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Reclaiming the Lead: Higher Education's Future and Implications for Technology

U.S. education, K–20, is under constant scrutiny as the country faces increasingly competitive global markets, a worldwide recession, rapid technological and demographic changes at home, and struggling educational systems nationwide. As recently as this past summer, President Barack Obama, in a speech on education at the University of Texas at Austin, said: “I want you to know we have been slipping. In a single generation, we’ve fallen from first place to 12th place in college graduation rates for young adults. . . . In one generation, we went from number one to number 12. Now, that’s unacceptable, but it’s not irreversible. We can retake the lead. . . . The single most important step we can take is to make sure that every one of our young people . . . has the best education that the world has to offer.”¹

A year earlier, in announcing the American Graduation Initiative, he set a goal for the United States to have the highest proportion of college graduates in the world by 2020. The President was responding in part to data suggesting systemic underachievement. It is estimated that for every 100 ninth-graders, only 68 graduate from high school in four years and only 18 complete a two-year degree within three years or a four-year degree within six years.² Moreover, although more Americans than ever are attending college and earning degrees, the percentage of U.S. adults with college degrees is not increasing—which is the opposite of what is happening in most of the world’s other developed nations. Among Americans 25–64 years old, 38 percent have two-year or four-year college degrees and are the second-most educated group internationally, behind Canadians (44 percent). Among younger Americans, 25–34 years old, 39 percent hold postsecondary degrees, but they rank behind Canadians (53 percent), Japanese (52 percent), Koreans (47 percent), and three other nationalities.³ And among 24-year-olds, America ranks 20th out of 24 countries in the percentage of students earning undergraduate degrees in engineering or natural sciences—areas critical to our competitiveness.⁴ For the first time since the middle of the twentieth century, the United States cannot claim that each successive generation of Americans will be better educated

than the preceding one—a fact with far-reaching implications for the nation’s standing in the world.

Student Retention and Graduation

In colleges and universities, retention and graduation rates are of particular concern. For the United States to compete globally, it must substantially increase the numbers of students who attend and graduate from college. In addition to increasing access, higher education institutions must also ensure that the admissions door is not a revolving door. Those institutions most effective in retaining and graduating students have focused on supporting their students by creating a climate that encourages (1) asking good questions, (2) being honest about both strengths and challenges, and (3) developing innovative

problem-solving strategies and initiatives that address particular issues, including programs that connect students to faculty, staff, and each other.

Successful campuses also ask many of the following questions: Do we know our students well—not simply their test scores and grades but also their backgrounds and aspirations, their interests, and their personal challenges? Have we identified the faculty who have been most successful in educating students and the courses in which different groups of students tend to succeed? Have we disaggregated data to examine groups based on factors such as

gender, race, major, socioeconomic background, and level of high school preparation? Have we identified those faculty and staff who have demonstrated records of supporting students? Have we pinpointed and highlighted those practices that have been most effective in helping students succeed? Do we know why students who leave the campus do so—and do we know what proportion leave because of lack of funding, poor academic performance, dissatisfaction with the climate, or interest in majors not offered by the institution? Do we conduct follow-up interviews with students who have left, and if so, what have we learned? What portion of students are affiliated with groups—from athletic teams to academic clubs and special scholars programs to fraternities/sororities—and what is the impact of those affiliations on performance and on retention and graduation rates?

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Technology's Role

Technology is playing a central role in extending the reach of higher education by making postsecondary education more accessible—for example, by determining which students to admit and what support they need. Even more important, technology is helping improve how faculty teach, students learn, and institutions do business. Its potential for making students' learning experiences richer—serving as a catalyst for more critical thinking and reflection—is enormous. Its potential for increasing retention and graduation rates is equally enormous. In short, the role of technology is to support broader academic efforts to help students succeed—from offering course scheduling that is flexible and responsive to students' needs, to redesigning courses, to providing professional development for faculty using technology in the teaching and learning experience.

Any institution that is successful in retaining and graduating students has taken the time to place retention and graduation among its most important priorities. This is certainly the case at the University of Maryland, Baltimore County (UMBC), where we have been using technology in interesting, innovative ways to learn about our students and track their progress. For example, we have increasingly been using analytics to help shape our students' experiences, from their admission to the university to their postgraduate placements. Relying on technology, we have been identifying a number of characteristics that enable us to learn more about our students, identify academic problems they may be having, and develop strategies to address those issues. And we're increasingly using our Blackboard course management system to augment, reinforce, and analyze learning in the classroom. Being able to take action based on what we learn about students' performance—for example, conducting “real-time” academic interventions with students who are doing poorly, so that they avoid falling even further behind in a course—is essential.

Another example of how technology enables us to support student success is simple but critically important. Technology has been instrumental in our pedagogical innovations involving course redesign—for example in Chemistry 101 and Psychology 100, two gateway courses that attract large numbers of students. In fact, we face the challenge of now enrolling more students in Organic Chemistry than we can accommodate because more and more students are succeeding in Chemistry 101. (Nothing could be more detrimental to students than accepting them and not having sufficient faculty, classroom seats, lab space, or academic support. Technology helps us balance student demand with our capacity.) The performance of students in Psychology 100 also has improved dramatically as a result of the infusion of technology, coupled with more small-group research activities and peer mentoring. In-class technology, self-paced online labs, and the use of Blackboard have resulted in more group study and higher retention (i.e., fewer course withdrawals), fewer course failures, higher grades, and coverage of more content during the semester. Also, students

in these classes exhibit greater technological competence and heightened enthusiasm for their studies. Our efforts are part of an overall course redesign initiative conducted by the University System of Maryland (USM), under the leadership of Chancellor Brit Kirwan. Through this initiative, UMBC and other USM campuses can hear about each other's best practices and critical lessons learned.

Each of these examples has involved strong partnerships and collaboration across campus divisions focused on problem solving, data analysis, and substantive dialogue. Our focus has been on what's in the best interest of teaching and learning and not on what happens in a particular division. The CIO and the IT staff are as concerned about student success, particularly retention and graduation rates, as other campus leaders are about the uses of technology to help students succeed. Our success in this area is largely about mindset. External partnerships also are important. For example, we are closely following Next Generation Learning Challenges (NGLC) to identify and accelerate the adoption of technology to support student success, and we encourage our colleagues at other campuses to support this new initiative (<http://nextgenlearning.org/>).

Conclusion

If the nation is to achieve President Obama's ambitious goals for U.S. higher education—and “retake the lead”—it will need to take advantage of rapidly developing new technologies to strengthen recruitment and retention, teaching and learning, and ultimately, students' success. As Robyn Meredith asserts in *The Elephant and the Dragon*: “The good news is that what the United States must do is clear: it must strengthen its educational foundations and foster the innovation that will keep the United States ahead in the technology that underpins so many parts of the nation's culture and the global economy. . . . In readying for a storm of competition, America must return to basics. The most critical building block is education.”⁵

Notes

1. “Remarks by President Barack Obama on Higher Education and the Economy,” University of Texas at Austin, August 9, 2010, <<http://www.whitehouse.gov/the-press-office/2010/08/09/remarks-president-higher-education-and-economy-university-texas-austin>>.
2. “Commentary: Got Data?” *Perspective: News and Views from Achieve*, May 2005, <<http://www.achieve.org/files/enewsletters/200505/Perspective-May.html>>.
3. Alan Wagner, “Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy,” National Center for Public Policy & Higher Education, September 2006, table 9, <<http://www.highereducation.org/reports/muint/index.shtml>>.
4. National Academies, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* (Washington, D.C.: National Academies Press, 2007).
5. Robyn Meredith, *The Elephant and the Dragon: The Rise of India and China and What It Means for All of Us* (New York: W. W. Norton & Company, 2007), p. 205.

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