other fields such as health care, financial services, social services, and compulsory education, regulation both shapes organizational behavior and is a reaction to it. In postsecondary education, for-profits have demonstrated a disproportionate willingness and capacity to provide more educational services to nontraditional students at scale. Absent major changes in its regulatory environment, for-profits are likely to have an increasing impact on the shape of higher education in the future, certainly for nontraditional students and perhaps for traditional students and institutions as well.

7

What Online Learning Can Teach Us about Higher Education

Peter Stokes

INNOVATION TEACHES US THINGS we didn't know about ourselves. It disrupts our feelings of familiarity with the day to day. It forces us to raise questions about the value of long-held traditions. It is often, as a result, freighted with aspects of the messianic and the heretical simultaneously. It draws the attention of acolytes and reactionaries while leaving a great many of us wondering which point of view will eventually prove the more reasonable. Done well, innovation can stir up a good deal of trouble. Small wonder then that inventing, say, movable type might eventually lead to the burning of a few choice books, or that plugging in an electric guitar at a folk festival might take a relatively staid art form into a bold, new direction.

Within the field of higher education, online learning has had a no less conflicted reception. Consider these contrasting positions on the effects of this new technology within the academy.

> "The Internet is the biggest technological change in education and learning since the advent of the printed book some 500 years ago," claims William Draves.[1] "It is destroying the traditional classroom and replacing it with an even better way to learn and teach."

> "[T]he new technology of education, like the automation of other industries," counters David Noble, "robs faculty of their knowledge and skills, their control over their working lives, the product of their labor, and, ultimately, their means of livelihood."[2]

For innovation, it is always the best of times and the worst of times. For one observer, online learning improves the educational experience. For another, online learning destroys it.

In this chapter, I argue that the trouble caused by an innovation like online learning is itself instructive. Debates over the last fifteen years about the efficacy of this new way of teaching and learning have taught us important things about higher education, particularly with respect to our understanding of the relationships between learning environments and learning, cost and quality, profit and mission, and the needs of faculty and the needs of students. One of the benefits resulting from the online learning phenomenon, in my view, has been the extent to which it has forced us to reconsider what we know about the traditional classroom and the traditional institution—and that can only be a good thing. Not only does reflection of this sort help us to recognize and incorporate promising new practices into the work of higher education, it also helps us to better recognize and reinvigorate the critical traditions that have made our system of higher education so successful up to now.

The traditional and virtual classrooms are, after all, only a means to an end, and that end is education. As someone who has studied and taught in the traditional as well as the online classroom, I find the more extreme rhetoric regarding online learning—both at the pro- and anti-online ends of the spectrum—to be largely confusing means with ends. The fact is that, today, one in four students within higher education is enrolled in at least one online course.[3] Nearly one in ten is enrolled in a fully online degree program.[4] I think it's fair to say that our colleges and universities have not been destroyed as a result, but neither have they been changed utterly for the better.

So what has online learning accomplished? And what has it taught us about higher education? To better understand the strengths and limits of

online learning, we first need a way of judging the extent to which online learning is in fact innovative. For that reason, I begin this examination of the effects of online learning on higher education by looking at a framework for recognizing innovation. I then provide a brief history of online learning, from its roots in centuries-old correspondence programs up to the present moment when nearly all institutions offer some online courses. Next, I explore some of the critical challenges associated with online higher education today. I then close with a look into the near future and consider how online learning might further change higher education.

WHAT IS INNOVATION?

Given the tremendous growth in online learning over the last decade and a half, we might comfortably hypothesize that this new form of learning has been both disruptive and innovative. But if we're serious about this proposition, we would still need a means of testing the hypothesis. Clayton Christensen's theory of disruptive innovation comes in handy here. In 1997, Christensen authored *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, a business book that first introduced his now-famous concept. More recently, in 2008, Christensen, along with colleagues Michael Horn and Curtis Johnson, adapted the concept to the field of K–12 and higher education in *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns.*

A "disruptive innovation is *not* a breakthrough improvement," Christensen and his colleagues argue, but one that brings to market "a product or service that actually is not as good as what companies historically had been selling."[5] This new product is by and large inferior to what has traditionally been offered, but it is "affordable and simple to use," and—most importantly—serves new customers. As an example, the authors point to mainframe computers from companies such as IBM, which were expensive and entrenched in the computer market of the late 1970s. Soon, however, companies like Apple came along with relatively inexpensive and inferior computers for a different set of customers altogether—customers who

previously had not been in the market for a mainframe computer. It is the interest of these new customers that makes a paradigm-shifting innovation such as the personal computer truly disruptive. The difficulty for firms like IBM under these changing market conditions is that their traditional products are—initially at least—much more profitable than these newer products, and thus it is difficult for leading firms to embrace such innovations. They are too busy trying to serve their current customers and meet their needs for bigger, more powerful computers. They don't have the incentive to make less expensive and easier-to-use products, at least, not until someone else has. By then, it's often already too late. At that point, the inferior product has improved dramatically, and the customers of the older product line begin to switch to the newer product line themselves.

Something similar may have begun unfolding within higher education in the late 1990s, when a number of universities—many of them for-profit—jumped into the online learning market, while other universities hesitated or turned their backs. No doubt this early entrance into the online market helps explain why for-profits, a class of institutions that accounts for approximately 9 percent of all higher education enrollments today, account for a disproportionate 42 percent share of fully online enrollments.[6] Have for-profit universities managed to create a new market? Possibly. Enrollments within a number of the leading for-profit institutions skew heavily toward low-income, minority populations that are often poorly represented within traditional institutions. Indeed, one of the great debates of the online learning era has been whether the technology is creating a new market or cannibalizing an old one. What Christensen and his colleagues argue, however, is that all disruptive innovations start out doing the former and end up doing the latter. Insofar as for-profit institutions were early leaders in online higher education, it may well be that they not only have brought new customers into higher education, but have done so in large measure on the back of a disruptive innovation, a technology that is arguably cheaper to scale and easier for certain students to use than the traditional classroom. Certainly the for-profits have focused on developing a simpler offering, one focused on career utility, and largely unencumbered by amenities such as dormitories, sports stadia, or the recently much maligned rock-climbing wall. The fact is that greater numbers of students than ever before report that they are willing to consider earning a degree online. Perhaps online learning is on its way to becoming a truly disruptive innovation, as its history might suggest.

A BRIEF HISTORY OF ONLINE LEARNING

Web-based online higher education has been with us for a good fifteen years, but it can trace its genealogical roots back many decades through a variety of distance education media—with video, CD-ROM, television, radio, film, and correspondence instruction representing key branches in the distance-delivery family tree.

As with so many things historical and educational in the United States, the city of Boston has a claim to playing a foundational role in distance education—the great-great-grandfather of today's online learning. One Caleb Phillips is reported to have advertised correspondence lessons for mastering the art of shorthand as early as 1728 in the *Boston Gazette*.[7] By 1873, another Boston resident, Anna Ticknor, reportedly established a society dedicated to correspondence instruction for women, which served some ten thousand students over more than two decades.[8] In *Universities in the Marketplace*, former Harvard University president Derek Bok notes that the University of Chicago created its own correspondence school in 1892.[9] (In fact, a number of well-known universities within the United States—the University of Minnesota and the University of Kansas, among them—continue to offer traditional correspondence programs to this day.) By the early twentieth century, however, new technologies, such as film, had entered the field. According to Michael Jeffries, instructional films had proliferated in such great numbers in the first decade of that century that it was possible to put together a catalog of these films as early as 1910.[10]

Each of these media had its evangelists. As Jeffries notes, in 1913, no less a personage than Thomas Edison remarked, "Our school system will be completely changed in the next ten years" as a result of the invention of

film. Similarly enthusiastic forecasts have, of course, greeted the introduction of each successive new technology in the early and latter halves of the twentieth century, from radio to video, and all points in between. As we've already seen, the Internet has provided only the latest opportunity for some to foretell the complete revolution of our education system.

Prognostications such as these seem hyperbolic, mostly in retrospect. But they may well nurture the skepticism of some contemporary observers, such as Robert Zemsky and William Massy, who, in 2004, wrote in, "Thwarted Innovation: What Happened to e-learning and Why," that when it comes to online instruction, "the reality never matched the promise—not by a long shot."[11] It is still fair to question whether or not online learning has lived up to its promise, but there can be little doubt that its reach and impact far exceed those of earlier technologies adapted for the purposes of education.

By Eduventures's estimates, fewer than seven thousand students were pursuing degrees via fully online instruction in 1995, that is, earning their degrees exclusively through online learning, without taking any courses in the traditional classroom.[12] By 2008, that number had soared to 1.8 million.[13] According to the Sloan Consortium, a professional association of distance educators and administrators that tracks data on a wider variety of online learning activities, by 2008 more than 4.6 million students were enrolled in at least one online course—a figure that amounts to 25 percent of the total higher education student head count.[14] The Sloan figures look not only at students who are pursuing degrees entirely online, but also at individual course enrollments among students who might be taking the bulk of their courses via the traditional classroom. No other technological advance has extended so widely, so quickly. The growth in online learning has been swift and steep, and along the way it has helped to create some very large institutions.

By the fall of 2009, the for-profit University of Phoenix was enrolling 364,000 students in its online division alone.[15] That's more students than eight NYUs put together. Many of the other leading providers of online-degree programs are likewise for-profit institutions, such as Kaplan University with fifty-seven thousand students, and Walden University with forty thousand students. The nonprofit institution with the greatest number of online students is Liberty University, a private evangelical Christian institution founded by Rev. Jerry Falwell, with approximately forty-five thousand fully online degree seekers—up from approximately three thousand as recently as 2002. The nonprofit public institution with the greatest number of online students is Rio Salado College, a community college with thirty-five thousand fully online students. Of the fifteen institutions with the largest numbers of fully online students, eleven are for-profit.

This level of growth might not have been possible without the help of a small number of pioneers who brought online learning out of the margins and into the mainstream, people like Frank Mayadas of the Sloan Foundation, who has provided seed funding to help institutions such as the University of Illinois, the University of Massachusetts, and many others, go online; Carol Twigg of the National Center for Academic Transformation (NCAT), who has conducted important research on the costs and benefits of online instruction; and academic scholars like Harvard's Chris Dede, who has examined the pedagogical implications of moving teaching and learning online. Institutional decision makers have been further helped by the emergence of professional associations, periodicals, scholarship, new job titles, new institutional departments, and a host of businesses dedicated to helping colleges and universities deliver programs and courses online—from course management systems to enrollment management services to assessment tools. Today, online learning is both big business and a serious academic endeavor. Nearly three hundred years from the emergence of correspondence instruction, we now have far more compelling ways of helping students to learn at a distance, whether the distance be near or far.

For some, however, all this growth is symptomatic of everything that is wrong with online learning. The recently deceased York University social scientist and historian of automation David Noble, writing in his 1998 essay "Digital Diploma Mills, Part II," argues that, "In the wake of the online education gold-rush, many have begun to wonder, will the content of education be shaped by scholars and educators or by media businessmen, by

the dictates of experienced pedagogy or a quick profit? Will people enroll in higher educational institutions only to discover that they might just as well have stayed home watching television?"[16]

Despite its title, Noble's influential essay does not actually address the matter of diploma mills. But he is not the only observer of the online learning phenomenon to fail to differentiate fraudulent credentials, online learning, and for-profit institutions—a conflation that has certainly confused the public discourse about online higher education. Diploma mills are typically thought of as organizations that offer degrees in exchange for money rather than as institutions that award diplomas based on demonstrated achievement of learning or the completion of accredited degree programs. While many of the largest providers of online instruction are for-profit, that does not make them diploma mills. Nor does the fact that nonprofit institutions such as Harvard University, NYU, UCLA, or the University of Texas system offer online programs make them diploma mills. Furthermore, as Bok notes, continuing education or extension divisions such as Harvard's "are usually operated on a for-profit basis, especially in private universities where some programs manage to earn millions of dollars each year for their parent institutions."[17] They earn some of those millions by enrolling students online. Does this mean that schools such as Harvard are diploma mills? Surely not.

It is worth noting, furthermore, that diploma mills have a long history themselves and are by no means limited to online institutions. At least as far back as 1876, there was a proliferation of fraudulent degree providers seeking to meet the growing demand for credentials fostered by the Morrill Act of 1862.[18] In more recent times, regulators have worked to set standards for institutions that would prevent such instances of fraud. One key regulation that has had a bearing on the growth of online learning is "the 50 percent rule," a federal statute from 1992 that prevented students enrolled at universities providing more than 50 percent of their courses online from qualifying for Title IV loans. In the later 1990s and early 2000s, under the U.S. Department of Education's Distance Education Demonstration Program, a select set of institutions—including the University of

Phoenix and the North Dakota University System, among others—was allowed to exceed the 50 percent rule, provided those schools submitted to additional regulatory oversight. In 2006, Congress struck down the 50 percent rule, allowing students at institutions with as much as 100 percent of their courses delivered online to access Title IV funds. As a result, some schools, such as Liberty University, grew rapidly. Prior to 2006, the institution's online student head count might have stalled at ten thousand—or at roughly half the school's total size. By 2007, however, one year after the elimination of the regulation, Liberty University had approximately seventeen thousand online students. Just three years further on, that figure had grown nearly threefold to forty-five thousand in the spring of 2010.

In spite of these additional regulatory burdens, strong critiques, and sometimes overinflated expectations, online learning has taken root within U.S. higher education over the last fifteen years, to the point where it is now hard to imagine the future of higher education completely absent of online learning.

A TAXONOMY OF ONLINE LEARNING

There are, of course, many kinds of online learning. In its simplest form, online learning might refer to "lecture capture"—videotaping classroom lectures and posting them on a course Web site so that students might review them after class. In other cases, it might refer to self-paced online courses where students progress through Web site materials on their own, without the aid of any instructor or classmates, typically completing each unit by taking a competency exam. In other cases, online learning refers to cohorts of students going through an online course together, but in an asynchronous fashion, meaning that students can log into the course when it suits them and participate in Web discussions by posting messages at all hours of the day, though they generally have to meet weekly deadlines to stay current with the rest of the group. In more rare cases, online learning can refer to Web-based course experiences that are synchronous—where groups of people log into a Webinar at the same time and participate in live

instruction and group interaction, sometimes incorporating elements of two-way video. And there are also cases where Web and classroom components are mixed together, in what is sometimes called "blended" or "hybrid" learning. All of these modes can be applied to a wide variety of educational contexts—from non-credit courses to certificates to undergraduate and graduate degree programs.

Though many typologies have been developed to describe these different forms of online instruction, perhaps the most frequently referenced rubric is that of the Sloan Consortium. In its nomenclature, there are four kinds of course delivery: "traditional," which features no online component; "Web facilitated," in which courses taught in classrooms are augmented by online syllabi and other resources; "blended/hybrid," in which one delivery mode—classroom or online—predominates but where there is a substantial amount of online delivery; and "online," where most of the course is delivered online and there are no face-to-face class meetings.[19]

WHAT THE HIGHER EDUCATION ONLINE LEARNING MARKET LOOKS LIKE TODAY

There is a further important distinction to make among the many varieties of online learning, however. In some cases, students enroll in online courses. In other cases, they enroll in fully online programs. Sloan's figures on the participation rates for online learning encompass both sorts of online learning experiences—courses and programs. Eduventures tracks participation rates within fully online programs only. For many years, the Sloan and Eduventures figures have tracked at a relatively consistent ratio, with roughly equal numbers of students studying in either mode, via individual courses, which predominate slightly, or in fully online degree programs. Because the Sloan numbers include both modes of learning, consistently they are roughly twice the size of the Eduventures numbers.

The estimated Fall 2009 enrollment for fully online programs is over 2.1 million, on the back of a 20 percent year-over-year growth rate.[20] While growth is not as rapid as it was in the late 1990s, when it topped 100 percent annually, it is still significant, and double-digit growth is expected to continue for at least the next several years. By Eduventures's estimates, 20 percent of all students will be in fully online programs by 2014. Today, the top online degree programs are much the same as the top classroom-based degree programs: business, education, information technology, and health care. Disciplines such as nursing and criminal justice were among the fastest growing in 2009—at 45 percent and 41 percent, respectively.[21] In the fall of 2009, there were 835,000 students enrolled in fully online bachelor's programs—representing 8 percent of the overall bachelor's degree market. In the same period, there were 510,000 students enrolled in fully online master's degree programs—representing 24 percent of the overall master's degree market.[22] Thus, while the absolute numbers of bachelor's students studying fully online is larger, the number of students pursuing master's degrees represents a comparatively larger share of the market for that credential.

At the same time, the number of institutions participating in online learning continues to grow, with many colleges and universities moving from dabbling in to scaling up their online efforts. In addition to leading for-profits like the University of Phoenix and niche private, nonprofit institutions like Liberty University, many well-known nonprofit institutions and state systems now have sizable numbers of online students. For example, the estimated online head count for Fall 2009 was thirty-two thousand at University of Maryland University College, the adult learner–focused institution within the Maryland university system; eighteen thousand at UMassOnline; and fifteen thousand at Western Governors University, an online institution developed in collaboration with nineteen western states and launched in 1999 to deliver competency-based bachelor's and master's degrees. Western Governors serves more than fifteen thousand students with programs in business, education, information technology, and health care.

The typical online learner is a white female in her late thirties, married, often with children, employed, and with an annual household income of approximately $65,000. Her primary motivations for study are to prepare for a change of career or to improve skills in order to advance in her current

field.[23] There is of course a great variety of online students, from all ethnic and economic groups, of nearly all ages, and with diverse motivations for studying, but this composite profile reflects the most common characteristics of online learners.[24]

When we talk about online learning, we are talking about many kinds of learning and many kinds of students. Yet, as with any instructional mode—whether correspondence, classroom, or otherwise—the many varieties of online learning have their strengths and weaknesses.

CHALLENGES IN ONLINE LEARNING

One of the reasons online learning is often rightly criticized is that it has struggled with the problem of student retention. On the one hand, there is some anecdotal evidence to suggest that successful online learners possess higher levels of self-discipline and drive than those students who don't succeed online. It does, after all, take a certain amount of focus and determination to study after work, once the children are in bed, isolated from your classmates and instructor. On the other, not everybody overcomes these challenges equally successfully, and not all students possess equal amounts of self-discipline and drive.

Although data are hard to come by, it isn't difficult to see the extent of the problem with online retention. For example, a 2004 survey conducted by the Distance Education and Training Council, a national accreditor of distance learning institutions, reported an average graduation rate of 69 percent among the "highest enrollment" programs among its accredited institutions—suggesting that 31 percent of students are not graduating.[25] There are many caveats that we should note with respect to this figure: it averages results across a number of delivery modes and credential levels and omits lower enrollment programs from its analysis, among other issues. But when almost a third of students are not graduating, that's clearly a problem, whatever the nuances of the statistics.

Of course, those who focus on this weakness of online programs often miss the point that retention rates in traditional classrooms are nearly as

dismal. According to a 2006 study from the National Center for Education Statistics, the average graduation rate for traditional bachelor's programs was 57 percent—after *six* years.[26] Some argue that this attrition rate has held constant for more than a hundred years.[27]

Critics of online learning also frequently point to quality issues with online programs. This is certainly true along a number of dimensions: not all students are equally prepared to study online; not all institutions task their strongest faculty with delivering courses online; and not every institution enters the online learning market for the right reasons. Some institutions may see it as a cash cow and little more. But one can make a number of the same arguments with respect to the traditional classroom, and one hardly needs statistics to substantiate the claim. As any of us who have ever studied in traditional classrooms can undoubtedly attest, not all faculty are equally capable or motivated, not all institutions are equally resourced, and not all curricula are equally responsive to the needs of the marketplace.

To truly understand what online learning makes possible today and what it may make possible in the future, we need to move beyond the sort of false dichotomy that asserts that one delivery modality is tried and tested and that another is reckless and ineffective. We actually know very little about how well the traditional classroom works as a mode of delivery. In fact, there are many academic leaders, Bok among them, who recognize the potential for online learning to reinvigorate faculty thinking about what does and doesn't work, pedagogically speaking, in both the traditional and online classrooms. As Bok puts it, "The collaborative work of such a team [of faculty, designers, and technicians] in creating a finished product [or online course] will itself provoke more discussion about pedagogical methods than teachers in a university normally experience."[28]

Bok's assertion implies that there is generally too little reflection on pedagogy within the university. Many supporters of online learning agree, arguing that our comfort with the traditional classroom may be based on a romantic rather than realistic view of what transpires there. Edward Goldberg and David Seldin, writing in "The Future of Higher Education in an Internet World," put it this way, "[E]xamples of Internet-based online

delivery show great promise in matching and surpassing the quality of traditional face-to-face higher education. If we don't romanticize what really occurs in many of our traditional classrooms, we are faced with some unpleasant realities."[29]

In the spring of 2009, the U.S. Department of Education released a meta-analysis of earlier studies on the quality of online learning in order to assess how students performed in that medium relative to the traditional classroom. Among the report's key findings was the observation that "students who took all or part of their class online performed better, on average, than those taking the same course through traditional face to face instruction."[30] Remarkably, the study received very little press and, less remarkably, hardly ended the debates about the quality of online learning. In fact, just months later, the Association of Public and Land-grant Universities (APLU, formerly known as NASULGC) released a study of its own on faculty perceptions of online learning that illustrates just how unsettled debates about the quality of online courses really are. According to the APLU study, "Over 80 percent of faculty with no online teaching or development experience believe that the learning outcomes for online are 'inferior' or 'somewhat inferior' to those for face-to-face instruction."[31] Given their lack of experience, it's hard to understand what qualifies this group of respondents to judge the efficacy of online learning. Certainly, this must be considered an important bias. A full two-thirds of the faculty surveyed for the study had never taught an online course, so we can only assume they are judging the outcomes of other instructors' students. "Among faculty with online teaching or development experience," the study goes on to explain, "a majority believe that the learning outcomes are as good or better than face-to-face instruction."[32] Here, at least, we have a sample with firsthand experience with online learning, and some basis on which to compare the effects of the two forms on learning.

The study itself is subtitled "The Paradox of Faculty Voices," and thus it is not entirely surprising when, in spite of the doubts some faculty raise about the quality of online outcomes, especially those who have never taught online, a majority of respondents (56 percent) indicate that they

have recommended online courses to their students.[33] Why would faculty who claim to believe that online is inferior to classroom instruction actually recommend online courses to their students? It is paradoxical indeed.

The U.S. Department of Education's meta-analysis also found that "instruction combining online and face-to-face elements had a larger advantage relative to pure face-to-face instruction than did purely online instruction"—suggesting that hybrid programs may ultimately achieve some of the best results, perhaps by bringing together the best elements of both modes of delivery: the dynamic interaction and relationship-building benefits of the traditional classroom with the reflective and participatory written dialogue of the online classroom.[34]

Notwithstanding the decade and a half of experience we now have in developing and delivering online learning, the debate about quality is still in some measure a debate between those who haven't taught online, who think it's inferior, and those who have taught online, who think it isn't. And rarely does the debate about quality in online programs encompass a thoughtful discussion about quality in the traditional classroom. Perhaps the growing interest in hybrid delivery can gradually help to bring about something closer to a consensus view on the value of online learning among these—for the moment—still disparate groups of faculty.

The Cost of Online Learning

Another area of continued concern for schools looking to go online, or seeking to scale their online operations, is cost. Some of the earliest and strongest supporters of online learning proclaimed that it would be much cheaper than traditional instruction. But those early promoters of online learning might have supposed that it would replace traditional instruction altogether. Back in the middle and late 1990s, as course management systems became more common on college campuses, many individuals—both on campus and within the business world—believed that online learning would quickly and radically reshape higher education. At the time, one would often hear the claim, for example, that for every Chinese student studying within the

United States, there were four more back in China who wanted to but could not afford the expense of moving overseas. The implication was that online learning would permit U.S. colleges to vastly expand their reach to students in distant markets. Of course, that didn't happen as quickly as some people might have imagined. Furthermore, online learning still has not replaced the traditional classroom, nor has a low-cost online delivery model supplanted a relatively higher-cost classroom delivery model. What has happened, of course, is that all the varieties of course delivery continue to sit side by side, and thus many colleges and universities find themselves adding costs rather than replacing them. Impatience for realizing these promised cost efficiencies is understandable, especially since the conversation about costs has been underway for some time and still continues to raise doubts, for some at least, about the potential for online learning.

A decade ago, the American Council on Education published a volume of essays devoted to this topic—*Dollars, Distance, and Online Education.* One of the volume's authors, Judith Boettcher, works out some not unreasonable estimates for designing Web courses ($40,500 per course) and delivering them over the course of a semester ($184,000 per course).[35] Allowing for some inflation, those numbers in today's dollars would be significant and may well be large enough to keep certain institutions waiting on the sidelines, especially if the investments amount to additional costs on institutional budgets rather than replacement costs.

There is some evidence, however, to suggest that real cost savings are possible via online learning. Twigg's NCAT has provided $200,000 grants to thirty institutions to redesign courses with the aid of technology. The goal is to change what Twigg characterizes as "an outmoded, labor intensive delivery model coupled with an outmoded set of assumptions about the relationship between cost and quality."[36] Among the thirty schools participating in these projects, an average cost savings of 37 percent was realized, Twigg claims.[37] Furthermore, twenty-five of the thirty institutions "showed significant increases in student learning with the remaining five showing learning equivalent to traditional formats."[38] Twigg suggests that colleges and universities can realize the biggest savings and best results by

redesigning those courses that touch the most students: "In order to have a significant impact on large numbers of students, an institution should concentrate on redesigning the 25 courses in which most students are enrolled instead of putting a lot of energy into improving quality or cutting costs in disparate small-enrollment courses."[39]

Among the key drivers of cost savings, Twigg points to course management systems, automated assessments, online tutorials, shared resources, staffing substitutions, reduced space requirements, and the consolidation of courses and sections.[40] These cost-reduction strategies can be applied to fully online courses as well as hybrid courses and Web-facilitated courses. As with most things managerial, however, the degree of success depends in many respects on the quality of execution. Of course, not all institutions are equally gifted in this regard.

The Role of Faculty in the Online Classroom

As challenging as these questions of quality and cost may be, they are not necessarily the thorniest issues related to online learning. There are a host of issues related to faculty labor, promotion, tenure, compensation, and ultimately motivation that must continue to be examined. Certainly one of the sources of faculty resistance to online learning is the perceived threat to the autonomy of professors' intellectual work. At the root of this anxiety, however, may be the even more worrying prospect of being cut out of the academic equation altogether.

Noble has been a consistent and outspoken defender of faculty interests and, for that reason, has been one of the most widely cited critics of online learning. Writing in 1998, Noble argues that "universities have acknowledged that faculty, as the authors of courses, have owned their course materials and hence course development . . . But universities are now undertaking to usurp such traditional faculty rights in order to capitalize on the online instruction marketplace . . ."[41] In a subsequent installment of his essay, published in 1999, Noble even considers the possibility that one day actors will replace faculty in online learning.[42]

The thrust of Noble's argument is that faculty are at risk of being made redundant in the online revolution. Bok, writing four years later, observes that Noble's prediction "seems plausible only in universities where the administration is indifferent to whether its professors stay or leave."[43] Still, as the APLU study suggests, faculty in great numbers are still unconvinced of the benefits of online learning, and if many of them have been reluctant to get involved in online learning themselves, the fault is not entirely their own.

Bringing courses online may provide opportunities to think more deeply about pedagogy than usual, but precisely for that reason the work takes time, and many faculty may quite reasonably feel that this work takes them off-task and is poorly aligned with the traditional faculty reward systems. While schools have experimented with numerous forms of incentives, including incremental pay increases, revenue sharing with academic departments, release time, and so on, there are no clear standards for motivating and rewarding faculty to make the necessary investment of time in online learning. And as with most things faculty related, if the investment of time does not contribute to obtaining tenure, then it may not be an investment many tenure-track faculty are likely to make.

HOW INNOVATIVE IS ONLINE HIGHER EDUCATION?

Is online learning a disruptive innovation or just a disruption? By taking another look at Christensen's theory of disruptive innovation, we can try to arrive at an answer. Again, a disruptive innovation involves bringing a simpler and less expensive product to market to serve a new set of customers. Eventually, the disruptive innovation improves in quality and begins attracting customers away from more traditional products until it becomes the leading product category in the market.

Is online learning simpler to use? Yes, in the sense that it is more limited than traditional classroom learning. Few would argue that the traditional classroom doesn't permit great spontaneity, direct personal interaction, and the opportunity to incorporate many modes of instruction at once.

But it also requires students to arrive at campus on time to meet with their classmates and instructors. Online learning is simpler and more limited in the same sense as the personal computer was, relative to the mainframe.

Is online learning less expensive? For some institutions and for many students, it may well be. The ability to study anytime, from anywhere, to continue to work, and to study from home, has a number of economic advantages for students, from avoidance of lost income to reduced travel expenses. Of course, students still have lots of options with respect to tuition pricing at competing institutions, and the mode of education delivery is not the most important determinant of price. Some online programs have premium pricing, while other programs are comparatively affordable. The variation is no different from what we see across a range of traditional campus settings—from community colleges to elite, private universities. It seems reasonable enough to assert that online learning can help students reduce the cost of study. Whether online instruction is less expensive—or more profitable—for many institutions than the traditional classroom is another matter. But then Christensen's theory anticipates that disruptive innovations will produce fewer profits than more mature products, until, that is, the products improve and attract greater numbers of customers. What we have seen already, however, is that for-profit universities, which were among the early leaders in online learning, do not make the same investments in amenities and physical plants as traditional universities, and thus the total cost of operations relative to income can be lower. For virtual universities, like the entirely online Capella University, this is true in the extreme. There is very little physical plant to manage at an entirely online institution.

Does online learning create new customers? This is the most difficult question to answer. A common argument against online learning is that it will draw students away from traditional instruction, rather than attract a new group of students. The closest we may get to answering this question with available data is via proxy. We do know that for-profit universities have growing enrollments and a disproportionate share of online students. If we can accurately assert that for-profit universities have attracted a new

group of students, then we might reasonably infer that they have done so, in part at least, with the aid of online learning. That in turn might suggest that online learning has attracted a new set of customers.

Between 1997 and 2007, the United States experienced a net gain of more than 660,000 undergraduate students over the age of twenty-five.[44] For-profit colleges and universities saw an increase of more than four hundred thousand in these students over the same period—or a 77 percent share of the total net gain. According to my Eduventures colleague Richard Garrett, a senior researcher on adult learning and online higher education, the combination of a slight decline over the past decade in the population of twenty-five- to forty-four-year-olds in the United States, along with a 16 percent enrollment growth rate among students aged twenty-five and older in undergraduate programs over the same period, points to new market expansion. "The fact that 77 percent of undergraduate growth among older students took place at for-profit schools, where growth has been primarily online," Garrett argues, "highlights nontraditional institutions and delivery modes as key drivers of expansion."[45] If Garrett is correct, then in online learning we may, in part, be witnessing the creation of a new set of customers. It remains an open question, of course, just how big online learning can become, and whether it will grow sizable enough not only to disrupt but also to supplant traditional forms of learning as the new standard. I noted earlier that by Eduventures's forecasts, we can expect 20 percent of students to be enrolled in fully online programs by 2014. Keeping in mind the consistent ratio between Eduventures's figures for fully online students, and Sloan's figures for fully online and individual course enrollments, it's conceivable that in a few short years as many as four in ten students could be enrolled in some form of online learning.

For their part, Christensen, Horn, and Johnson do not venture a guess as to the future online market share within higher education. They do, however, conjecture that "by 2019, about 50 percent of high school courses will be delivered online"—up from a percentage in the extremely low single digits today.[46] If Christensen and his colleagues are right, then we might well assume that higher education online enrollments over the next ten

years will be truly explosive, since higher education is the more mature online learning market.

For the moment, though, it is fair to say that the case for online learning being a truly disruptive innovation in higher education is still somewhat equivocal. This form of learning may be simpler to use and less expensive, at least for some parties. But there is still potential for online learning to push farther in both of these directions. It may also be creating a new set of customers for colleges and universities, but the size of this new customer set is still far smaller than the traditional customer set. It is possible that in the space of a few short years, online learning may come to dominate the way higher education is delivered, but it is difficult for a bystander watching the online learning debate to come away convinced just yet that this new mode of education will inevitably dominate the future of higher education.

This uncertainty about the future of online learning, which permits doubters and believers to talk right past one another, only adds fuel to the occasionally overheated rhetoric about the future of higher education and the place of online learning in it. But while the debates continue, the market is evolving in ways that may point to still more disruptive changes in the way higher education is delivered in the years ahead, both here at home and abroad.

THE UNMAKING OF THE UNIVERSITY?

Let's consider for a moment some potentially game-changing activities currently taking place at the margins of the higher education landscape that might one day affect even more radical change with respect to how students learn and acquire education credentials. In a very simple sense, a college or university is, at its core, three things in combination: faculty, curriculum, and credentials. Students are the consumers of the services resulting from the combination of these three core elements of the institution. At the most basic level, students attend a college or university in order to study curricula with experienced faculty en route to earning credentials. Together, these three elements comprise a value chain, or set of interlocking services

and products that are transacted in such a ways as to provide more value in combination than they might independently. Recent and potentially disruptive innovations within higher education, however, suggest that new forms of value might be emerging that could undo the traditional higher education value chain.

Take, for example, MIT's OpenCourseWare initiative (OCW), nearly a decade old, which has brought materials from more than nineteen hundred MIT courses to the Web in the form of syllabi, readings, lecture notes, video, tests, and more. OCW allows individuals from around the world to view these online materials free of charge. Current or prospective students can use these materials as reference tools for exploring new professional opportunities, preparing for courses of study, reviewing basic concepts from a variety of disciplines, and more. Note also the growing interest in competency-based credentials, such as those Western Governors University offers. Western Governors measures the success of its students not in credit hours but by demonstrated mastery of subject matter through competency exams or papers. Finally, look at StraighterLine, a recently launched subscription service that offers self-paced, online general education courses for $99 a month, along with some modest per-course fees. Through its relationship with the American Council on Education's transcript services, StraighterLine offers a still very small number of customers access to college credits at a fraction of the cost of traditional colleges and universities. Interestingly, StraighterLine emerged as a stand-alone enterprise after being incubated within the online higher education tutoring company SMARTHINKING, suggesting that the establishment of a curriculum company was a natural outgrowth of what is essentially a kind of teaching organization.

Now imagine a scenario in which an individual (the student) somewhere in the world hires an online tutor (the faculty) somewhere else in the world to guide her through freely available online course materials (the curriculum), which might be available anywhere in the world, before taking an online competency-based exam (the credential) that has recognized market value in one or another profession. Would there even be a need for traditional universities in such a scenario?

The answer, in both the near term and the long term, is assuredly yes. But the scale of the need for traditional universities might well diminish over time as growing numbers of students seek more control over the ways they access education and demonstrate their competency in particular disciplines. While such a scenario is, of course, highly speculative, it is not inconceivable.

In fact, in some respects, it is already beginning to happen on a very modest scale. Consider the University of the People, based in Pasadena, California, and founded in 2009 by Shai Reshef, formerly chairman of the Israeli for-profit education company Kidum. University of the People proclaims itself to be "the world's first tuition free online academic institution dedicated to the global advancement and democratization of higher education."[47] According to its Web site, the institution is setting out to provide "universal access to quality, online post-secondary education to qualified students."[48] It takes its name quite literally; it is by design very much of the people, by the people, and for the people insofar as students learn in a peer-to-peer manner or, in other words, largely from one another. The institution draws on open courseware projects from around the world, including MIT's, for its syllabi and course materials, and currently offers unaccredited, nondegree programs in business administration and computer science to 380 students.[49] That is a modest number, to be sure, but University of the People's admissions criteria have recently been characterized as "rigorous" by one reputable higher education news publication.[50] The institution employs five faculty, while another eight hundred volunteers facilitate the courses under the oversight of these few faculty. University of the People is not yet accredited, but it is currently seeking accreditation in the United States, and looking at becoming licensed in the state of California to award degrees.[51]

While actors have not been installed in place of faculty at University of the People, the institution looks not altogether unlike Noble's dark vision for the future of higher education. But where Noble sees faculty losing control over the means of their livelihood, others see increased access to learning and pedagogical improvements that produce better outcomes for

students. For example, Christensen and his colleagues point out that one of the pedagogical benefits of the trend toward a more student-centered approach to learning is that "assessments and individualized assistance can be interactively and interdependently woven into the content-delivery stage, rather than tacked on as a test at the end of the process."[52] Perhaps decentering the faculty member as the key means of educating students is not an entirely bad thing.

Still, we should not overlook the power of teachers, and many faculty are unlikely to accept this sort of marginalization without a fight. Christensen anticipates this problem and acknowledges that—particularly in the K–12 environment—teacher unions wield considerable power. But he and his colleagues argue that "when disruptive innovators begin forming user networks through which professionals and amateurs—students, parents, teachers—circumvent the existing value chain and instead market their products directly to each other . . . the balance of power in education will shift."[53] This might well be an apt description of University of the People, which works around the traditional university business model and puts professionals and amateurs in conversation with one another to meet the needs of an emerging set of new customers.

Clearly, higher education innovations such as online learning promise or threaten, depending upon your point of view, to create new winners and losers in the marketplace. And while the unmaking of the traditional university may pose problems for institutions that resist innovation, it will also create opportunities for those institutions that embrace these new developments. It remains to be seen who precisely the winners and losers will be, but some observers believe that traditional universities may fall into the latter camp. In their book *New Players, Different Game*, William Tierney and Guilbert Hentschke (both authors elsewhere in this volume) ask, "Who is better situated to take advantage of a disruptive technology—the traditional organization with a defined system for how to conduct activities, with a significant portion of the organization believing how it operates is satisfactory, or the investor-backed start-up company that has no set

procedures and whose leadership seeks to expand markets in as aggressive manner as possible?"[54] The question, in this case, is largely rhetorical. While the authors admit that customers might not inevitably find the product of the investor-backed start-up palatable, they note that "so far the opposite seems to have been the case."[55] For this reason, they anticipate a scenario in which for-profit institutions are better equipped to maintain and increase their leadership position in the online learning market.

By the same token, Bok argues that traditional universities will do themselves no favors by sitting out the game altogether. "If universities do not enter the field, refusing to cater to consumer and vocational tastes," he writes, "other providers, such as the University of Phoenix, will do the job for them . . . On the other hand, if universities compete, any profits they earn can presumably go to finance precisely those precious forms of teaching and research that cannot be supported by the marketplace alone."[56]

Of course, by conceiving of online learning as being responsive to "vocational tastes," Bok may be missing a larger and deeply academic opportunity. Online learning futurist William Draves makes the case, in his book *Nine Shift*, that far from narrowing the curriculum to a slim band of vocationally oriented programs, online learning might actually resuscitate interest in once-obscure fields of study. A typical university today might teach as many as two thousand subjects (think of MIT's nineteen hundred OCW courses), but there is an opportunity through online learning to vastly increase access to learning materials by syndicating courses across institutions. "The result will be that the number of subjects offered will dramatically increase to 10,000 or so subjects," Draves writes. "Courses that have too little interest on a single campus, or no expert faculty, will be able to be offered. The religion of the Druids, seventeenth century French poetry, the life of Adlai Stevenson, the care of mango trees, and thousands of other legitimate academic subjects will become available."[57] In Draves's view, online learning will succeed in dominating the market not because of the convenience it offers, but simply because it has the potential to offer a better way of learning, one that is cognitively richer and more intellectually expansive than the

typical college or university campus experience of today. In the long run, it could be that the unmaking of the contemporary university will result in the establishment of something even better.

LOOKING AHEAD

Innovation is troubling. It promises new benefits, but threatens our security and challenges our traditions. As such, it can provoke pessimism and optimism in equal measure. Disruptive innovations change the way we get things done and along the way can force us to undergo a process of defamiliarization, where the well understood becomes strange and uncertain. That's why many organizations fail in the face of innovation. They can't adapt quickly enough to the new values of the changing market. Their worldview becomes calcified, and they miss the signs of change. But defamiliarization has a positive aspect as well. In the world of online learning, the challenges of bringing the classroom online force us to rethink matters of pedagogy we may have begun to take for granted. Online learning can teach us a lot about higher education, such as the assumptions we in the higher education community make about the relation between cost and quality, as Twigg points out, or the assumptions we make about the relation between the profit motive and the work of educating, as Bok points out, or the assumptions we make about the values of faculty and the values of students, as Rob Jenkins points out.

Who is Rob Jenkins? He's an associate professor of English at Georgia Perimeter College. In a recent issue of the *Chronicle of Higher Education*, Jenkins authored a commentary called "A Technophobe's Guide to Managing Online Courses." Jenkins admits to disliking online learning, even though his administrative responsibilities have tasked him with managing his institution's online programs. Like many faculty who are skeptical of online learning, Jenkins has never taught online. "I've never gone bungee jumping, either," he observes wryly, "but I'm pretty sure I wouldn't like it."[58] At the start of his work managing online programs, Jenkins did what he could to slow the growth of these courses. "I became a chair in the mid

1990s, at the onset of what we might call the online revolution," he writes. "Back then I argued not against distance learning—that would have been career suicide—but at least for a more measured approach, as my campus (like every other) raced to offer more and more online courses, mostly for financial, not pedagogical, reasons." Jenkins felt pushed to operate in a world he did not personally want to live in—one in which he was "expected not only to function," as he puts it, "but lead. Since then," he adds, "I've learned a great deal, not least of which is that I might have been wrong about online courses." Why? Because colleagues he respects have embraced online learning, and because, as he himself observes, "whatever I might think of online courses, they are loved by lots of students."

There's an old saying that elementary teachers teach out of love for their students, high school teachers teach out of love for their subjects, and college and university teachers teach out of love for themselves. Certainly, online learning has exacerbated the long-standing tensions between faculty-centric and student-centric views of the purpose of the institution. But it is a tension that will be resolved when more faculty like Jenkins realize that the choice is constructed less as an either/or proposition than as a both/and proposition. Until then, higher education institutions will continue to struggle with these fundamental tensions: whether they must contain all of the basic components of the educational value chain or need only specialize in one or a few of them; whether they should turn their backs on commercialization or take a more market-driven (some would say market responsive) approach to their customers; and whether they will limit growth or pursue a mission of access.

It pays to be skeptical of dichotomies such as these. Profound advances can be made by combining the best of the old and the new ways. "So far technology has hardly changed formal education at all," wrote Bill Gates recently. "But a lot of people, including me, think this is the next place where the Internet will surprise people in how it can improve things—especially in combination with face-to-face learning."[59]

Useful innovations, disruptive innovations, teach us not only about our habits and routines, but about our capacities to invent and improve, as well

as our capacities to take advantage of the opportunities presented by the new, while being guided by the values of the past and the present. I have taught in traditional classrooms, computer labs, and online classrooms. I have earned academic credentials the old-fashioned way, over semesters sitting in classrooms, and the newfangled way, over weeks studying online. Both modes of teaching and learning have much to offer, and each mode has its limitations and challenges. In the years ahead, it may well be that the most effective form of higher education for a great many students will be the one that combines the best elements of the traditional classroom with the innovations of online learning. Like everyone else, I'm interested in seeing what the future of higher education looks like, and I'm curious to see what we learn along the way.

8

The Mayo Clinic of Higher Ed

Kevin Carey

ON A COLD FRIDAY AFTERNOON in February, Chelsea Griffin walked through the fading winter light of downtown Rochester, Minnesota, past old-style restaurants and stores filled with balloons and flowers, into the marble-clad halls of the Mayo Clinic.

An elevator and staircase led her to a windowless laboratory, with a stainless steel sink on her left and cabinets filled with medical equipment on her right. In the center of the room, lying prone on a table, was the corpse of a middle-aged man. His chest was split open and his ribs were splayed to either side. Griffin put on a white laboratory coat and pulled a pair of blue latex gloves over her hands. As a group of students watched, she reached into the cavity and pulled out the heart, feeling the weight of it in her wrist and arm. Her index finger traced a path to a spot just above the right ventricle. She knew this part of the internal human anatomy better than any other. Twice, she had undergone surgery to repair a hole there that threatened her life.

The thought of it brought her up short, and her eyes welled with tears. For a moment, her perspective shifted up and out. She saw herself, standing in a lab coat with a stranger's heart in her hands. This, she thought, is where I'm meant to be.

And yet, if it were up to the norms and conventions of American higher education, Griffin wouldn't have been there. She is not a doctor or a nurse, or an intern or a researcher or even an upperclassman studying pre-med.