Susan Smith Nash -- a mash-up expert -- used a combination of sociological databases in an interdisciplinary course at the University of Oklahoma this spring. Nash had her students probe the connection between rural poverty and cultural isolation in the U.S. by mixing census and zip code data with Yahoo maps of restaurant and retail locations.

Programs such as Yahoo Pipes and Microsoft Popfly let students or teachers easily mash together a variety of resources.

"Students can drag and drop together media from various sources, such as YouTube, Google Maps, the New York Times, Flickr and any other Web site with an RSS feed," says Perotti. "The hybrid feeds that they create are truly novel forms of communication that offer unprecedented linkages."

Collective intelligence

Every time you type a search question into Google, you



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leave a "search trail" that goes into a database. This is one example of collective intelligence, what the Horizon Report describes as "information stores created in real time by thousands of people in the course of their daily activities."

Collective Intelligence isn't expected to impact education for a few years yet, but Johnson says it is coming. "We're seeing more and more data collections and collections of papers incorporating folksonomy -- the idea of people putting tags on how things should be categorized, as opposed to the way an expert might," says Johnson.

Another technology just beginning to emerge in schools -- with more usage expected in the next four to five years -- is social operating systems, says Johnson. This technology is an expansion of today's social networks like Facebook, which will allow teachers and students to evaluate the reliability of academic data they find online, and find research partners for collaborations.

UM Farmington education professor Theresa Overall believes the new technologies in the Horizon Report are here to stay. "I can't imagine going back."

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