Leadership

By Diana Natalicio

Information Technology: Focusing on Improved Teaching and Learning

Few in higher education would disagree that the potential of information technologies goes far beyond providing online admissions, streamlined purchasing, and remote access to library resources, as important as all of these advances are to the business of the university. There also appears to be growing agreement that colleges and universities must transform thinking about teaching and learning and must better understand how technology changes the way we develop, manage, deliver, and evaluate our educational programs. Most institutions recognize that this transformation is desirable, if not inevitable, because of the need to achieve efficiencies and to meet the changing expectations of today’s students. Still, such transformation is often viewed as threatening rather than exciting, expensive rather than cost-saving, and disruptive rather than planned.

The University of Texas at El Paso (UTEP) took an early lead in organizing the delivery of electronic instruction. We recognized the capacity of new information media and telecommunications technology to contribute to the teaching/learning environment, and we saw its potential to advance cost-effectively a variety of administrative and academic processes. We were particularly committed to exploring the potential of technology applications in UTEP’s nontraditional, urban institutional setting, where rising educational costs and students’ family and job constraints represent major barriers to access, retention, and graduation.

UTEP is a regional component of the University of Texas System. Its mission is to provide residents of this region—the fourth lowest per capita income Metropolitan Statistical Area in the United States—higher education opportunities at bachelor’s, master’s, and doctoral levels. Of our 14,520 students, 85 percent are from El Paso County, and another 9 percent come from northern Mexico, most of them from Ciudad Juarez, El Paso’s sister city with a population exceeding 1.5 million, on the Mexican side of the Rio Grande. Two-thirds of UTEP students are Mexican-American, and more than half are the first in their families to attend college. UTEP’s responsibility is to ensure that we are aggressive in applying instructional technology to contain student costs, enhance access through varied educational offerings, and provide students with the technological skills needed for both academic success and workforce competitiveness.

During the past several years, UTEP has moved to further incorporate technology into our teaching, research, and service missions. In the fall of 1997, we opened a $15 million, 125,000-square-foot state-of-the-art educational facility, the Undergraduate Learning Center (UGLC). The UGLC is equipped with more than 240 multimedia-ready computers, 350 data ports in 28 classrooms, and the latest projection technology, including video projection systems, videodiscs, and DVD players, videotape decks, 3D overhead projectors, and Internet access from every classroom. Web browsers and presentation software enable faculty to use digital resources to enrich the learning experience of UTEP students. In one large lecture hall, seats are configured with network ports that connect students via interactive keypads, permitting them to give instructors feedback during lectures. In the fall of 1999, 165 UTEP faculty members taught 200 courses in the UGLC.

Impressive as we feel the UGLC facility is, we realize that the “clicks and mortar” of a high-tech classroom building are not enough. Although faculty may have an interest in using technology in the classroom, they often lack the technical skills to develop, deliver, and evaluate educational technologies. To meet these needs, the UGLC houses several centers that offer faculty training and development support. Through the Center for Effective Teaching and Learning, UTEP faculty receive assistance in designing, developing, and evaluating instructional technology. The Digital Media Center supports faculty efforts to produce and deliver digital media, including Web sites and CD-ROMs. UTEP students are served by the Office of Technology Planning and Distance Learning, which utilizes a variety of technology-based delivery systems to offer distance-learning courses from across the UT component campuses. In addition to linkages to the University of Texas System TeleCampus, UTEP currently offers fifteen Web-based courses in ten disciplines.

These infrastructure support systems have proven successful in encouraging faculty members to adopt information technology to enrich the learning experience. Learning is personalized, and students are engaged in the process as they experience coursework through multimedia and real-time information access, as well as simulations. Additional benefits accrue to both faculty and students, since they have additional means for communication and interaction.

To further enhance education and research, UTEP participates in a major Internet2 initiative. With support from the National Science Foundation, UTEP joined the University Corporation for Advanced Internet Development (UCAID). Internet2 capability will support applications such as remote visualization, imaging, and manipulation of instrumentation, which will enable us to draw on the resources of major research centers throughout the world. Moreover, Internet2 capability will enable UTEP researchers to develop—and share with colleagues worldwide—GIS, temporal, and image databases that provide information about the U.S.-Mexico border region, including population growth, economics, health, education, environmental conditions, and demands for energy and natural resources. Internet2 also promises to enhance teaching and learning as faculty members use its capabilities in Web-supported and Web-delivered courses.

Looking toward the future, we envision more effective undergraduate and graduate education through advanced technologies, including greater distance learning capabilities to serve teachers, librarians, and community leaders, increased use of Internet2 to support research and research training and to forge connections with the wider scientific community; and enhanced capacity to serve the needs of an increasingly broad constituency on campus and throughout this region. At UTEP, we embrace information technology for all that it can do for us, but more importantly, we devote a great deal of our time and resources to using it to transform the way we teach and the way our students learn.

Dr. Diana Natalicio is President of the University of Texas at El Paso. Texas Monthly Biz magazine recently named her one of the “power players at Texas high tech” in the field of academics.