

## Merging Technologies Promotes Student Engagement

By Kathleen Rinear

We try to facilitate deeper engagement and more meaningful learning." With these words, James Lindner and Kim Dooley, assistant professors of Agricultural Education, voice the underlying theme of their approach to the design and implementation of distance education at Texas A & M University.

At TAMU, the two have been integrally involved in the evolution of the nation's first "all DE" doctoral degree in agricultural education. Called Doc-at-a-Distance, or D@D for short, the degree program was initially designed for synchronous delivery, using the Trans Texas Video Conferencing Network.

As it has evolved, the program now synthesizes a number of synchronous and asynchronous modalities, including static and dynamic web pages, threaded-discussion groups, streaming media/video, and IP audio/video conferencing. Lindner refers to this evolution as a movement from "a talking head in a studio" to "full-contact" distance education.

### Flexibility the key benefit

It is this concept of synthesizing — or merging — technologies that Lindner and Dooley believe holds the greatest promise for fulfilling their mandate to engage students in meaningful learning.

Lindner is quick to point out that "distance education is not yet the most efficient" method of course delivery. In fact, it requires two or three times as much time to teach as a traditional face-to-face course.

Rather, the advantage of distance education is that its technologies allow instructors to utilize various modes of delivery. Since learning theory suggests that different students learn differently, this variety provides for a more meaningful educational experience across the spectrum of learning styles.

Lindner goes on to assert that the distinction between distance education and traditional education has blurred. He notes that the fastest growing group of students receiving distance education at TAMU comprises on-campus students.

Whether a distance program is offered to students halfway around the world or only halfway around the campus, however, the power of technology is changing the face of education. Lindner and Dooley point to the following potential strengths of distance education:

### Collaborative teaching environment

"Good instruction calls for varied instruction," Dooley says.

Like many other schools involved in distance education, TAMU has discovered the power of synergy. For the D@D program, TAMU collaborates with Texas Technical University. Collaboration allows each school to offer a much larger, more complete program, drawing on experts from both schools, not only within each school's agriculture department but from across each school's faculty.

Lindner cites a course in poultry science, part of the master's in agriculture curriculum, as an example. The course draws on the Wildlife and Fishery Sciences, Agricultural, and Horticulture departments. "We are pulling from the best experts," Lindner explains.

One issue that arises in this collaborative world is the ownership of course materials. Like other schools, TAMU has moved toward the model of "open coursework design" in which the school pays for and owns the course modules that are developed for online use. In this way, anyone within the system can use the course materials.

Lindner points to the University of Houston's approach as a model for managing distance education course material. The university is piloting a

program to create a database model. In this model, faculty experts design "discrete learning objects," delivered by various technologies. These objects are then managed within a database and can be customized for different needs and audiences.

### Collaborative learning environment

"Learning is a social process," Dooley says. For this reason, the D@D program has been built around student cohort groups that serve as cooperative learning teams.

The original idea was to place students from the same general geographic area in cohorts and link them with video conferencing. But the program is now available nationwide and may expand internationally. Consequently, the cohorts have emerged as virtual learning communities, linked through threaded discussion groups, e-mail, and other computer-based communication media. Each team comprises six students who rotate leadership of the different learning modules that make up a course.

Dooley insists that if you do distance education right, you provide opportunities for both student-to-student interaction and student-to-teacher interaction. "If the student is working alone, there is a flaw in the system," she says.

### Merging technologies

"A good distance education course will look nothing like a classroom course," Lindner says. At the same time, "nothing can replace the emotion and power of face-to-face education." Lindner's seemingly dissonant statements can be harmonized by what he sees as a movement of distance education technologies into the traditional classroom.

Whether part of an on-campus

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classroom or an online virtual classroom, distance education should draw on the best of both worlds with a combination of dynamic and static modalities. These range from the real-time, interactive, synchronous modality of video conferencing to the static modality of a web page to the dynamic, asynchronous modality of threaded discussion.

He offers as an example the case of Norman Borlaug, a Nobel Peace Prize winner for his work in alleviating world hunger. TAMU has captured talks by the agricultural expert on digital video. The tape is indexed by Borlaug's responses to specific questions. In the live classroom, a student can ask a question, and the instructor can locate the answer to the student's specific question on the videotape.

As another example, Lindner mentions Dick Carter, a leader in distance education located at Iowa State. For courses in distance education design, TAMU can stream him live into the classroom using IP video conferencing.

IP video conferencing has other applications, as well. For example, there are 30 to 40 student teachers on field assignment in any given semester. Each of these students must be observed in the classroom. In lieu of in-person visits, however, TAMU is experimenting with the use of mobile IP video-conferencing equipment that would allow the observer to watch and interact with the student teacher from the TAMU campus.

### Alternative assessment

In the TAMU agricultural education programs, two factors influence the method of assessing course progress. In the first place, the school is dedicated to teaching higher cognitive skills (i.e., critical and creative thinking). The second factor is that the students are primarily adult learners who want "real-world applications that require synthesis of course material," Dooley says.

The program's developers have promoted holistic assessment tools that take these factors into account. Rather than relying on traditional tests, the program focuses on "The Three P's":

projects, papers, and portfolios. Students contract to perform certain tasks and are assessed against benchmarks established at the beginning of the course.

In general, Dooley says that there is a move away from "seat time" to competency-based, outcome-based assessment that allows students to focus their attention on those areas that need attention. Echoing the school's primary theme, Dooley says that education is "more relevant and meaningful if students have a role in decision making."

This holistic approach to assessment — with its focus on project completion, self-direction, and benchmarking — may be transferable to industry, the educators claim.

For Dooley and Lindner, the proof of their approach lies in outcomes they are seeing in their courses at TAMU. Dooley cites a course she teaches called Advanced Methods in Distance Education. She claims that her students are so engaged in the process that she has to hold them back from overdoing. "They exceed my expectations almost every time," she says. ●

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the library expertise to find it. The latter sends the librarian on many individual searches without necessarily knowing if material found is what the student wanted. The reality will fall somewhere in between, Davidson says. One guideline is the kind of services you would provide to a non-DE student. Would you search databases, assemble materials upon request, and make photocopies?

In order to create more independent library users, Davidson offers library instruction to classes in person and on television, offers to meet with individuals, and consults over the phone. It is possible to set up web-based tutorials

in library services or to send along a workbook with course materials.

### Where do DE library services fit?

There are two organizational charts: one makes DE library support a separate office; the other integrates this service with other functions. An independent unit can be an advocate for DE within library services and administratively, build expertise in practices and technology, and keep contact with DE faculty and students. It also can be buried away from administrative understanding and budgets and have too small a staff for effective backup. An integrated unit can spread out the expertise and responsibility, provide plenty of backup, and spread out

awareness of the services. However, advocacy and support for DE issues can fade. Communication issues arise in either scenario. Who is responsible for which service? Davidson recommends that libraries evolve guidelines around finance, personnel, and facilities so that DE students are supported economically and efficiently.

Source:

Davidson, Laura. 1999 Starting a new service to distributed learners. The Journal of Library Services for Distance Education. [www.westga.edu/~library/jlsde/vol2/1/reports/Ldavidson.html](http://www.westga.edu/~library/jlsde/vol2/1/reports/Ldavidson.html), downloaded 4/17/03. ●

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