

# Class: Funding shortage limits campus technology use

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controversy, however. Many students and faculty are wary of embracing the changes, and support of the new technology is mixed at all levels of the University. At the same time, proponents such as Bothun say the shift is both necessary and inevitable.

One of the first in the country to use instructional technology, Bothun has been researching its effects in the classroom since 1993. He says providing students with resources such as online experiments and links to relevant information gives them a vital opportunity to apply their education.

"All students want to do these days is memorize stuff," he says. "The subversive part of all this is to build an interface that makes students think."

History Professor John Nicols, who's been using Web-based lectures and material since 1994, says instructional technology gives him the ability to broaden and enhance his students' class experience.

"I can take them to an archaeological site [on the Web] that before they would have had to go to a professional journal to get information on," he says.

Still, many students fear that instructional technology, among other things, replaces the much-needed human interaction between professor and student.

"It's really impersonal," sophomore Emily Neve says. "I'd rather have professors go back to the old style."

Neve, who is enrolled in Bothun's Physics 161 class, says "innovations" like requiring assignments be sent over e-mail are more tedious than groundbreaking.

"If I'm going to write it down, I'd rather turn it in as a hard copy," she says. "I feel like I'm doing it twice."

Bothun and Nicols say the technology is simply meant to supplement existing teaching methods, not supplant them.

"It very much helps me teach my students," Nicols says, "but it's not a replacement for me in the classroom."

Still, some students are intimidated by the new technology, says Nimblewill Dearden, a graduate teaching fellow in Nicols' History 101 class, while others find the technology helpful.

"It's the best students who are making the best use of the new material," she says. "It allows beginning students to synthesize and see what good class notes

## Education on the Web

Some addresses for instructional technology at the University:

■ **PHYSICS 161** (zebu.uoregon.edu/1997/phys161.html): Syllabus, lectures and tons of links.

■ **PHYSICS DEPARTMENT** (zebu.uoregon.edu): Multifaceted location receives more than 40,000 hits a day.

■ **HISTORY 101** (darkwing.uoregon.edu/~jnicols/hist101/index.htm): Links and animated maps integrated into lectures.

■ **NEW MEDIA CENTER** (nmc.uoregon.edu): Click on Portfolio and check out past projects.

look like."

Through student evaluations and homework responses, Bothun has documented about an 80 percent acceptance rate of instructional technology in his classes. That remaining 20 percent, however, is strongly negative, he says.

One portion simply rejects the logistical portion of the technology, which includes getting an e-mail account and navigating the Web, Bothun says. The other portion simply can't use resources such as a keyboard or mouse, and is far more troubling.

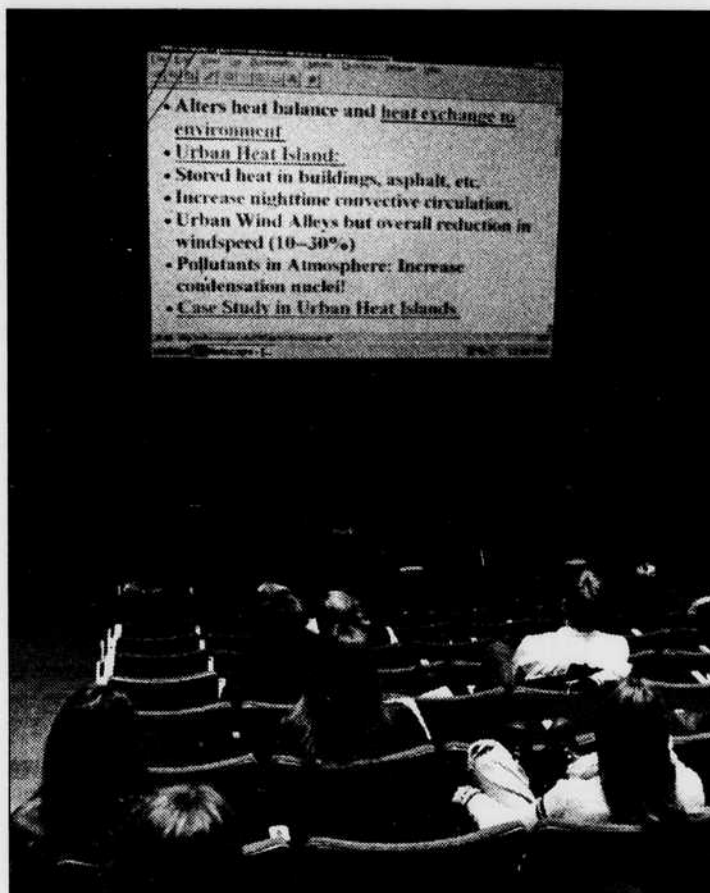
"They psychologically are unable to do it," he says. "For them, this approach is worse. I worry about that, but I worry about those people in general as well."

Reactions are equally mixed among University faculty, who ultimately must embrace the technology in order for it to survive, Bothun says. Professors fall into pretty defined groups, says Mike Holcomb, director of the University's New Media Center, which helps develop technological projects for faculty.

"In some quarters, there's a feeling that this work should not really be what the University is about," he says. "On the other end, there are those who embrace the technology, whether they should or not."

The developments in Web-based software, however, offer professors the perfect opportunity to meld research and teaching, Bothun says. Instead of teaching through an outside textbook, faculty can pass on their own knowledge to students, he says.

"Professors are hired because they know about a subject nobody else knows about," Bothun says. "But after they're hired, they don't use that knowledge; they just



Students look at a Web page illustrating environmental case studies during Professor Greg Bothun's Physics 161 class.

serve as a filter for a third party."

If a professor is not using the technology, he or she is behind the times and is quite possibly offering a deficient curriculum to students, Bothun says.

"We're here to educate people," he says, "and part of that is to teach students the way to communicate in the world."

Nicols says if a professor is not using the technology, students should take action.

"With the [\$150-per-year] tech fee, students ought to expect faculty to bring the technology to them," he says. "If they aren't getting it, they ought to demand it."

Some faculty and staff, however, say instructional technology is not universally applicable. Instead, the discipline and teaching style of a professor should determine whether he or she uses the technology, Holcomb says.

Dave Tyler, head of the chemistry department, says only a quarter of his faculty use Web-based instruction in class. Computers are used in many labs, he says, but until the Web is necessary for the discipline, it won't be implemented.

"The need's not there yet,"

Tyler says. "If there's a huge demand for it, there's no question we'd do it."

Bothun admits that the technology currently fits the sciences better, with their focus on computing and digital data. But if funding is present, he says, the changes will permeate into every field of study at the University.

"This is not a choice," he says. "It's here to stay, so you better know how to use it."

Such a revolution, however, is contingent on how the University supports the technology as an institution. Current funding levels for instructional technology total about \$8 million a year, Provost John Moseley says, and a wide variety of resources exist to help professors develop electronic curriculum.

Most professors trying to implement the technology, however, say the support is inadequate. Bothun, for one, wonders why a system isn't set up to reward faculty for developing new teaching methods, including those in the electronic realm.

"There's no institutional motivation for this," he says. "That policy has to be changed if the

University is serious about this type of electronic curriculum."

Nicols says the wiring in many classrooms doesn't meet the demands of the many professors who want to use the technology.

"It takes me eight minutes to set up before every class," he says. "Students are tripping over all my own wiring. It's a very awkward situation."

Moseley admits the University's funding of instructional technology is hardly at an appropriate level, but he points to the recent awards the campus network and electronic curriculum won as indicators of the institution's efforts.

"We simply don't have enough money to do all the things we need to do," he says. "We have an excellent support structure, but it is smaller than we need."

Tools in the implementation of teaching technology include the Educational Technology Steering Committee, formed in 1994, and the New Media Center, which develops high-level multimedia projects for faculty.

Holcomb says one major stumbling block for the University will always be cost. Quality Web-based projects come at such a high price that the center can only afford to work on three projects at any given time.

Ultimately, he says, the burden of supporting the technology should rest with the taxpayers. Legislative support for the changes has so far been nonexistent despite the technology committee's lobbying efforts last year. "This is not an issue of the University so much as it is about whether taxpayers know what it means to maintain viable higher education in their state," Holcomb says.

Even if funding is secured, the future of instructional technology at the University is far from certain. Bothun says he's documented a 10 percent improvement in exam scores since implementing Web-based courseware, but true conclusions are still several years away.

"It's all too soon to prove whether this method is better, but conversely, it hasn't proven to be a failure yet either," he says.

Until that point, professors, students and administrators alike agree caution is all-important in the face of ever-changing technology.

"We still need to be able to learn without being dependent on these things," junior Kate Hulpke says. "If the power goes out, it shouldn't be the end of the world."

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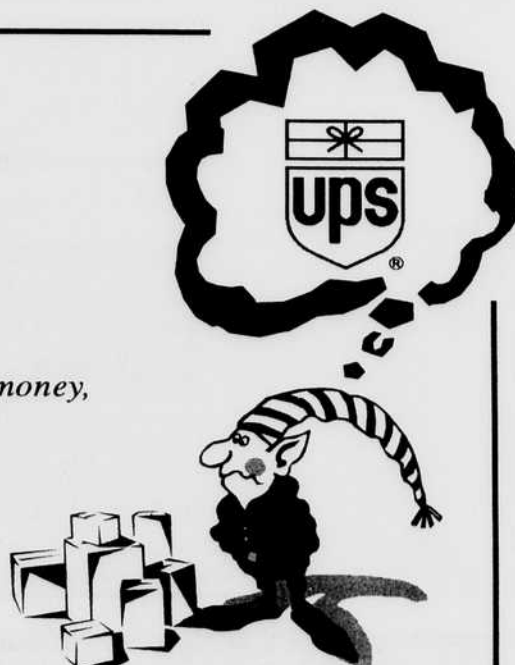
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