THE CHANGING SHAPE OF LEARNING

TECHNOLOGY AND TIGHT BUDGETS FORCE A FUNDAMENTAL RETHINKING OF THE HIGHER EDUCATION ENTERPRISE

PRAKASH NAIR

Reforms in America's colleges and universities seem to be driven not by a quest for quality, but rather, by the need to deal with financial woes.

In recent years, flat or declining state appropriations and difficult market conditions have led to a variety of cutbacks on both public and private college campuses. Yet nobody has argued effectively that these cuts have reduced the quality of our higher education system. The primary reason for this seems to be that even the higher education officials who know how quality suffers from budget cuts are reluctant to admit it, because if they do, they will be accountable for solutions. And real solutions to the problems confronting higher education are not just expensive. They also require massive organizational and governance changes that scare conservative establishments. So instead of making major reforms, institutions make incremental cuts to distribute the pain. At the same time, they continue to use outdated measures of success such as graduation rates. Until there is a willingness on the part of the American higher education establishment to set up a completely different accountability system than the one they now have, American colleges and universities will continue on their road to irrelevance.

To understand the future of the American campus, it is important to look at a few broader trends.

Technological advances—often emerging from U.S. corporations and universities—continue to fuel an Information Revolution. But just as American manufacturers lost ground to global competitors, the American technology sector is no longer the 800-pound gorilla in the world of intellectual capital. U.S. communications companies, for example, have taken a beating as the Internet era allows intellectually driven jobs to leave America for developing countries like India and China.

In addition, education itself is a commodity in the global marketplace. In a fast-changing world, an important characteristic for the delivery of quality educational programs is agility—the ability to define and redefine program offerings to match rapidly changing needs. This is foreign to the way the larger institutions operate.

As if these forces weren't challenging enough, colleges also face an unprecedented push for accountability from the public and elected officials. The lack of adequate performance measures tied to funding hurts the highest-quality higher education institutions financially and makes it more difficult for them to adjust. Another area in which accountability is being manifested is the support, or lack thereof, that higher education institutions get from their local constituents. Many universities see themselves as regional and national resources. But if local communities feel alienated, they will not support them in tough times. Local communities did not prevent state legislators from slashing higher education budgets last year. Not surprisingly, in many states, community colleges, which serve the immediate needs of their local communities, find it easier to preserve their government funds than do universities.

A requirement to attend lectures could be dropped in favor of a system where students are offered online guidance both from instructors and peers.

Taken together, these trends offer a few cues for campus planners. Among them:

Adopt student-centered models. American campuses are largely "instructor-centered" with pre-established curricula and a teacher firmly in charge, commanding everyone's attention. But in the new environment, colleges should focus on delivering education that is highly relevant to the individual. A new level of "personalization" will entail customizing not only the content of the curriculum, but the learning process itself. Colleges and universities that focus on personalization will integrate the idea of multiple intelligences into the education delivery process in the way that many schools have done. They will not only build more

flexibility into core curricula, but also offer many different ways for students to earn college credit. A requirement to attend lectures, for example, could be dropped in favor of a system where students are offered online guidance both from instructors and peers. The Pew Charitable Trusts has already funded an initiative at several universities to deliver high-enrollment, introductory courses online. The success of this venture could lead to a rethinking of the very idea of the large lecture course—a mainstay at most universities.

Student-centered models will employ various media to deliver instruction and measure learning by using portfolio-based systems rather than test-based assessments. This trend will reinforce the notion that what students can do is more important than what they know. Customization of the learning experience for all students will also have dramatic impacts on the way the campus is organized physically and administratively and in the way faculty are deployed. For that reason, colleges can be expected to move slowly in this area.

Become more market-driven. Educating the "whole person" is good in theory, but it fails when such curricula are made compulsory for graduation. The reality is that

Certifications are often valued in the computer industry over a generic computer science degree from a good university.

the whole person is a real person, not some statistical average. Mandated holistic curricula fail because they lump everyone into the same category. The new market-driven higher education providers see demand for customization in education, as opposed to mass production. So they offer only what a student needs to gain a particular skill that has current value in the world of work. That's why "certifications" such as MCSE (Microsoft Certified Systems Engineer) and CCDP (Cisco Certified Design Professional) are often valued in the computer industry over a generic computer science degree from a good university.

With the certification model, education becomes a truly lifelong endeavor that does not end when a degree is awarded. The University of Wisconsin's Department of Engineering Professional Development employs this model very successfully, offering market-driven courses on campus and in other locations that are convenient to those taking the courses. The university is particularly good at getting feedback from course-takers and continuously making adjustments to keep courses relevant and current. The program benefits lifelong learners—and the university's bottom line.

Develop "Centers of Excellence." Large comprehensive high schools have discovered they have two chief problems: they are large and they are comprehensive. This is true of large higher education institutions as well. A way to get around the anonymity of large, amorphous organizations is to create smaller, specialized "schools-within-schools" or, better still, independent "signature" programs like San Diego's High Tech High or the School of Environmental Sciences—the "Zoo School"—in Minneapolis.

By offering courses of interest to local residents at times when facilities are least used, an institution may enhance its relevance in the community while increasing revenues.

Colleges and universities increasingly realize that they cannot retain their competitive edge if they try to be all things to all people. So the concept of signature programs—or Centers of Excellence—is gaining strength in higher education as well. The Society for College and University Planning recently held out the example of Tennessee. "Taking into account factors like historical mission, strengths and unique opportunities, Tennessee allocates resources to institutions to maintain or create distinction in certain programs," the society reports. "As a result, one institution has the Center of Excellence in the Creative Arts, another the Center of Excellence in Manufacturing and so on. Oregon has similar Center of Excellence programs and also, a Targeted Investment Model that directs resources to selected university programs in an effort to achieve national status."

Be a good neighbor. Beyond the need to garner local support to sustain government funding, higher education institutions are finding that community and business partnerships are good for business and good for learning. By offering courses of interest to local residents at times when facilities are least used, for example, an institution may enhance its relevance in the community while increasing revenues. Similarly, local businesses as well as hospitals, schools and daycare centers offer opportunities for institutions to strengthen local ties and increase opportunities for philanthropic contributions while affording students authentic learning experiences through internships.

Integrate distance learning technologies. Distance learning represents one important slice of the fast-growing information and telecommunications technologies that have already changed the way we learn and the fundamental organization of business and industry. And the next-generation Internet, known as Internet 2, will bring unprecedented power to transmit information across global networks with full video and audio capabilities.

By accessing information from anywhere in the world and dispensing it instantly, the college or university can become more immediate and dynamic to greater numbers of constituents and thereby broaden and strengthen its resource base. The global outreach afforded students and staff allows local colleges and universities to develop world-class partnerships and be competitive with the best universities in the world.

Integrate wireless technologies. The need for ultra high-bandwidth connections to support sophisticated technologies and high-fidelity video and audio transmissions comes just as there is an explosion in relatively low-bandwidth wireless appliances. Students in campuses across America are now enjoying the benefits of wireless connectivity, allowing anytime, anywhere access to online learning materials as well as instant connectivity to the campus network, the Internet, to one another and to instructors.

The viability of wireless communications got a shot in the arm with the recent approval by the Institute of Electrical and Electronics Engineers of a new high-speed wireless standard that permits data transmissions at speeds of up to 54Mbps, allowing wireless users across the campus to upload and download files and access the Internet more easily. As wireless technologies proliferate in and out of higher education, campuses that do not provide wireless connectivity will be at a competitive disadvantage.

Moreover, wireless technology will have a direct impact on the way campuses are physically arranged and used. For example, planners need to understand that learning and research can now occur in the nooks

Campuses that do not provide wireless connectivity will be at a competitive disadvantage.

and crannies of the campus as well as in libraries and labs. Along with anytime, anywhere access to information comes an increase in student-directed learning and independent research. That means there will be less need for formal learning areas on campus such as classrooms and lecture theaters. Additionally, media centers and libraries can begin to get smaller.

Wireless technology also changes the dynamics within the classroom. Earlier this year, a *New York Times* reporter described a wireless classroom at Washington's American University this way: "From the back row of an amphitheater classroom, more than a dozen laptop screens were visible. As Prof. Jay Mallek lectured graduate students on the finer points of creating and reading an office budget, many students went online to Blackboard.com, a website that stores course materials,

and grabbed the day's handouts from the ether. But just as many students were off surfing. A young man looked at sports photos while a woman checked out baby photos that just arrived in her e-mailbox."

Design flexible facilities. Fields like tissue engineering and robotics will place demands on facilities that are hard to envision today. But the buildings will be around a lot longer than the technologies and the curric-

There will be less need for formal learning areas on campus such as classrooms and lecture theaters.

ular offerings. That is why open plan, subfloor systems that permit infinite variations of the workspace, interior partitions and interior equipment will need to be evaluated. Technology has often been an afterthought in building design. Now, good planning from the ground up will allow buildings to "bend" and be better prepared to accept new and emerging technologies.

Facilitate social interaction. As technology transforms so-called "formal" learning functions, campuses will be valued more and more as centers of social interaction and other forms of "informal" learning opportunities. This will increase the need for study lounges, meeting rooms, plazas, reading cafes, green zones and other attractive open areas for informal interaction and exchange of ideas. In the design of the Canning Vale campus in Western Australia, I stressed to our architects the importance of the "spaces between buildings." That campus was designed with several "learning neighborhoods" organized along a "learning street" where much of the informal learning would take place.

All these reforms address goals that are important to elected officials and the public but they do so in a manner that preserves the fundamental purpose of the enterprise: to provide the best opportunities for a relevant, high-quality education. Higher education institutions have to show their constituents that they are learning communities whose economic, social and cultural benefits accrue to their local neighborhoods and regions.

Unlike the trend in the school market, there is no chance of hundreds of new college campuses being built in the United States anytime soon. The challenge for campus planners, then, will be to preserve America's rich tradition of excellence while responding to the inexorable forces of change in the global economy.

Prakash Nair is a school planning consultant based in New York City and founder of Urban Educational Facilities for the 21st Century. He can be reached at Prakash@designshare.com.