

IV. New Approaches to Distance Learning

Educational institutions play a pivotal role in today's information society. That is at least as true in rural areas as in cities and suburbs. This report already has shown how an enterprising state university in North Dakota is spearheading a drive to use the Internet as an engine to diversify the rural economy, and how a university hospital in Vermont is bringing the latest advances in emergency medicine to outlying regions. This chapter offers two case studies of how rural universities are using new technologies in their core activity — education. In West Virginia, Marshall University is experimenting with techniques that could make distance education more personal — and hence, more like face-to-face learning. Back in the Great Plains, meanwhile, North Dakota State University is using modern communications technology to adapt its extension service to meet the needs of a rural society with a rapidly changing, and ever more complex economy.

Both universities are experimenting with broadband videoconferencing. But their ultimate aim is to change the way people organize their jobs and relate to each other. In Marshall's case, new videoconferencing tools are giving professors a new way to teach, while for NDSU, they are creating opportunities for extension agents to extend their reach and offer far more advanced services than was possible in a day of slower communications.

Electronic Education with a Personal Touch

Robert B., a counselor at Tug Valley High School and Varney Elementary School in Mingo County, West Virginia, wants to earn a doctorate so he can become a school administrator. But with two small children and an elderly parent, he cannot easily quit his job to attend graduate school. Neither can he work part time and commute back and forth to graduate school. On a good driving day, West Virginia University, where he wants to study, is a four-and-half hour drive from his home in Gilbert, a town of 500 people snuggled in the sparsely populated southern part of the rugged Appalachian state. For drivers who encounter bad weather or find themselves stuck behind any of the slow trucks that regularly haul coal along the region's narrow, mountain roads, the trip can stretch much longer.

Despite such obstacles, Robert has managed to keep his job, work toward his degree and even teach a graduate-level course in counseling — all while staying in Gilbert. The key: a combination of Internet-based courses and live classes beamed to an interactive classroom at Gilbert's Larry Joe Harless Community Center. "This center allows me to continue my studies and my employment as a school counselor, without having to relocate," says a pleased Robert. "It is my hope that this center can continue to grow and be used by the people of this area."

As Robert's experience demonstrates, distance education is more than just another

modern convenience for people who live in rural areas. It can be the best hope for personal advancement in a world where education increasingly determines economic and social success. What's more, it can be a lifeline for entire rural communities like Gilbert, which face a continuing struggle to attract and keep professionals.

But what is the best way to deliver education to these far-flung students and communities? Skeptics question whether either of the two leading models — Internet-based courses or large-scale multimedia classrooms with high-speed video connections — are as effective as old-fashioned face-to-face discourse between teachers and students. In response to such concerns, Marshall University, which established the computer center where Robert studies, is experimenting with a third, middle way to bring learning opportunities to rural communities.

The “Old Way”: Internet and Interactive Television

Marshall, which is based in Huntington, West Virginia, has more than an academic interest in distance-learning technology. West Virginia has the



smallest proportion of high school graduates who go on to college in the nation. The distance between outlying areas and colleges, along with the high cost

of higher education and cultural barriers, discourage many prospective students. In addition, adults often find their opportunities to return to school limited by demanding job schedules and family obligations. The lack of educational opportunities complicates efforts by the state to attract new employers; West Virginia's unemployment rate was 5.3 percent in May 2001, compared to 4.5 percent nationwide. Yet communities like Gilbert have trouble filling even existing professional jobs. At the beginning of the 2000-2001 school year, for instance, school districts around the state had nearly 200 teaching positions they couldn't fill due to a lack of qualified applicants.

To turn this situation around, schools like Marshall have to find ways to make education more accessible to students in outlying areas. Like many universities, Marshall has invested heavily in developing Internet-based courses, which are accessible anywhere and anytime, and generally can be conveyed over regular telephone lines. Because such courses allow students to learn at their own pace and on their own schedules, they have proven especially popular with stay-at-home mothers and mid-career professionals. And even some students who live on campus take advantage of the ability to set their own pace.

Critics say Internet-based learning lacks an essential ingredient, though: personal interaction with professors and peers. Students are divided on the issue. “I thought there would be a loss in the classroom atmosphere by not meeting on a regular weekly schedule, but that hasn't happened at all,” says Donna B., who lives near the small town of Marlinton, West Virginia, and is working on an advanced degree in education at Marshall University

Graduate College. “Through the use of chat rooms and email, we keep in touch and help each other out just like real life.”

Robert, while insisting that the benefits of online learning outweigh the limitations, has a different view. “My only regret is that the distance courses that I have taken often lacked community,” he says. “Frequently, my colleagues are voices over a phone or print on a screen. Maybe this is a good thing — I don’t know. It does force me to be a bit more exacting in my assignments than I would normally be in a traditional classroom. I must admit, however, that I sometimes get lazy and rush to post on a particular topic thinking that no one will read, remember or care what I have said.”

Gary Anderson, a chemistry professor at Marshall, says online classes work well for highly motivated students. He recently had a student in a semester-long online course who mastered the material and passed the final exam in just three weeks, for instance. But Anderson worries about less able students, though. “Some of our really good students are taking great advantage of e-courses,” he says. “But we don’t get as much done with borderline students. The C- and D-level kids may need the interaction in class to get through.”

The Need for a Personal Touch

Meanwhile, even some of the most enthusiastic advocates of electronic courses see other reasons for at least some face-to-face contact among students and professors. Teresa Eagle, an assistant professor of leadership studies at Marshall University Graduate College, says her students insist on meeting their professors and peers in person because they are eager to build networks of personal contacts that will help them advance their careers. In addition, Eagle notes, professors have found they can advise students much more effectively if they know them personally. Direct personal contact is especially important at the beginning of a relationship, when nonverbal cues give important evidence about how well various messages are being received and understood, according to Eagle. “When I know a student already, there’s no problem using email or the web, but when students are first coming into the pro-

gram, they aren’t comfortable communicating that way,” she says. “If I can establish some kind of physical relationship, things go better.”

While many members of the Marshall community agree that face-to-face meetings are still important, there traditionally haven’t been many easy ways of accomplishing that other than having students get in cars and make the long drive to Huntington. Marshall does offer classes via interactive television, delivered via high-speed telephone line from Marshall’s Huntington campus to five special classrooms established around the state. The system has obvious appeal to the university, enabling a single professor to reach perhaps as many as five times as many students as he could in a single lecture room on campus (the typical interactive video classroom can accommodate about 50 students). What’s more, interactive television does bring some of the experience of the large lecture course to remote locations.

Reaction to these classrooms has been mixed, at best, though. While they enable professors to employ a wide range of media, including slides, film clips and photographs, and while students from remote locations can ask questions or participate in discussions, the technology is generally seen as difficult to master. Students at remote sites complain that professors tend to forget them, while instructors say they have difficulty engaging far-away students. The sense of alienation is especially acute for reticent students. Some are reluctant to speak up during an interactive video session because when they do, the camera will focus automatically on them, and stay trained on them until some other sound prompts it to move on.

“The criticism we get back a lot is that they are very cold and impersonal,” says Arnold Miller, a Marshall assistant vice president in charge of information technology. “People will accept it if that’s the only way they can get the education, but there is not tremendous acceptance, especially from people who like a lot of interaction.”

A New One-Room Schoolhouse

Miller hopes to combine the flexibility and self-pacing of Internet-based courses with a more effective system of real-time audio and visual communications. In his vision, students still will be able to go online to find course materials, syllabi, calendars, descriptions of assignments, bulletin boards with announcements, and chat groups. More important, they will find a rich supply of substantive information, including not only text written by their professors but also documents, pictures, and video clips. In fact, Miller hopes to digitize the university's extensive video collection so that it can be delivered directly to student desktops. At the same time, though, students will be able visit their professors face-to-face and participate in small group discussions, using either cameras mounted on their computer monitors or a teleconferencing system that is as easy to use as a television (indeed, it is operated by hand-held remote controls).

Miller calls this new system "the one-room school house," because, like that traditional educational system, it is designed to allow self-paced, individualized learning while creating a sense of integration and community often said to be lacking in distance learning. With support from the Technology Opportunities Program, Marshall has established these modern day one-room school houses on its own campus, at the graduate college campus an hour away in Charleston, at the community center in Gilbert, at a regional campus north of Huntington in Point Pleasant, West Virginia, and at a vocational-technical school. He also has plans to set up additional ones in two high schools and a union hall. And if Miller has his way, similar one-room schoolhouses eventually will be established in such institutions as hospitals, prisons and juvenile detention centers as well.

Will they work? The start-up phase has had its share of technical glitches and disappointments. For one thing, the cost of connecting Marshall's traditional distance-learning classrooms and its new workstations — different technologies sold by different vendors — has proven to be prohibitive. Still,

thanks to a lot of hard work, the personal computer-mounted cameras and the small-scale videoconferencing systems are up and running. Now that the project managers have laid this groundwork, Marshall faces an even bigger challenge — persuading its faculty to use the new system. "We have not been able to throw enough resources at trying to get people to use this resource," says Miller. "I've had a hard time getting people to experiment with it."

It Takes Work

His experience points to an obvious, but often overlooked, fact about the relationship between technology and education: technology doesn't serve up new learning opportunities automatically or effortlessly. "It's no less work than regular classes — it takes a lot of time and effort," says Donna Spindel, who teaches a popular course on early American history at Marshall. Spindel says preparing written lectures for online classes can be more difficult than writing and delivering traditional, oral ones. "You can't leave anything ambiguous," she explains. Other steps add to the workload. To be effective, online courses have to incorporate portraits, artwork, film clips and other non-text materials, she says. And professors have to try to stimulate discussion. Spindel, for instance, poses questions every week for students to discuss on a course bulletin board.

Brian Morgan, an assistant professor in the integrated sciences department at Marshall, says teachers need training to use distance-learning tools, whether the old-model ones or Miller's one-room schoolhouses. In traditional interactive television classrooms, for instance, professors have to learn how to use document cameras and take advantage of other visual tools, how to use remote cameras and how to make sure that they include students at distant locations in their classes. But students also need to learn how to use the system, according to Morgan, who earned his masters degree taking nothing by interactive television courses. "As students, we weren't given instructions on how to use the technology," he says.

Ultimately, Miller's hope of recreating the one-room schoolhouse in modern, rural West Virginia will depend on much more than increasing the familiarity of professors and students with technology. It will require both developing new ideas about how they should spend their time and relating to each other. Indeed, as Miller sees it, the activity that most identifies professors — the lecture — could all but disappear in the new, one-room schoolhouse. Many of the materials that teachers currently rehash year after year could be preserved as text or video and played to students on their computers. Freed from the need to prepare similar lectures every year, professors could spend more time doing research, updating their lessons and interacting with students.

“We're trying to produce a mechanism that will free the academicians to be not just deliverers of information, but teachers,” says Miller. But, he acknowledges, many professors are reluctant to buy into this vision. Anderson, the chemistry professor agrees. Right now, the faculty view of new technology is “very mixed,” he says. Some believe it's workable, many are still waiting for proof that it works, and a few “are plain scared it will put them out of a job.”

That fear, while understandable, is probably misplaced. Rural West Virginians clearly need new educational opportunities, and that means more teachers, not fewer. The one-room schoolhouses are now in place. With some imagination from teachers and students, they should become even more effective and exciting places to learn in the years ahead.

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