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of Higher Education

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It's MOOAs, Not MOOCs, That Will Transform Higher Education

March 25, 2013, 1:00 pm

By Laurie Essig

The future is upon us. It is time to hyper-monetize professors' teaching labor—oh wait, I mean open up education to all, for free—and create Massive Open Online Courses (MOOCs). As my colleague Jason Mittell wrote here at *The Chronicle*,

> *MOOC mania has gained momentum ... because it entails opening up the previously noncommercial realm of teaching, at both public and nonprofit private institutions, to venture capitalists and start-ups looking to build company value.*

According to one of many pro-MOOC op-eds by Thomas Friedman in *The New York Times*,

> *the MOOCs revolution, which will go through many growing pains, is here and is real. ... Today's traditional university has [much] in common with General Motors of the 1960s, just before Toyota used a technology breakthrough to come from nowhere and topple G.M.*

Since Friedman is honest enough to use corporations as the comparison for today's universities, let's look where we might really use technologies to cut costs and make the universities leaner, more profit-producing machines: the administration.

Study after study has shown that the people at the top—the deans and vice-presidents and other Grand Poobahs of bureaucratic reproduction—have grown far faster than faculty in the past couple of decades. And their salaries are far higher, over all, than those of professors. As a study from the conservative Goldwater Institute pointed out:

> *Between 1993 and 2007, the number of full-time administrators per 100 students at America's leading universities grew by 39 percent, while the number of employees engaged in teaching, research, or service only grew by 18 percent. Inflation-adjusted spending on administration per student grew by 61 percent during the same period, while instructional spending per student rose 39 percent.*

So if we could find a way to put administration online, to create Massive Online Open Administrations or MOOAs, we could really cut some fat and reap some serious rewards.

Think about it: MOOAs are the perfect solution to the rising cost of higher education. We take superstar administrators and let them administer tens, maybe even hundreds, of thousands of faculty at a time. The Ivy League and Nescac colleges could pool their upper management as could, say, Midwestern state colleges that start with "I" or "O."

If the administrators cannot compete and be effective online, then it's time to get out of the way for the people who can. After all, no student ever thought it was worth $55,000 a year for time in a room with a particular dean or vice president, but we might be able to convince them, at least for a while longer, that the educational experience of the classroom is worth it.

Not only would putting administration online cut costs and raise profits, it would also cut down on wasted faculty hours at meetings. We faculty could log on and follow administration online, just like the students in MOOCs log on to learn. And like MOOC students, if we didn't find the administrators entertaining or educational enough, we could stop logging on and just become freer agents in the marketplace of knowledge.

It's possible that administrators won't immediately see how revolutionary MOOAs would be, but faculty and students must help them understand that MOOAs would be good for all of us. Really. The first colleges to start MOOAs can sell their superior administrators to institutions with more B Team administrators. B-Team-admin sorts will be let go. All the colleges can reap the benefit of cut administrative salaries and share the costs of MOOAs, thereby allowing them to cut tuition. So it is that MOOAs will make higher ed more democratic and accessible to all.

Administrators of the world unite! You have nothing to lose but your salaries.

Laurie Essig is an associate professor of sociology and women's and gender studies at Middlebury College. She is the author of American Plastic: Boob Jobs, Credit Cards, and Our Quest for Perfection *(Beacon Press, 2010).*

THE CHRONICLE
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March 19, 2013

Student Aid Can Be Awarded for 'Competencies,' Not Just Credit Hours, U.S. Says

By Kelly Field

Washington

It's official: Colleges can now award federal student aid based on measured "competencies," not just credit hours.

In a letter sent to colleges on Tuesday, the U.S. Education Department told them they may apply to provide federal student aid to students enrolled in "competency-based" programs and spelled out a process for doing so.

The long-awaited letter was issued as the department is poised to approve an application by Southern New Hampshire University to award aid based on the direct assessment of student learning. The college has served as a test case for the department as it has weighed how to extend aid to new models of learning while guarding against fraud.

At first glance, the letter does not seem all that remarkable; it simply confirms that colleges may apply for aid under the "direct assessment" provision of the Higher Education Act. That authority has existed since 2005, when Congress added the provision to the federal law to benefit Western Governors University.

But Western Governors has never used that authority, opting instead to keep converting its students' competencies into credits. Most other colleges didn't learn about the provision until recently, or assumed it didn't apply to them.

When college leaders finally asked the Education Department about it, they said they received mixed messages from agency leaders. Some colleges hesitated to develop competency-based programs, not knowing if they would be eligible for financial aid.

By clarifying that colleges may apply under the "direct assessment" provision—and encouraging them to do so—the Education Department is signaling a willingness to move beyond "seat time"—the time students spend in class—in awarding aid. That has important implications for new models of education, supporters of

the provision say.

"It moves away from time as a proxy for learning, and that is key," said Paul LeBlanc, president of Southern New Hampshire University.

What Will Employers Think?

In the letter, David A. Bergeron, acting assistant secretary for postsecondary education, said competency-based programs "have the potential for assuring the quality and extent of learning, shortening the time to degree/certificate completion, developing stackable credentials ... and reducing the overall cost of education."

Speaking to reporters on Monday, the under secretary of education, Martha J. Kanter, said the department wanted to encourage innovation and experimentation, but she stressed that officials would "be very careful going forward." She said her biggest concern, beyond fraud, was that employers would lack confidence in the new approaches.

"It's a new methodology that really needs to be tested," she said.

As part of the department's approval process, programs will have to map their competencies back to credit hours, and accreditors will have to agree with institutions' assessment of the equivalencies.

Sylvia Manning, president of the Higher Learning Commission of the North Central Association of Colleges and Schools, a regional accreditor, said, "Experience will show how workable this process is."

She said she was encouraged, however, by the department's promise to collaborate with colleges and accreditors on this issue.

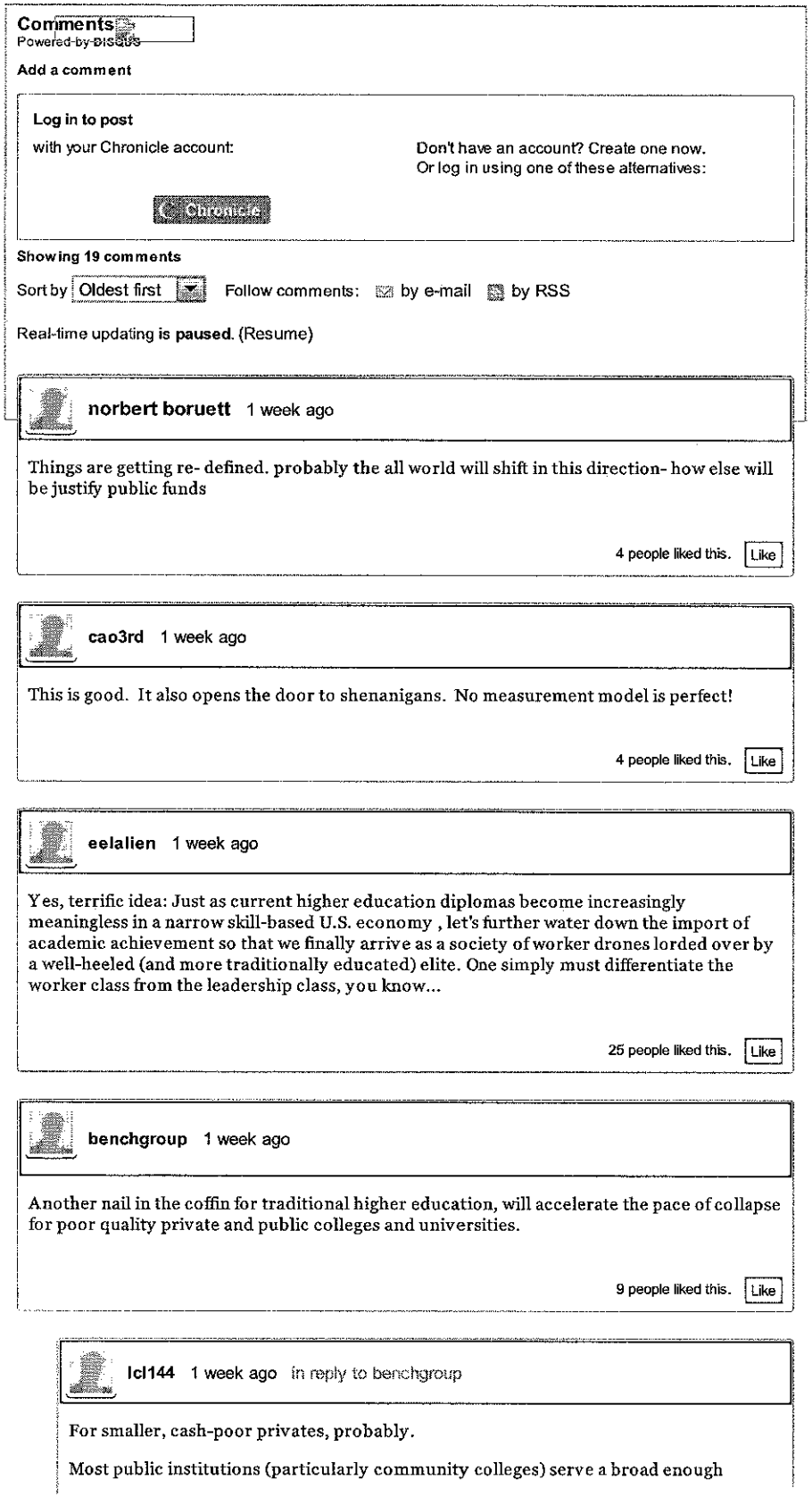
In the letter, department officials acknowledged that direct-assessment authority "may not adequately accommodate" all models of competency-based learning, and said the department would work with accreditors and colleges on other ways to recognize new approaches.

Amy Laitinen, deputy director for higher education at the New America Foundation, said she hopes the department will expand its direct-assessment authority to remedial education and test the idea of awarding aid for prior-learning assessments.

"This letter really opens the doors to other things," she said. "They are showing an interest in collaborating, in making this an ongoing conversation."

That conversation will continue next month, when a group of

influential philanthropies, including the Bill & Melinda Gates Foundation and the Lumina Foundation, will hold a meeting on the future of competency-based learning. The goal, organizers have said, is to create a "safe space" where accreditors, state regulators, department officials, and colleges can figure out ways to promote the programs, while protecting taxpayer dollars from fraud.



THE CHRONICLE
of Higher Education

A Massively Bad Idea

March 18, 2013, 3:03 pm
By Rob Jenkins

THE 2-YEAR TRACK

According to a recent article in *The Chronicle,* a state senator in California has sponsored a bill that would establish "a statewide platform through which students who have trouble getting into certain low-level, high-demand classes could take approved online courses offered by providers outside the state's higher-education system."

In other words, students at California's public colleges who are unable to enroll in regular classes due to overcrowding will instead be steered into MOOCs, or massive open online courses.

That strikes me as a massively bad idea.

Admittedly, I'm an outsider. I don't live in California, and I've never worked in that state's higher-education system. Maybe I just don't understand what's going on.

Apparently nobody else does, either. According to *The Chronicle,* "right now SB 520 is just a two-page 'spot bill,' a legislative placeholder to be amended with details later."

Lacking such "details," let's stick with what we do know. We know that community-college students are among those most affected by California's shortage of classes—*The Chronicle* reports that "more than 472,000 ... students enrolled in the California Community Colleges last fall were put on a waiting list for a course that was already full"—and thus they will be among those most affected by a move to MOOCs.

We know that community-college students, practically by definition, are some of the students least prepared for college work. Based on data compiled by the National Student Clearinghouse, we also know that they're among the least likely to complete college and earn a degree.

We know, because of extensive research by the Community College Research Center at Columbia University, among others, that community-college students who enroll in online courses tend to complete at an even lower rate than do students who enroll in face-to-face courses.

For example, a CCRC study that "followed the enrollment history of 51,000 community-college students in Washington State between 2004 and 2009 found an eight-percentage-point gap in completion rates between traditional and online courses," according to a *Chronicle* report. A separate study of Virginia community-college students, conducted by the CCRC in 2010, found a similar disparity.

And listen to the sobering conclusion of the Virginia study: "Regardless of their initial level of preparation ... students were more likely to fail or withdraw from online courses than from face-to-face courses. In addition, students who took online coursework in early semesters were slightly less likely to return to school in subsequent semesters, and students who took a higher proportion of credits online were slightly less likely to attain an educational award or transfer to a four-year institution."

In a MOOC, nobody can hear you scream.

I might have abandoned the charming Professor Emanuel altogether had the Supreme Court's decision to uphold President Obama's health-care program not injected the spice of real-time action into the discussion and refreshed my interest.

Somewhere between the videos and the readings and the occasional dip into the discussion groups, I found myself actually learning. I was particularly interested in how malpractice contributes to health-care costs but was instructed by my professor that the potential savings there amounted to mere "pencil dust." And who knew about the proposed National Medical Error Disclosure and Compensation Act of 2005, which would have reduced the number of malpractice cases, accelerated their resolution, and lowered costs by two-thirds?

To earn a certificate, I would have had to submit several essays for a grade, and I stopped short of that (see excuses above). Essays are peer-graded, and it won't surprise anybody who has ever taught undergraduates to hear that the student evaluations can be fierce. On the discussion boards, there was considerable discussion of grade deflation, plagiarism, and cheating. Alas, academic sins do follow us into the land of MOOC's, despite a nicely written honor code. Bad behavior in any classroom, real or virtual, should be no more surprising than gambling in *Casablanca*. In fact, brace yourself for a breathtaking new form of voluntary identity sharing: Your fake student avatar, now available for a small fee, will take your class for you.

Looking back, I suppose Fathom was a proto-MOOC, and I confess to some surprise that the Coursera format has evolved little beyond our pioneering effort of a decade ago. Yet when it came time to assess the course, I found myself rating it pretty highly, and concluded that aside from the format, the failings were mostly mine, for lack of focus. Like many MOOC students, I didn't completely "finish" the course. However, the final evaluations seemed mostly enthusiastic. From the comments, most of the students seemed to find the course long on substance: "comprehensive," "a good balance between the law, policy, and economics," "rich with multiple perspectives on health-policy issues."

Now, I could have read a book or done this on my own. But you could say the same thing about most education. A course is not a book but a journey, led by an expert, and taken in the company of

The Chronicle Review

A WEEKLY MAGAZINE OF IDEAS

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$1-TRILLION

in student debt—and the worst job market in years.

12th

Rank of United States in college degrees held by 25- to 34-year olds. Down from No. 1.

Increase in number of new students enrolled in for-profit colleges.

236%

41 MILLION

Visitors to the Khan Academy over the last 18 months.

160K

Participants in Prof. Sebastian Thrun's free TED-Ed course on artificial intelligence.

INNOVATE YOUR WAY OUT OF THAT

By ANN KIRSCHNER

Innovation in Higher Education?

By ANN KIRSCHNER

HAH

College leaders need to move beyond talking about transformation before it's too late

YOU CAN HARDLY MENTION higher education today without hearing the word "innovation," or its understudies "change," "reinvention," "transformation." Last summer the National Governors Association opened its meeting with a plenary session on higher education, innovation, and economic growth. We have journals galore (*Innovative Higher Education, Journal of the International Council for Innovation in Higher Education,* etc.), more conferences on "innovation" and higher education than I can count, and reports about innovation (in teaching, research, university business models, technology, you name it). Even the U.S. Chamber of Commerce recently weighed in with "College 2.0: Transforming Higher Education Through Greater Innovation."

It reminds me of the old joke.

Q. How many academics does it take to change a light bulb?

A. Change? Change? Who said anything about CHANGE?

But there is nothing funny about the need for innovation and the resistance to change. When I re-engaged with higher education after a 20-year absence in the private sector, I felt like Rip Van Winkle. The generations were different, but the landscape remained the same. During my long self-exile, I worked primarily in media and technology businesses, including with Fathom, an interactive knowledge network in partnership with Columbia University and other institutions here and abroad. I thought then that the shift to a global, technology-based knowledge society, as well as competition from international and for-profit institutions, would force innovation.

That was 10 years ago.

I was right that the shifts and competition would create a new playing field for higher education, but the pace of change is stuck somewhere between sluggish and glacial. Those are gross generalities, of course, as you can find hopeful signs everywhere, but when observed from the 20,000-foot level, the basic building blocks of higher education—its priorities, governance, instructional design, and cost structure—have hardly budged.

Even major higher-education projects and government initiatives are just playing around the margins. Take the international-export activity in education: Some institutions have indeed begun ambitious expansions with overseas branch campuses or partnerships, but they are merely transporting the old model to new physical space abroad. Or technology: Although e-learning has been around for nearly 20 years, technology in and out of the classroom is at the discretion of the professor, with rare institutional support or enthusiasm. Online learning has about as much credibility on some campuses as global warming at a Tea Party rally. About the only thing within academe that has moved rapidly is tuition.

A recent spate of books diagnoses the impediments to change and offers a broad menu of recommendations. We have *Reinventing Higher Education: The Promise of Innovation*, edited by Ben Wildavsky, Andrew Kelly, and Kevin Carey (Harvard Education Press, 2011); the second edition of *Higher Education? How Colleges Are Wasting Our Money and Failing Our Kids—and What We Can Do About It*, by Andrew Hacker and Claudia Dreifus (St. Martins Griffin, Reprint Edition, 2011); *The Innovation University: Changing the DNA of Higher Education From the Inside Out*, by Clayton M. Christensen and Henry J. Eyring (Jossey-Bass, 2011); and *Change.edu: Rebooting for the New Talent Economy*, by Andrew S. Rosen (Kaplan Publishing 2011). Add to that the previous *Crisis on Campus: A Bold Plan for Reforming Our Colleges and Universities*, by Mark C. Taylor (Alfred A. Knopf, 2010). Notice the prevalence of those "transformation" words.

Most of the books are written by insiders, i.e., academics in varying disciplines, from economics to political science to business management and the humanities. And most of their conclusions are surprisingly consistent, especially about the ways in which academic culture strangles innovation and reform. Love and respect for our educational mission do not deter these writers from identifying the greatest hurdle to overcome in higher education: inertia.

As Taylor, a philosopher of religion at Columbia University, argues, until colleges accept the need to change, they have little incentive to overcome their natural inclination to stay the same. The reverence for tradition that sends graduating seniors walking out through the gate they entered as freshmen can permeate an institution's entire world view: Honoring the past is a hedge against whatever barbarians are assaulting it in the present. For Taylor, inertia has turned into a crisis because tenure and traditional departments stifle the sharing of ideas.

You might expect such talk from a writer like Rosen, chairman and chief executive of Kaplan Inc. But you will find similar sentiments in

almost every one of the excellent essays in *Reinventing Higher Education*. Wildavsky et al. remind us of how distinguished academics like Ernest Boyer and Derek Bok rang the alarm bell in decades past.

We have been warned.

Leaping like Spider-Man over all the small talk about change are Christensen and Eyring. In his widely read 1997 book *The Innovator's Dilemma*, Christensen, a professor at the Harvard Business School, argued that when a mainstream organization encounters a "disruptive technology," place your bet on the upstart. Market dominance and a history of loyal customers delude the big company into complacency and a false sense of invincibility. I saw his theory played out in real life during my years in media, when three network broadcasters ruled the airwaves until new technologies—cable, satellite, home video, and the Internet—shaved their market share into slivers.

Now Christensen and his co-author Eyring, an administrator at Brigham Young University-Idaho, write that higher education is next in line for transformation. Universities have been protected by the prestige of their brands and the lack of any real competition. But online learning is that catalytic technology du jour, they argue, and universities will be committing "slow institutional suicide" if they fail to revolutionize their classroom-based models of instruction.

Before Christensen's "disruptive technology," there was the notion, from Intel's Andrew S. Grove, of a "strategic inflection point," the critical moment when an organization confronts a huge change and must, virtually overnight, adapt or fail. Whichever formulation you prefer, there is no getting around the fact that higher education must navigate an unprecedented series of threats, challenges, and opportunities.

Higher education faces a future that looks terrifyingly like our disintegrating schools.

Most people resist change. Most organizations resist change. The hard-working and deeply committed administrators and faculty of our colleges are not unique in seeking ways to make progress, while still preserving the status quo. The status quo, however, is already disintegrating. Higher education is facing a future that looks terrifyingly like the American tragedy known as our elementary and secondary schools.

The sky is indeed falling. Once No. 1 in college degrees held by 25- to 34-year-olds, by 2010 the United States was 12th among 36 developed nations. Graduation rates (except for the handful of students at our most selective institutions) lag, tuitions rise, while the unemployment rate is at record highs for recent college graduates. Imagine, $1-trillion in student debt—and then our graduates enter the worst job market in years. Meanwhile, *Academically Adrift*, a controversial but oft-quoted 2011 study by Richard Arum and Josipa Roksa, demonstrates that after four years, about a third of students have not significantly improved their writing, critical thinking, or analytical thinking.

Higher education is hardly to blame for the collapse of the economy, but we should be held accountable for our inability to control costs, our inadequate graduation rates, and our students' lack of preparedness for the modern work force.

IDEAS ARE EVERYWHERE, and innovation, technology, and accountability are their critical components. But they require tough choices and thick skins to survive the attack of the antibodies against change. Some university constituents hear the dreaded word "productivity" as a euphemism for bigger classes or just more classes taught on the backs of already overworked, underpaid adjuncts. In defense of the university, they head to the ramparts to demand increased state financing and cuts in administrator salaries, as if those were the only solutions.

I am often struck by how critics of university reform evoke "privatization" and "corporatization" as the twin demons that threaten to destroy the fabric of higher education. It would indeed be a sad world if the lofty goals of creating and transferring knowledge were reduced to the rhetoric and mechanics of the marketplace. However, surely we can learn something from the way commercial enterprises are driven to continual improvement by competition, consumer demand, and responsibility to their stakeholders. Students and their families, as well as taxpayers, legislators, and donors, pay dearly for the services of the university. There is nothing shameful or anti-intellectual or soulless in acknowledging that we are accountable to them.

Competition is growing, especially from the for-profit sector of higher education. *The New York Times* recently noted that from 1998 to 2008, enrollment in public and private universities went up less than 25 percent. Enrollment in for-profit colleges went up 236 percent. The federal government estimates that 7,500 for-profits enroll some 670,000 students each year in degree programs. There will continue to be serious concerns about academic rigor, recruiting, and the use of financial aid. But for-profits are not going away, nor is their challenge to traditional higher education. (I write with a continuing position in both sectors, as a board member of the Apollo Group and a dean at the City University of New York. We all have work ahead of us.)

Public financing for higher education is not likely to increase anytime soon. Stability is about the best we can expect from our state budgets. That reality makes it crucially important to consider new approaches—like streamlining pathways to degrees, redesigning models of instruction, competency-based programs, better advising, shutting down or consolidating underperforming programs, and more comprehensive and efficient support services focused solely on getting students to graduation. Many of those were put forth in a recent McKinsey & Company study, "Winning by Degrees," of strategies to expand enrollments and increase graduation. I saw little reaction to its extremely practical strategies. Perhaps McKinsey's recommendations, couched in consultantspeak phrases like "reduce nonproductive credits," strike the academic ear so harshly that the truth of the message simply doesn't get through.

But even if the strategies were deemed worthy, putting them into effect would have to survive the slow death by the decentralized decision making that is a fact of life in higher education. No wonder most presidents focus more of their time on fund raising and burnishing the prestige of their brand than on the dangerous work of reinventing the university.

Where is the enlightened university leader to find the courage and backbone to explore those avenues or find ones of her or his own? Not from alumni, who are enthusiastic cheerleaders but usually prefer everything to be the way it was when they were young. Not from accreditation agencies, which are the watchdogs of the status quo (remember their cousins, the financial ratings companies). And not from trustees, who are loving guardians but shun the role of agent provocateur (except perhaps in politically volatile states, a situation with its own problems). A recent study, "Still on the Sidelines," by Public Agenda (on whose board of directors I also serve) shows that most university trustees believe their role is to support the administration in solving short-term challenges, rather than to engage with broader issues of higher-education reform. In fact, most respondents consider the biggest challenges to the university to be external, especially declining state support and poorly prepared students, as opposed to any internal problems, such as obsolete models of education or unresponsive systems of governance.

As the creators of new knowledge, faculty should be in the vanguard of change, and sometimes they are. But they are also fierce guardians of the status quo. Hacker and Dreifus identify "the Professorial Campus" as representative of a fundamental misalignment between faculty incentives and institutional goals. Faculty are rewarded as individual performers for their research and their contribution to their field, but have no incentives for institutional loyalty or accountability for student

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success. How many faculty even know the graduation rates of their colleges, or consider it their problem? Scholarly activity tends to distance professors from undergraduate teaching and learning, as the former Harvard College dean Harry R. Lewis has argued in his 2006 *Excellence Without a Soul: How a Great University Forgot Education*. In fact, the reward for good faculty behavior is less contact with students—tenure equals less teaching.

We have changed too little in how we prepare fledgling college professors to become great teachers. While there are many excellent faculty-led efforts, and others supported by important institutions like the Carnegie Foundation for the Advancement of Teaching, participation is voluntary and tends to draw from the same small circles. "People who like this sort of thing," as Abraham Lincoln supposedly said, "will find it just the sort of thing they like." Imagine if improvements in outcomes through teaching became a significant factor in the tenure process, and if faculty were required to attend professional-development training.

Technology provides ways for great teachers to refresh their own scholarship and pedagogy and bridges the gap between how our students experience their college curriculum and how they learn everything else. Nearly one-third of all college students have chosen to take at least one online course. When they graduate, they will find online learning already fully integrated into the workplace. Many professional-certification programs—for doctors, lawyers, and accountants, for instance—have moved online, as have options for high-end master's degrees at globally focused institutions such as Johns Hopkins's Bloomberg School of Public Health.

Following Christensen's prediction, online courses are getting better all the time. If you play video games, you will have no problem fantasizing that we could someday get to the point where online courses have a smidgeon of the immersive power of, say, Skyrim. But even in their still rudimentary form, and despite a self-selection bias (students sufficiently motivated to attempt self-paced online courses), those courses are already worthy alternatives to the classroom. In fact, a 2009 U.S. Department of Education study demonstrated that elementary and secondary students who took all or part of a class online did better on average than those taking the same course through traditional face-to-face instruction.

Online courses are an important component of higher education's productivity tool kit, one of the few that offers an intellectually rigorous, measurable, *and* fiscally responsible way to serve more students while making better use of physical space. We could have tremendous impact by shifting first-year, entry-level courses wholly or mostly online, developed cooperatively but taught locally. Sounds radical, but it's a pretty old idea, put forth by Carol A. Twigg in 1999, and validated by trial programs over five years with 30 two- and four-year institutions. Her research documented that when institutions redesigned their large lecture courses, retention and learning outcomes improved, and costs went down. It is akin to hospitals discovering that cleanliness reduces bacteria and saves lives.

However, it is easier to wash your hands than it is to design a first-rate online course. It takes a different skill from classroom teaching, and it is more expensive than chalk. It can be accomplished by faculty working in teams or in conjunction with experienced instructional designers who understand how to create large-scale projects like MOOC's huge, open online courses, which have been pioneered by Stanford and other universities. Either way, most faculty will need help in becoming students again. While more-effective teaching should be its own reward, a major professional-development effort would provide a new opportunity to realign institutional and faculty goals. A radical expression would be to change the rules of tenure to require faculty to teach online or otherwise demonstrate their facility with 21st-century methodologies, as virtually every other employer now requires of their work force.

Widespread adoption of online courses is, however, just the most obvious next step. We should be agreeing on what standards of data collection make sense for advising our students and tracking their progress, and then moving rapidly at all levels of the university to adopt new technologies that demonstrate improved outcomes (e.g., mobile apps, tablet-based e-textbooks, and game-based learning). Ph.D. candidates should be encouraged to pursue alternatives to the traditional burnt offerings of scholarly monographs and books. In some graduate school somewhere, a diligent student is probably creating the 2012 equivalent of my own doctoral thesis on "The Return to Paradise Hall: Orphans in Victorian Literature." Instead of one more unread thesis, the English department of my dreams has the imagination to approve a George Eliot app, an interactive timeline, a digital repository of manuscripts, an online concordance of *Middlemarch*, or a Google mash-up of real and fictional settings in Victorian fiction—which could then become great tools for undergraduate teaching.

Many worthy projects in the digital academy are indeed moving in that direction. In the generally bleak picture for Ph.D.'s in the humanities, some digitally savvy humanists are piercing the gloom by finding positions in departments that specifically prize facility with technology. At my university, we have a cadre of "instructional technology fellows," who are doctoral students assigned to work with faculty and students on technological enhancements to the curriculum. We have to do more in that direction: As Anthony Grafton, former president of the American Historical Association, and others have recently stressed, our graduate schools are producing too many Ph.D.'s for nonexistent jobs, and yet are resistant to the idea of changing their curriculum or retrofitting young scholars to a more flexible definition of employment. Of course, that was already true when I received my Ph.D. in 1978, but never mind: It is even truer now.

The only thing within academe that has moved rapidly is tuition.

Here again, an openness to change is an essential prerequisite to change. The next step is a consistent and broad-minded strategy that embraces technology and learning at all levels, beginning with faculty who teach with digital gusto, and who are themselves qualified to direct technology-rich projects that will characterize an exciting new generation of scholars and teachers.

No discussion of change in higher education should omit international study as a key component of a comprehensive undergraduate program. In addition to better tools, more effective teaching, and a flexible curriculum, we need to connect more students to a meaningful global experience. Only about 14 percent of American college students study abroad, and few of them are students of color or low income. At my own institution, where 60 percent of our high-achieving students are immigrants or from immigrant families, we require all of our students to complete internships, or conduct independent research, or study abroad. Most students do all three. We guide their choices with academic advising that ties their program abroad to their course of study at home, and aid them with financial support. Their experience has proven time and again to be a vital and transformative part of their education. But we have the advantage of being a relatively young institution, with leadership that emboldens us to think that change can be a very good thing.

RUNNING like a vein of gold through much of the recent writing on change in higher education is the comforting theme that universities are more important than ever, since society needs educated citizens more than ever. Only we can issue an accredited degree, the precious entry ticket to the knowledge economy.

We will not have that advantage forever. The value of the diploma is symbolic, backed not by gold but by the graduate's sense of its worth and the employer's willingness to accept it as the currency of competency. Sometimes symbolism is simply too expensive.

The ultimate threat to universities could come from the disaggregation of the degree, as students take advantage of the growing availability of open-source learning networks to present evidence of competency to prospective employers. It is already true that more than one-third of college students attend multiple colleges, cobbling together credits from various places. The infrastructure to facilitate the creation of a personalized degree is not yet in place; students still end up with the last institution's name on the diploma. The transfer process is often a nightmare, as one faculty committee may reject a course taken elsewhere, even if the course is taken from another fully accredited institution—sometimes even from an institution within the same university system. Some disciplines have already begun "tuning" and standardizing their majors à la Europe's Bologna model. But an even more radical change is on the drawing board, courtesy of entrepreneurs who will force our crazy quilt of half-hearted articulation agreements to give way to an international network of course and credit exchanges.

Open-source courseware from traditional universities is already widely available. The Massachusetts Institute of Technology has been the one to watch here; after following early forays like Fathom into open-enrollment e-learning, *MITx*

will soon offer paying customers a certification of competency in various fields. (Perhaps bowing to internal constituencies, MIT apparently does not plan to offer the certificate in its own name. Too bad.) MIT is just one of many open-courseware sites: You can study Shakespearean comedy from the University of Washington, astronomy from Yale University, and physics from Utah State University.

Some of the most interesting work begins in the academy but grows beyond it. "Scale" is not an academic value—but it should be. Most measures of prestige in higher education are based on exclusivity; the more prestigious the college, the larger the percentage of applicants it turns away. Consider the nonprofit Khan Academy, with its library of more than 3,000 education videos and materials, where I finally learned just a little about calculus. In the last 18 months, Khan had 41 million visits in the United States alone. It is using the vast data from that audience to improve its platform and grow still larger. TED, the nonprofit devoted to spreading ideas, just launched TED-Ed, which uses university faculty from around the world to create compelling videos on everything from "How Vast Is the Universe?" to "How Pandemics Spread." Call it Khan Academy for grown-ups. The Stanford University professor Sebastian Thrun's free course in artificial intelligence drew 160,000 students in more than 190 countries. No surprise, the venture capitalists have come a-calling, and they are backing educational startups like Udemy and Udacity.

can't stop tuition from going up, the funding you get from taxpayers will go down." Because of the academy's inability to police itself and improve graduation rates, and because student debt is an expedient political issue, the Obama administration recently threatened to tie colleges' eligibility for campus-based aid programs to institutions' success in improving affordability and value for students.

All of those are signposts to a future where competency-based credentials may someday compete with a degree.

At this point, if you are affiliated with an Ivy League institution, you'll be tempted to guffaw, harrumph, and otherwise dismiss the idea that anyone would ever abandon your institution for such ridiculous new pathways to learning. You're probably right. Most institutions are not so lucky. How long will it take for change to affect higher education in major ways? Just my crystal ball, but I would expect that institutions without significant endowments will be forced to change by 2020. By 2025, the places left untouched will be few and far between.

Here's the saddest fact of all: It is those leading private institutions that should be using their endowments and moral authority to invest in new solutions and to proselytize for experimentation and change, motivated not by survival but by the privilege of securing the future of American higher education.

The stakes are high. "So let me put colleges and universities on notice," President Obama said in his recent State of the Union address. "If you

Whether the president's threat is fair or not, it will not transform higher education. Change only happens on the ground. Despite all the reasons to be gloomy, however, there is room for optimism. The American university, the place where new ideas are born and lives are transformed, will eventually focus that lens of innovation upon itself. It's just a matter of time. ■

Ann Kirschner is university dean of William E. Macaulay Honors College at the City University of New York and author of Sala's Gift: My Mother's Holocaust Story *(Free Press, 2006).*

THE CHRONICLE
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SUNY Signals Major Push Toward MOOCs and Other New Educational Models

March 20, 2013, 4:55 am

By Steve Kolowich

The State University of New York's Board of Trustees on Tuesday endorsed an ambitious vision for how SUNY might use prior-learning assessment, competency-based programs, and massive open online courses to help students finish their degrees in less time, for less money.

The plan calls for "new and expanded online programs" that "include options for time-shortened degree completion." In particular, the board proposed a huge expansion the prior-learning assessment programs offered by SUNY's Empire State College.

The system will also push its top faculty members to build MOOCs designed so that certain students who do well in the courses might be eligible for SUNY credit.

Ultimately, the system wants to add 100,000 enrollments within three years, according to a news release.

Even before the SUNY announcement, it had already been a big week for nontraditional models for awarding college credit. The U.S. Education Department on Monday said it had no problem with spending federal student aid on college programs that give credit based on "competency," not the number of hours students spend in class.

Empire State College's prior-learning assessment programs operate on a similar principle. Students who can demonstrate that they have acquired certain skills can get college credit, even if they did not acquire those skills in a college classroom.

The new SUNY effort will aim to copy the Empire State model across the system, said Nancy L. Zimpher, the chancellor.

"This resolution opens the door to assurances to our students that this kind of prior-learning assessment will be available eventually on all our campuses," said Ms. Zimpher in an interview.

SUNY is just the latest state system to use novel teaching and assessment methods to deal with the problem of enrolling, and graduating, more students.

Indiana, Missouri, Tennessee, Texas, and Washington have enlisted Western Governors University, a nonprofit online institution that uses the "competency" method, to help working adults in those states earn degrees. Pennsylvania and Wisconsin are building programs aimed at helping their own adult students redeem their on-the-job skills and knowledge for credit toward degrees. And California may soon use MOOCs to deal with overcrowding in some courses at its public colleges and universities.

Ms. Zimpher said the prior-learning expertise at Empire State would make it possible for the New York system to undertake the new effort without calling in outsiders.

"Usually when you have an outside vendor, it's to deliver something that you don't know how to do," she said. "In our case we actually know how to do this, and we know how to do it well."

This entry was posted in Distance Education, MOOCs. Bookmark the permalink.

THE CHRONICLE
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October 1, 2012

A Pioneer in Online Education Tries a MOOC

By Ann Kirschner

MOOOOOOOOC! Surely "massive open online course" has one of the ugliest acronyms of recent years, lacking the deliberate playfulness of Yahoo (Yet Another Hierarchical Officious Oracle) or the droll shoulder shrug suggested by the word "snafu" (Situation Normal, All Fouled Up).

I'm not a complete neophyte to online learning. Back in 1999, I led the start-up team for Fathom, one of the earliest knowledge networks, in partnership with Columbia University and other institutions here and abroad, and I'm a board member of the Apollo Group. So I was understandably curious about these MOOC's. With fond memories of a thrilling virtual trip a dozen years ago to Ephesus, Turkey, via a multimedia-rich, self-paced course created by a professor at the University of Michigan at Ann Arbor, I decided to check out a MOOC for myself.

Coursera, a new company that offers free online courses through some of the world's best-known universities, had the widest and most impressive selection. I blocked my ears to the siren call of science fiction, poetry, and history and opted for something sober: "Health Policy and the Affordable Care Act." It's taught by the Emanuel brother who isn't the Chicago mayor or the Hollywood superagent—Ezekiel Emanuel, an M.D. and Ph.D. who teaches at the University of Pennsylvania. For the next eight weeks, I was part of a noisy, active, earnest, often contentious, and usually interesting group of students. There didn't seem to be any way to gauge the number enrolled, but I learned about the students from a discussion group. There were quite a few lawyers, doctors, and other health-care professionals. Some were struggling with personal health disasters and wanted tools to predict how the health-care act would affect their futures. Some were international researchers doing comparative studies. Others were higher-education folks like me, testing the MOOC waters.

The quality and format of the discussions were immediate disappointments. A teaching assistant provided some adult

supervision, but too many of the postings were at the dismal level of most anonymous Internet comments: nasty, brutish, and long. The reliance on old-fashioned threaded message groups made it impossible to distinguish online jerks from potential geniuses. I kept wishing for a way to break the large group into small cohorts self-selected by background or interests—health-care professionals, for instance, or those particularly interested in the economics of health care. There was no way to build a discussion, no equivalent to the hush that comes over the classroom when the smart kid raises his or her hand.

If you believe the sage's advice that we learn much from our teachers and colleagues but most of all from our students, MOOC's will be far more effective when we are able to learn from one another.

Not surprisingly, enterprising MOOCsters are already organizing themselves outside the online classroom, using social-media tools like Google Hangouts and Facebook. In New York, students schedule meetings in Starbucks; in Katmandu, a group relies on Meetup to get together. Some course providers are facilitating external interaction: Udacity has offered Global Meetup Day with Sebastian Thrun, the Stanford University computer scientist (and Udacity co-founder) known for his course on artificial intelligence. Coursera threw a giant barbecue in Menlo Park, Calif., complete with volleyball and beanbag tossing.

Of course, peer learning takes you only so far: At some point, somebody has to know something about the subject. Professor Emanuel was a presence only in videos, but these were uniformly excellent. The cameras caught him walking briskly around an actual lecture hall, and I liked the presence of shadowy classmates sitting in Philadelphia, as if this were happening in real time. The videos were pleasantly peppered with pop-up quizzes. No embarrassment for the wrong answer, and I was ridiculously pleased at correctly guessing that the proportion of health-care costs in the United States that goes to prescription drugs is only 10 percent. For those in a rush, watching at twice normal speed is sort of fun— don't you secretly wish you could sit through some meetings at double speed?

I was a faithful student for a few weeks, until I fell prey to my worst undergraduate habit, procrastination—only now my excuses were far more sophisticated. I have to finish a manuscript! I have a board meeting! I have to meet my mother's new cardiologist!

In a MOOC, nobody can hear you scream.

I might have abandoned the charming Professor Emanuel altogether had the Supreme Court's decision to uphold President Obama's health-care program not injected the spice of real-time action into the discussion and refreshed my interest.

Somewhere between the videos and the readings and the occasional dip into the discussion groups, I found myself actually learning. I was particularly interested in how malpractice contributes to health-care costs but was instructed by my professor that the potential savings there amounted to mere "pencil dust." And who knew about the proposed National Medical Error Disclosure and Compensation Act of 2005, which would have reduced the number of malpractice cases, accelerated their resolution, and lowered costs by two-thirds?

To earn a certificate, I would have had to submit several essays for a grade, and I stopped short of that (see excuses above). Essays are peer-graded, and it won't surprise anybody who has ever taught undergraduates to hear that the student evaluations can be fierce. On the discussion boards, there was considerable discussion of grade deflation, plagiarism, and cheating. Alas, academic sins do follow us into the land of MOOC's, despite a nicely written honor code. Bad behavior in any classroom, real or virtual, should be no more surprising than gambling in *Casablanca*. In fact, brace yourself for a breathtaking new form of voluntary identity sharing: Your fake student avatar, now available for a small fee, will take your class for you.

Looking back, I suppose Fathom was a proto-MOOC, and I confess to some surprise that the Coursera format has evolved little beyond our pioneering effort of a decade ago. Yet when it came time to assess the course, I found myself rating it pretty highly, and concluded that aside from the format, the failings were mostly mine, for lack of focus. Like many MOOC students, I didn't completely "finish" the course. However, the final evaluations seemed mostly enthusiastic. From the comments, most of the students seemed to find the course long on substance: "comprehensive," "a good balance between the law, policy, and economics," "rich with multiple perspectives on health-policy issues."

Now, I could have read a book or done this on my own. But you could say the same thing about most education. A course is not a book but a journey, led by an expert, and taken in the company of

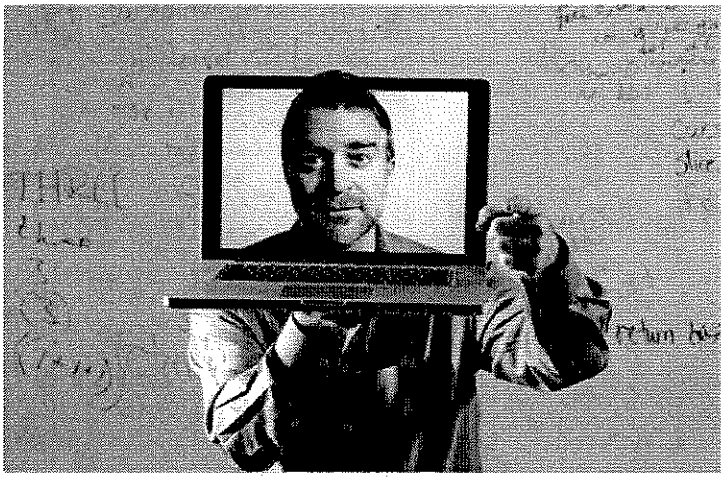
fellow travelers on a common quest for knowledge. My MOOC had those elements, albeit in a pretty crude form.

You'd have to live under a rock not to know that crushing student debt, declining state support, and disruptive technologies have made it imperative to look at new models for teaching. The competitive landscape for higher education is changing every day. China recently declared the goal of bringing half a million foreign students to its shores by 2020, and is investing in programs friendly to Americans and other international students. American MOOC's may point the way to retaining the best students and faculty in the world, while adding the lively and collaborative components of technology-enhanced teaching and learning.

It is true that nobody yet has a reasonable business plan for these courses, and there is concern over completion rates and whether colleges are "giving away the farm," as a recent MIT alumni-magazine article put it. It is not hard to anticipate the end of free and the start of the next stage: fee-based certificate programs built around MOOC's. But for now, the colleges leading those efforts are making relatively modest—and rare—investments in research and development. Their faculty members are excited about the opportunity to experiment. Let's give this explosion of pent-up innovation in higher education a chance to mature before we rush to the bottom line.

It is too soon to declare MOOC's either a silly fad or a silver bullet. But it is not too soon to declare 2012 the year that the public finally understood the potential for adult learning on a global scale. When a 10-week survey in modern and contemporary American poetry attracts more than 20,000 students around the world—as one offered by Coursera apparently just did—something important is happening.

Ann Kirschner is university dean of the Macaulay Honors College of the City University of New York, and author of the forthcoming Lady at the O.K. Corral: The True Story of Josephine Marcus Earp, to be published next year by HarperCollins.



Dave Chidley for The Chronicle

Paul Gries, of the U. of Toronto, has taught MOOCs on computer science.

The Professors Behind The MOOC Hype

By Steve Kolowich

What is it like to teach 10,000 or more students at once, and does it really work? The largest-ever survey of professors who have taught MOOCs, or massive open online courses, shows that the process is time-consuming, but, according to the instructors, often successful. Nearly half of the professors felt their online courses were as rigorous academically as the versions they taught in the classroom.

The survey, conducted by *The Chronicle,* attempted to reach every professor who has taught a MOOC. The online questionnaire was sent to 184 professors in late February, and 103 of them responded.

Hype around these new free online courses has grown louder and louder since a few professors at Stanford University drew hundreds of thousands of students to online computer-science courses in 2011. Since then MOOCs, which charge no tuition and are open to anybody with Internet access, have been touted by reformers as a way to transform higher education and expand college access. Many professors teaching MOOCs had a similarly positive outlook: Asked whether they believe MOOCs "are worth the hype," 79 percent said yes.

Princeton University's Robert Sedgewick is one of them. He had never taught online before he decided to co-lead a massive open online course titled "Algorithms: Part I."

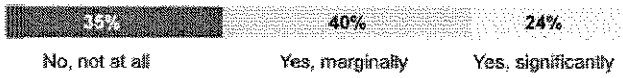
Like many professors at top-ranked institutions, Mr. Sedgewick was very skeptical about online education. But he was intrigued by the notion of bringing his small Princeton course on algorithms, which he had taught for 40 years, to a global audience. So after Princeton signed a deal with an upstart company called Coursera to offer MOOCs, he volunteered for the front lines.

His online course drew 80,000 students when it opened last summer, but Sedgewick was not daunted. He had spent hundreds of hours readying the material, devoting as much as two weeks each to recording and fine-tuning videotaped lectures. The preparation itself, he said, was "a full-time job."

It paid off. By the time his six-week course was over, the Princeton professor had changed his mind about what online education could do. Mr. Sedgewick now classifies himself as "very enthusiastic" about virtual teaching, and believes that soon "every person's education will have a significant online component."

FROM THE SURVEY

Do you believe MOOCs could eventually reduce the cost of attaining a college degree at your institution?

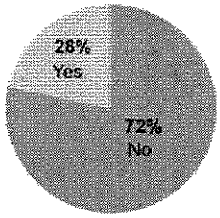


Do you believe MOOCs could eventually reduce the cost of attaining a college degree in general?

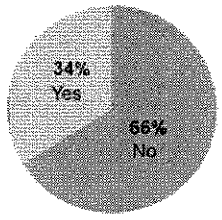
Did teaching a MOOC cause you to divert time from other duties, such as research, committee service, or traditional teaching?

Note: Because of rounding, percentages may not add up to 100 percent.

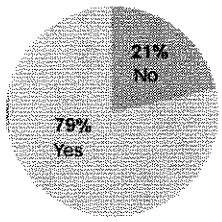
Do you believe students who succeed in your MOOC deserve formal credit from your home institution?



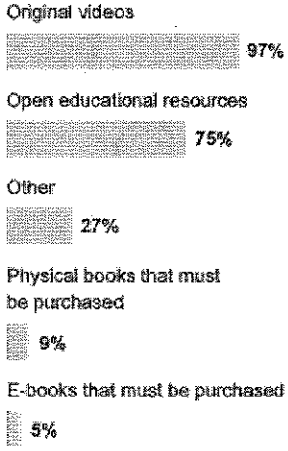
Do you believe your home institution will eventually grant formal credit to students who succeed in your MOOC?



Over all, do you believe MOOCs are worth the hype?



Which of the following learning materials do you assign in your MOOC?



The Chronicle survey considered courses open to anyone, enrolling hundreds or even thousands of users (the median number of students per class was 33,000). About half of the professors who responded were still in the process of teaching their first MOOC, while the rest had led an open online course that had completed at least one full term.

Many of those surveyed felt that these free online courses should be integrated into the traditional system of credit and degrees. Two-thirds believe MOOCs will drive down the cost of earning a degree from their home institutions, and an overwhelming majority believe that the free online courses will make college less expensive in general.

The findings are not scientific, and perhaps the most enthusiastic of the MOOC professors were the likeliest complete the survey. These early adopters of MOOCs have overwhelmingly volunteered to try them—only 15 percent of respondents said they taught a MOOC at the behest of a superior—so the deck was somewhat stacked with true believers. A few professors whose MOOCs have gone publicly awry did not respond to the survey.

But the participants were primarily longtime professors with no prior experience with online instruction. More than two-thirds were tenured, and most had taught college for well over a decade. The respondents were overwhelmingly white and male. In other words, these were not fringe-dwelling technophiles with a stake in upending the status quo.

Therefore the positive response may come as a surprise to some observers. Every year the Babson Survey Research Group asks chief academic administrators to estimate what percentage of their faculty members "accept the value and legitimacy of online education"; the average estimate in recent years has stalled at 30 percent, even as online programs have become mainstream.

Professors at top-ranked colleges are seen as having especially entrenched views. For years, "elite" institutions appeared to view online courses as higher education's redheaded stepchild—good enough for for-profit institutions and state universities, maybe, but hardly equivalent to the classes held on their own campuses. Now these high-profile professors, who make up most of the survey participants, are signaling a change of heart that could indicate a bigger shake-up in the higher-education landscape.

Why They MOOC

Professors who responded to *The Chronicle* survey reported a variety of motivations for diving into MOOCs. The most frequently cited reason was altruism—a desire to increase access to higher education worldwide. But there were often professional motivations at play as well.

John Owens was drawn to MOOCs because of their reach. He also did not want to be left behind.

Mr. Owens, an associate professor of electrical and computer engineering at the University of California at Davis, liked the idea of teaching parallel computing, a method that allows computers to execute many tasks at once, to a global audience. Putting his course on Udacity's platform would be good for the 15,000 students who registered at no cost, he figured.

But it might also be good for him. It does not take a programming expert to decrypt the writing on the wall: No matter where you teach, online education is coming. "I would rather understand this at the front end," said Mr. Owens, "than be forced into it on the back end."

A number of the professors in the survey said they hoped to use MOOCs to increase their visibility, both among colleagues within their discipline (39 percent) and with the media and the general public

(34 percent).

This opportunity was not lost on Mr. Sedgewick, the Princeton professor. "Every single faculty member has the opportunity to extend their reach by one or two or three orders of magnitude," he said.

For heavyweights like Mr. Sedgewick, who co-wrote a popular textbook on algorithms, allowing somebody else to beat him to the punch on that opportunity would be risky. By volunteering for duty, he was, in part, defending his roost. "I wouldn't want anybody else's algorithms course to be out there," said Mr. Sedgewick. He was one of the few professors in the survey who recommended that students buy a textbook—his own.

Nevertheless, most professors did not seem to think that a MOOC-related boost to their professional profile would equate to a payday. Just 6 percent were looking to increase their earning power, and only one hoped that his MOOC work would help him get tenure.

Learning From Online

In May 2012, when the presidents of Harvard University and the Massachusetts Institute of Technology announced that they would enter the MOOC fray with $60-million to start edX, they were emphatic that their agenda was to improve, not supplant, classroom education.

"Online education is not an enemy of residential education," said Susan Hockfield, president of MIT at the time, from a dais at a hotel in Cambridge, "but an inspiring and liberating ally."

This has become a refrain for traditional universities that have been early adopters of MOOCs, and many of the professors in *The Chronicle* survey seem to have taken the message to heart. Thirty-eight percent of those surveyed said one motivation was to pick up tips to help improve their classroom teaching.

Among them is M. Ronen Plesser, an associate professor of physics at Duke University, who saw the challenge of captivating a vast, fickle audience as a way to reassess his own teaching techniques. "I found that producing video lectures spurred me to hone pedagogical presentation to a far higher level than I had in 10 years of teaching the class on campus," he said.

The result was an online class that he describes as "significantly more rigorous and demanding than the on-campus version."

A key way professors are learning new teaching tricks is by taking cues from their MOOC students. Coursera, edX, and Udacity all track the interactions each student has with the course materials, and with one another, within a given course. Each platform then gives professors the ability to see data that could tell them, for example, which methods and materials help students learn and which ones they find extraneous or boring.

The idea is to glean insights from the online courses that professors can apply in the traditional classroom, where such data are hard to come by.

Michael J. Cima, a professor of materials science and engineering at MIT, used data from his MOOC to do a side-by-side analysis of learning outcomes for the students in his massive online chemistry course and the ones taking the traditional version on campus.

"I have evidence that the online measurements of outcomes may be better than what we have been doing in class," Mr. Cima said. "This surprised me and caused me to challenge some of my assumptions

about how well we do assessment in a residence-based class."

He is thinking about bringing some of the automated assessment tools from his MOOC into his traditional course when it starts up again in the fall. He likes the idea of constantly drilling students with online quizzes that they can take at their own pace. But there would have to be one key difference for his MIT students, he said: The students would have to work on their quizzes in a physical classroom, with a proctor.

Price of Free Teaching

The insights that come with teaching massive online courses, however, come at a price. Many professors in the survey got a lot out of teaching MOOCs, but teaching MOOCs took a lot out of them.

Typically a professor spent over 100 hours on his MOOC before it even started, by recording online lecture videos and doing other preparation. Others laid that groundwork in a few dozen hours.

Once the course was in session, professors typically spent eight to 10 hours per week on upkeep. Most professors managed not to be inundated with messages from their MOOC students—they typically got five e-mails per week—but it was not unusual for a professor to be drawn into the discussion forums. Participation in those forums varied, but most professors posted at least once or twice per week, and some posted at least once per day.

In all, the extra work took a toll. Most respondents said teaching a MOOC distracted them from their normal on-campus duties.

"I had almost no time for anything else," said Geoffrey Hinton, a professor of computer science at the University of Toronto.

"My graduate students suffered as a consequence," he continued. "It's equivalent to volunteering to supply a textbook for free and to provide one chapter of camera-ready copy every week without fail."

Mr. Owens, at Davis, had a similar experience. He spent 150 hours building his MOOC, "Introduction to Parallel Programming," for Udacity. More than 15,000 people registered. Once the course started, he spent about five hours per week on it, posting frequently on the discussion forums.

Although Mr. Owens did not ask for relief from his normal teaching load to make time for his MOOC, he doubts that he would have gotten it if he had asked.

"It's out of 'my own' time, which is quite limited," Mr. Owens reported. "So, yes, other areas of my job suffered."

Most colleges do not yet have a protocol for integrating their instructors' work on MOOCs into normal faculty work flow. But if the survey responses are any indication of how much work goes into a MOOC, institutions may soon have to figure out how to help professors fit them into their professional lives.

"It takes an immense amount of work to produce an adequate MOOC," said Armando Fox, a professor of electrical engineering at the University of California at Berkeley who has co-taught three MOOCs for Coursera, "and a staggering amount of work to produce a really good one."

Mr. Owens, for one, said he did not plan to teach another MOOC until his bosses reduce his classroom teaching load to give time for it. The continuing participation of top faculty members in massive online courses, he said, will depend on whether their colleges are willing to let MOOCs distract them from

their traditional duties.

At that point, Mr. Owens said, campus officials will need to ask themselves whether they want to give that faculty time to online students, "99 percent of whom who are not at their universities."

Cutting College Costs

Most of the professors whose MOOCs had completed at least one term reported the number of students who had "passed" the courses. The average pass rate was 7.5 percent, and the median number of passing students was 2,600.

In lieu of credit toward a degree, most professors offer certificates to students who complete massive online courses. Three-quarters of the professors surveyed said they offered some sort of document certifying that a student had completed a MOOC.

It remains unclear, however, how seriously those certificates are being taken by employers. College degrees are still seen as the coin of the realm.

Perhaps the biggest question surrounding MOOCs is how they might integrate with the current credentialing infrastructure in a way that makes college degrees less expensive.

The American Council on Education, a group that advises college presidents on policy, recently endorsed five MOOCs from Coursera for credit, and it is reviewing three from Udacity.

If colleges yield to the council's judgment, it could mean that students who are clever enough to pass a MOOC could redeem their learning for credit toward a traditional degree. There would be fees in the process, but no tuition.

Most professors who responded to *The Chronicle*'s survey said they believed that MOOCs would drive down the cost of college; 85 percent said the free courses would make traditional degrees at least marginally less expensive, and half of that group said it would lower the cost "significantly."

As far as awarding formal credit is concerned, most professors do not think their MOOCs are ready for prime time. Asked if students who succeed in their MOOCs deserve to get course credit from their home institutions, 72 percent said no.

However, it's worth noting that more than a quarter of the professors felt that their successful MOOC students do deserve credit. Those respondents include faculty members at Penn, Princeton, Duke, and Stanford. Most of them led courses that were oriented to math, science, and engineering.

Robert W. Ghrist, a professor of mathematics and electrical and systems engineering at the University of Pennsylvania, is among them. His MOOC, "Calculus: Single Variable," is one of the five Coursera courses that ACE has recommended for credit.

Fitting his assessments into the parameters of Coursera's auto-grading system has been somewhat limiting, but no more than the math placement exams that Penn already uses, said Mr. Ghrist, who previously oversaw those tests.

"I would, of course, prefer it if I could read over their work carefully and follow their logic," he said. But that is a technology problem that Coursera will soon solve, he believes.

The Penn professor built his course with the express intention of mimicking, as closely as possible, the version he had taught on campus for eight years.

"Some MOOCs that I've sampled seem to be a bit watered down for the sake of mass appeal," said Mr. Ghrist. "My course is definitely not like that."

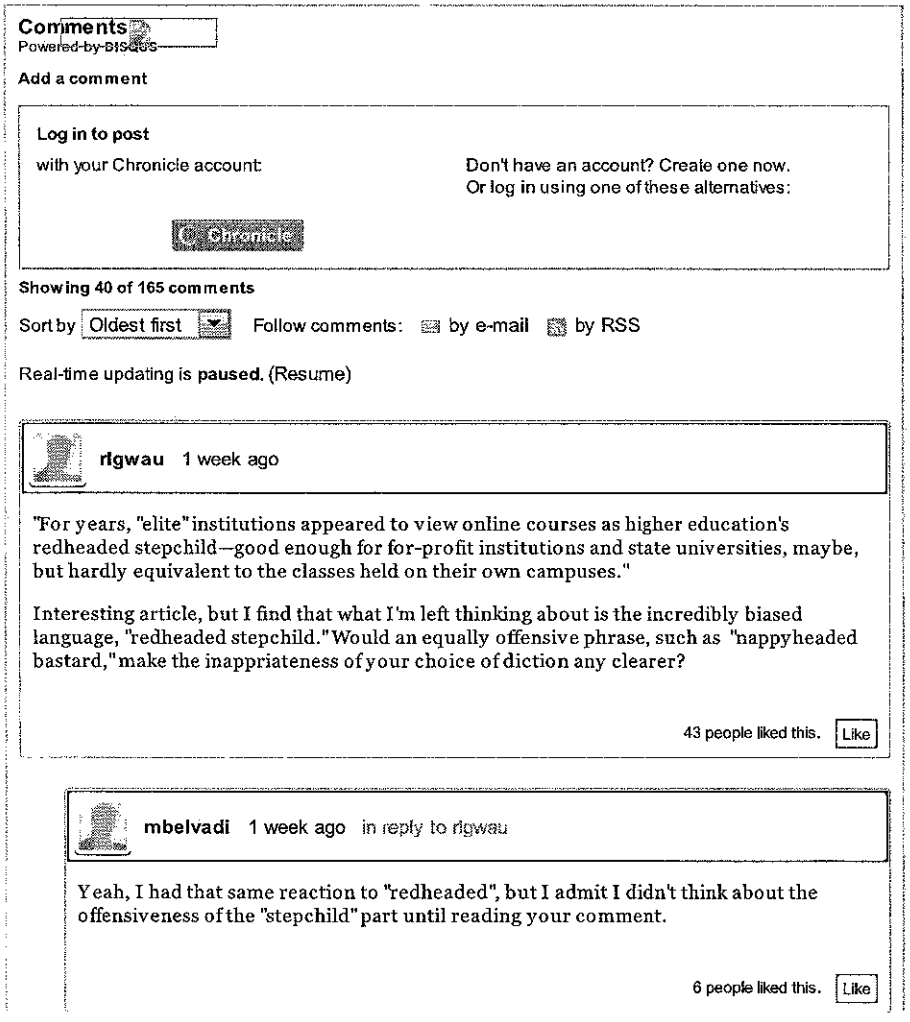
In some disciplines, the number of creditworthy MOOCs might depend on the priorities of professors and their institutions more than the limitations of online technology. Some professors might choose to build their courses with formal credit in mind; others might have a different agenda.

Mr. Ghrist, for one, hopes to see the number of creditworthy MOOCs go up as massive online courses proliferate. And he hopes that, as they do, universities like Penn will begin conferring transfer credits on students who enroll with several MOOCs already under their belts—allowing them to finish their degrees more quickly, for less money.

"I have four kids who are going to have to go to college," said Mr. Ghrist. By the time they do, the professor fully expects that MOOCs will be an important component of their applications.

Correction (3/21/2013, 5:29 p.m.): This article originally identified inconsistently the MOOC company that hosts a course led by John Owens, of the University of California at Davis. It is Udacity, not Coursera. The article has been updated to reflect this correction.

Correction (3/24/2013, 12:31 p.m.): This article originally misreported two facts about a course taught by Princeton's Robert Sedgewick. He has taught the traditional, in-class version of the course, "Algorithms: Part I," for 40 years, not five years, and the MOOC version drew 80,000 registrants, not 28,000. The article has been updated to reflect this correction.



What You Need to Know About MOOCs

We'll be updating this page regularly.
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Call it the year of the mega-class.

Colleges and professors have rushed to try a new form of online teaching known as MOOCs—short for "massive open online courses." The courses raise questions about the future of teaching, the value of a degree, and the effect technology will have on how colleges operate. Struggling to make sense of it all? On this page you'll find highlights from *The Chronicle*'s coverage of MOOCs.

What are MOOCs?

MOOCs are classes that are taught online to large numbers of students, with minimal involvement by professors. Typically, students watch short video lectures and complete assignments that are graded either by machines or by other students. That way a lone professor can support a class with hundreds of thousands of participants.

Why all the hype?

Advocates of MOOCs have big ambitions, and that makes some college leaders nervous. They're especially worried about having to compete with free courses from some of the world's most exclusive universities. Of course, we still don't

know how much the courses will change the education landscape, and there are plenty of skeptics.

These are like OpenCourseWare projects, right?

Sort of. More than a decade ago, the Massachusetts Institute of Technology started a much-touted project called OpenCourseWare, to make all of its course materials available free online. But most of those are text-only: lecture notes and the like. Several colleges now offer a few free courses in this way, but they typically haven't offered assignments or any way for people who follow along to prove that they've mastered the concepts. MOOCs attempt to add those elements.

So if you take tests, do you get credit?

So far there aren't any colleges that offer credit for their MOOCs. But some MOOC participants can buy or receive certificates confirming their understanding of the material.

Who are the major players?

Several start-up companies are working with universities and professors to offer MOOCs. Meanwhile, some colleges are starting their own efforts, and some individual professors are offering their courses to the world. Right now four names are the ones to know:

edX (http://www.edx.org/)

A nonprofit effort run jointly by MIT, Harvard, and Berkeley.

Leaders of the group say they intend to slowly add other university partners over time. edX plans to freely give away the software platform it is building to offer the free courses, so that anyone can use it to run MOOCs.

Coursera (http://www.coursera.org/)

A for-profit company founded by two computer-science professors from Stanford.

The company's model is to sign contracts with colleges that agree to use the platform to offer free courses and to get a percentage of any revenue. More than a dozen high-profile institutions, including Princeton and the U. of Virginia, have joined.

Udacity (http://www.udacity.com/)

Another for-profit company founded by a Stanford computer-science professor.

The company, which works with individual professors rather than institutions, has attracted a range of well-known scholars. Unlike other providers of MOOCs, it has said it will focus all of its courses on computer science and related fields.

Khan Academy (http://www.khanacademy.org/)

A nonprofit organization founded by the MIT and Harvard graduate Salman Khan.

Khan Academy began in 2006 as an online library of short instructional videos that Mr. Khan made for his cousins. The library—which has received financial backing from the Bill & Melinda Gates Foundation and Google, as well as from individuals —now hosts more than 3,000 videos on YouTube. Khan Academy does not provide content from universities, but it does offer automated practice exercises, and it recently offered a curriculum of computer-science courses. Much of the content is geared toward secondary-education students.

Udemy (http://www.udemy.com/)

A for-profit platform that lets anyone set up a course.

The company encourages its instructors to charge a small fee, with the revenue split between