

# Harnessing Technology to Improve Liberal Learning

**An interview with Steven Sachs**, vice president of instructional and information technology at Northern Virginia Community College (NOVA), by **Noreen O'Connor**, associate director of Web communications for the Association of American Colleges and Universities. Sachs discussed how new instructional technologies are advancing important liberal education outcomes, as well as how NOVA is using technology on its six campuses.

## **From your experience at NOVA, how do advances in technology support the goals of liberal learning for all U.S. colleges and universities?**

Innovative technologies have the potential to make learning at the college so much richer for students. It is important to realize, though, that there is no one right way to teach or to use technology. The real key is the actual design of the instruction. These technology tools simply offer a wider array of options to faculty. Technology can play an important role in fostering a climate of liberal learning in a number of important ways.

Technologies engage more of students' senses outside of class, exposing them to a richer environment than they would get just reading about things in a textbook or on a Web page. They can see it, hear it, and go places they might never experience otherwise.

We would never think about trying to do justice to Dr. Martin Luther King's "I Have a Dream" speech without letting students hear him deliver it and showing the crowd listening to him in Washington. Geography classes have always used media to take students to distant lands to show them different cultures, lifestyles, and basic life challenges.

With modern technology, though, students are not limited by traditional classroom time. Today, people learn from many sources, whether they are in school or not. People learn about politics and national policy from radio and cable talk shows.

People learn about medicine and far-away places and history from the Discovery Channel, the History Channel, the Biography Channel, the Travel Channel, and a variety of shows on other cable channels. In fact, they can now download television programs to their cell phones. If we are serious about liberal learning, we need to both harness these powerful resources and provide students with direction and tools for evaluating them.

## **How do new educational technologies influence a student's learning experience?**

Technology helps to improve liberal learning by making students more active learners. In a traditional class discussion, relatively few students really participate. Even those who do may not be listening and thinking about what others are saying. Instead, they are worried about being recognized and formulating what they will say. Others in the class are worried about lots of things other than the topic at hand. With modern technology, all students can be expected to participate in online discussions. They can all be exposed to different ideas and they all have to actually be engaged with the subject matter.

Using technology in educational settings does more than just increase the opportunities for student interaction. It helps students develop the skills they need to learn to be truly educated for a modern world. They

need to learn technology etiquette. They need to learn to communicate in a digital world. They need to learn that meanings are not in the medium they use—but that the medium can have an impact. They need to learn to collaborate and to use a variety of tools to do it.

A liberal education has always been about more than just remembering facts. In the twenty-first century, students face more options and more information than ever before and not just when they are on campus or in a metropolitan center. The challenge will be for them to learn to sort through the mass of information faster, more skillfully, and with more finesse than ever before.

### **How do new technologies fit into the goals already in place at NOVA for a quality education? Do they significantly change the kind of education offered to students?**

Technology does not really change our goals. We have had technology in one form or another from the beginning. Our challenge has always been to find ways to use the tools we had to help students achieve success and to provide them with access to an education. Great teachers have always found ways to reach their students—regardless of the technologies at their disposal. Modern technologies just offer them more options and are more adaptable.

Educational quality is really about the quality of instructional design, not the tools we use. It is about capturing a student's imagination and getting the student to think things he or she never thought

before. It is about teaching that student to be a lifelong learner. It is about teaching that student to be a savvy consumer of information. It is about teaching that student to be able to communicate and function effectively in the world. It is about helping that student be able to make a difference.

The technologies we have today in our classrooms, our homes, even in our pockets, are more robust, more nimble, more scalable, and more powerful than at any time in history. Nonetheless, this is of no consequence unless we design and create the right messages. This is what faculty do every day. It is what makes going to college mean more than just what you would get from reading a book or listening to a radio talk show or looking up facts on a Web site.

### **How can faculty and administrators help ensure that students get a high-quality education through distance learning?**

Everything ultimately comes back to the instructional design. We now know a great deal about the science of instruction and the characteristics of effective instruction. These characteristics are student motivation, content organization, student engagement, and useful feedback. While there is no single right way to teach, all really good instruction accounts for those characteristics in some way. The design has to be appropriate to the content, students, location, time available, and tools.

Just capturing a bad instructor on tape and delivering his or her presentation to students over the Web may be distance

learning, but it is hardly going to provide a high-quality education. However, neither is sitting in that same instructor's classroom. Some people wrongly equate distance learning with little more than a book and a test.

In fact, the lines between distance learning and on-campus instruction are blurring. At NOVA, we have more traditional classes that use Blackboard (our learning management system) outside of class time than we have distance learning classes using Blackboard. We have more faculty in traditional classes using various Web tools to create online materials than we do in distance learning.

We have also seen a huge growth in hybrid classes where there are half the number of class meetings—with technology being used to make up the difference in “class time.” It is not a straight one-for-one exchange though. The issue is to cover the content and class objectives outside of class. In distance learning, we have to design the course in such a way that students are not only exposed to the full range of content, but also have appropriate interaction with that content, receive feedback from their instructor, and have a chance to interact with others about the content, ask questions, and demonstrate their mastery of the course objectives. There are lots of ways to do this, and sitting in a classroom is only one of them.

### **How are faculty using hybrid courses on the NOVA campuses?**

There are several different approaches that our faculty are using in these hybrid classes. In one approach, faculty meet with their class on campus once a week instead

of the more traditional twice a week. Instead of the second weekly class meeting, the faculty member uses techniques and tools more associated with distance learning to cover content. When well planned, that same classroom can be used for a second hybrid class on the days now not being used for the first hybrid class—effectively doubling the capacity of the classroom.

In another approach, the instructor meets with the class on campus for several

ally or in focused groups with students to target their specific needs without giving up any of the traditional content covered in the course.

### **Do faculty express concern that technology is ultimately going to replace classroom teachers?**

Technology is great for delivering content, carrying messages, storing information, speeding things up or slowing them down, making things bigger or smaller, etc. But

Technology can be used to share that art with more students. These are tools to be used where appropriate.

Personally, I would hate to see all faculty teach alike. I think the richness of our colleges and universities is in the diversity of its faculty. It should always be about the quality of their ideas and their ability to reach students.

### **How can faculty use technology more effectively?**

Faculty have always used forms of technology—whether it was an overhead transparency, a set of slides, a film, or even a chalkboard. They did not create all their teaching tools in a day then, and are not likely to now. The difference is that there are far more high-quality instructional materials available for faculty to choose from without having to spend any time in production. They need to put their time into designing appropriate learning activities, selecting content, and providing student feedback.

One of the most significant things that faculty have had to master with new technologies is how to take technology into account when designing courses and setting course expectations. Faculty frequently complain about how much time it takes to work with students now that they have e-mail, but nothing says they have to be available 24/7 just because students can e-mail at all hours.

Faculty can set rules and expectations for communication—electronic and otherwise—that ensure the new technologies can actually save them time.

## Technology itself does not think independent thoughts, select, create, and organize content on its own (without a question or theme), answer a novel question, or mentor or evaluate students.

meetings at the beginning of the semester and then at regular intervals during the rest of the semester. Once again, distance learning approaches are used between the class meetings.

The hybrid approach is very good for students not quite ready for the independence of distance learning or for classes where some of the content or learning objectives would be very difficult to convert to a purely distance learning format.

Though not as flexible as distance learning, this approach does offer students more flexibility than traditional classes. Other faculty use the hybrid approach to free some class periods to meet individu-

ally or in focused groups with students to target their specific needs without giving up any of the traditional content covered in the course.

Can we use technology to replace elements of the traditional lecture course? Yes. Should we care? No. Faculty do so much more than deliver lectures that this should not be a worry. Actually, technology could free faculty from having to perform on the stage in front of the class so often, giving them time to do other things only faculty can do. On the other hand, there are many faculty who do a masterful job in front of a class.



For example, when a question is answered for one student, faculty can post it for everyone to see and make sure students know to look for an answer online before sending an e-mail. Faculty can also post examples of assignments so students do not always have to ask for guidance.

In the classroom, faculty have developed communication strategies and have learned to anticipate questions. It is the same in the digital world. Just because we can communicate more quickly and more often does not mean we should.

**What are the most important emerging trends for learning technologies and how are they being used to advance learning goals?**

The emerging trend is the increase in ways faculty can use technology with students outside of the classroom. Textbook publishers are making a much richer array of materials available, and the tools have gotten easier to use. Faculty at NOVA now use a number of software packages, including Dreamweaver and Flash from Adobe for Web site design; Microsoft Producer and Impatica for adding PowerPoint to the Web; Microsoft Photo Story #3 for putting Web-based slide shows with sound online; Audacity and Horizon Wimba for capturing and editing audio for Web sites; Tegrity and Apresso Classroom from Anystream for easily capturing live classroom sessions for the Web; and Saba Centra #7, Elluminate, and Adobe Breeze for real-time meetings over the

Web. These materials are now in formats that are readily available to students on the Web, through Blackboard or other learning management systems, and soon will be available on iPods and other digital media players. Faculty can assign materials to students as homework rather than having to take classroom time to show them.

These new technologies have three big payoffs for faculty. First, faculty can use class time for more than just a one-way delivery of content. Second, students can be held responsible for the content—even if they miss class. Third, the new technologies allow for innovative approaches to scheduling. For example, they allow creation of hybrid classes that meet face-to-face less often since more of the content—and even interaction—is online in some way.

**What are the most widely used classroom technologies at NOVA campuses?**

All of our classrooms now have networked computers and LCD projectors, and many have more than just that basic equipment. They have special speakers, DVD players, overhead cameras for displaying 3-D materials, and touchpad control units that make it easy for faculty to manage the equipment in the room. Over the next several years we will be upgrading more rooms with additional equipment so faculty do not have to request it in advance.

We are also equipping more classrooms with electronic whiteboards that allow faculty to capture everything they write on the board in class, then post

these notes to the Web or to Blackboard for student reference outside of class.

The electronic whiteboards also function as interactive screens that allow faculty members to display and point out information on a Web page without having to go back to the computer.

Another of the newer technologies we expect to start putting into classrooms is the tablet PC. The tablet PC is a big improvement in the classroom over a standard desktop PC because it allows faculty to actually write on the screen and project it as they did with the old overhead projectors. We expect that this will add a whole new dimension to PowerPoint presentations or materials developed in advance. This will make those materials much more interactive and dynamic.

**What is the biggest challenge you face and what are you doing about it?**

The biggest challenge is finding enough staff to champion the new technologies, help faculty feel comfortable using them, and make sure we have the right support systems in place. This takes much more than traditional technology training. We recruit and pay some of our more innovative teaching faculty to mentor other faculty, hire instructional designers and instructional technologists who combine technical skills with the ability to relate to faculty, and design lots of online tools and training specifically targeted to faculty. It is still not enough to keep up, though. Our most innovative faculty are still moving so fast that it is hard to keep up with them. ■