

Background: Technology in Postsecondary Success

Overview

Decades after the personal computer promised to revolutionize the classroom, we are cautiously optimistic that technology finally is on the cusp of providing the tools and platforms to measurably improve student outcomes, particularly in the postsecondary sector.

Conditions in postsecondary education appear ripe for dramatic change over the next five to 10 years—changes that fundamentally alter how college educators teach and how their students learn. For instance, 20 percent of undergraduates currently take at least one online course¹, a market share that could balloon with the passage of pending legislation that would provide \$500 million over 10 years to build open, online courses. New accredited and non-accredited delivery models are proliferating to meet the needs of a wide range of student types, their goals, and enrollment patterns. Additionally, because of the overlap between community college developmental education and high school courses, investments in community college remedial programs could represent a unique laboratory for both College-Ready and Postsecondary innovation.

The fruits of this experimentation hold particular promise for low-income and minority students, who suffer from abysmal completion rates: only about one-quarter of the African-American and Hispanic students who enrolled in a community college in 2004 graduated within three years.²

That's scandalous, but it's fixable. Available evidence reveals that low-income young adults do not complete degrees or obtain credentials, primarily, because postsecondary education is inconvenient to their work schedules and family needs, can be time consuming or expensive, and is often perceived as boring and irrelevant to their lives. Yet emerging technologies promise to greatly reduce or, in some cases, eliminate those barriers. For example, emerging technology and online courses have the potential to greatly reduce costs and promote flexible scheduling.

That said, there remain risks and limitations relating to the role emerging technologies will play in education reform. For starters, educators remain resistant to much of the new—and even old—technologies. In 2003, the U.S. Economics and Statistics Administration identified education as the least IT-intensive industry in the country, performing even below the construction industry. Too often schools treat technology as an “add-on,” and not the transformative vehicle it could potentially be. For example, K-12 spent \$60 billion on computers in the 1990s, to little effect. As a result, policymakers and educators often see technology investments as a financial black hole. Therefore, helping educators adopt and integrate new technologies into their day-to-day work is as big a challenge as is developing the technologies capable of driving fundamental change. Finally, the digital divide and, increasingly, the broadband divide, threatens to leave out the very population we care most about.

Foundation Objectives and Strategy

In the Postsecondary Success (PS) strategy, the role of technology is to support our overall goal of doubling the number of low-income young adults who earn a postsecondary degree or credential with value in the labor market. We will do that by targeting the development and wide-

¹ *Staying the Course: Online Education in the United States, 2008*, I. Elaine Allen and Jeff Seaman, Sloan Consortium, 2008, http://www.sloan-c.org/publications/survey/pdf/staying_the_course.pdf.

² NCES, IPEDS 2006-07

scale deployment of technologies that address one or more of the reasons that low-income young adults do not complete credentials today.

We face a substantial challenge in scaling effective innovations across the nation's nearly 1,100 community colleges. While the colleges are home to many examples of innovative programs and faculty, the reality is that we're faced with pockets of success that rarely reach scale. When programs are taken to scale, they often lose their efficiencies when administrators implement them locally without a deep understanding of the mechanisms that drive student outcomes. To mitigate that, we envision a three-pronged approach to sustained impact at scale:

- **Seeding “disruptive” innovations:** We will target new ideas that hold the greatest promise for improving the odds for low-income young adult learners. Primarily, we will be looking to “harvest” from the innovations that are emerging from the field. However, in a few areas, mostly in technology-related and new delivery model areas, we will be encouraging new innovations to learn what works and shows the greatest potential.
- **Transplanting success:** We will then share the most promising of those innovations with dozens of colleges, being sure to maintain their impact on student outcomes. This is where the bulk of our grantmaking will be over the next five years, as it will take some time to replicate these programs and allow them to demonstrate success beyond their original test sites.
- **Going to scale:** Once the success of these programs is documented, we will disseminate them across hundreds of colleges.

The foundation's grantmaking will achieve this three-pronged strategy by leveraging the development and deployment of key technologies with the greatest promise to disrupt the status quo.

1. **Adaptive software:** We will make careful investments in this rapidly-growing market to accelerate experimentation and deployment of technology-mediated instruction and tutoring that promise to match the content level, learning style, and motivation level of each student.
2. **Digital video:** Strategic grants will encourage the development and distribution of high-quality digital video lessons produced by the nation's top teachers and professors. Grants will be made with an eye toward determining the most effective implementation of digital video to increase rates of degree completion.
3. **Open content:** We will make investments to test whether community-developed and openly distributed course materials, platforms and technologies can effectively disrupt traditional teaching methods and increase student engagement.
4. **Online delivery:** Grantmaking will focus on the creation and wide distribution of high-quality alternative courses and flexible, low-cost delivery models targeted at low-income students. We are particularly interested in fostering the creation of “blended” courses that combine traditional classes with online components to provide a high-tech, high-touch environment that creates new forms of engagement.
5. **Data systems:** We will invest in helping states and institutions create integrated data-collection systems in order to give decision-makers the information they need to understand the full scope of the completion problem. These systems are necessary to identify students who are at-risk of dropping out, redirect resources to help them persist and drive change across systems and states

Advocacy

Our Postsecondary Success advocacy objective in the area of technology is to:

- Reduce the regulatory, state licensure, and accreditation constraints on innovative application of technology and new delivery models (e.g., “seat time” requirements, financial aid tied to semesters, interstate constraints on online learning).
- Increase standardization of learning outcomes, measurements, and use of data – innovators can’t succeed unless there is a ruler to measure their performance against relative to the status quo. Right now, the measures are limited and so is innovation.
- Encourage government’s role in incenting innovation and providing targeted direct investment

Illustrative Grants

The Carnegie Foundation for the Advancement of Teaching will identify promising strategies to dramatically improve college success rates, especially among those students least prepared for college-level work. The research will develop effective solutions to ensure those who are least prepared are much more likely to graduate. Researchers will then quickly test these innovative solutions in schools and other learning contexts, and then rapidly refine their findings. Improving the success rates of community college students in developmental math is the first problem the project will tackle with this joint funding.

Monterrey Institute for Technology in Education (MITE) is developing engaging, adaptive online course materials for the four-course community college developmental math sequence, tailored to the needs of low-income learners. Nearly three-quarters of freshman entering community colleges have to take remedial math. Less than half of them pass. This project will find ways to retool math education to overcome this obstacle to success. Ultimately, the developmental math coursework will be distributed through MITE’s highly respected library of web-based content, the National Repository of Online Courses (NROC), which is accessible to individual learners free of charge.

Western Governors University (WGU) will research the effectiveness of its programs for low-income young adults with the goal of clarifying what role a competency-based online university can play in boosting completion rates for these students. For more than a decade, WGU has offered students programs that address their needs: flexible online courses of study, with personalized attention by a faculty mentor, and a program that enables students to advance based on what they know, not how much time they’ve spent in a classroom. The study will extend through September of 2010, and will focus on:

- The effectiveness of the WGU academic model for low-income students ages 18-26;
- Interventions that improve the success and graduation rates for these students; and
- Federal and state advocacy efforts that address issues surrounding technology-delivered, competency-based education.
- Tracking students after they complete their degrees to determine how effective their education was in helping them obtain and hold a job.