



I T H A K A

# ACADEMIA ONLINE: MUSINGS (SOME UNCONVENTIONAL)<sup>1</sup>

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It is humbling to be part of a lecture series that dates from the time of President Cleveland and has included such luminaries as Albert Einstein and Gunnar Myrdal.

The topic I have chosen is “Academia Online: Musings (Some Unconventional).” So much has been said on the general subject of online learning that I run the risk of going over ground that is already familiar. To minimize that risk, I will begin by providing only the barest context. I will then discuss, in a “musing” mode with no claim of saying anything definitive, four ramifications of online learning that I regard as highly consequential: (1) “unbundling” of both faculty and institutional functions; (2) implications for the shape of the entire higher education sector; (3) impending changes in doctoral education; and (4) “equity” concerns that differ from those made famous by Myrdal, but that are no less challenging. (There is a fifth topic that is very important but that I pass over because of lack of time: namely, the implications of online technologies for “shared governance” and faculty roles in decision-making.) My focus will be on all of 4-year higher education in the U.S., not on Princeton. Princeton is—and will remain—an “outlier.”

## Context

To attempt to estimate the current extent of online learning, or to enumerate its near-limitless forms, would be foolhardy. I spare all of us that exercise.<sup>2</sup> Suffice it to say that not a day passes without some new initiative or some new commentary on a phenomenon that is worldwide. Driving the proliferation of online offerings are three fundamental forces, which are likely to prove lasting.

- First, dramatic improvements in internet speed and availability, reductions in storage costs, and other technological advances have combined with changing mindsets to make possible a staggering variety of online formats that have captured the imagination of many teachers and scholars, especially those interested in reaching a wide audience.
- Second, this generation’s students (the next generation’s faculty members) embrace all things digital and expect to communicate in this way, whatever institution they attend.
- Third, there is a growing consensus in public discourse that current trends in both the cost of higher education and such outcomes as completion rates and time-to-degree are neither acceptable nor sustainable. There is no denying public impatience with tuition increases in higher education that have been driven in part by reductions in support (especially in state appropriations).<sup>3</sup> This impatience, coupled with a sense that “business as usual” will not suffice, has spurred a search for more cost-effective approaches than those we have known traditionally. Illustrative is President Obama’s continuing emphasis on the seriousness of this issue, his disappointment that higher education has not, on its own, done more to address the problem, and his renewed calls for action, complete with proposals for ways of addressing the problem.<sup>4</sup> There is, I fear, too much complacency in much of higher education—too much of a sense that if we just “hang in there,” all will be well. Higher education needs to do its part—and then some—in adjusting to new realities.

Amidst all the argument over whether online learning is, in one form or another, a “good thing”—a solution to deep-seated problems or, in fact, a new problem of its own—there is general agreement that “the genie is out of the bottle.” Online learning is, without question, here to stay. We can and should discuss—and with some urgency—how it can be improved, which audiences are best served by one approach or another, and what research teaches us about both learning outcomes and costs. There is, truth be told, far too little hard evidence available about what works and what cost savings, if any, can be anticipated. More rigorous research is desperately needed. Examples of flawed research abound.<sup>5</sup> In thinking about these issues, it is essential to compare “actuals” with “actuals” and to avoid the mistake of comparing an online offering with an idealized version of face-to-face teaching in some “golden age”—such as the opportunity Henry Cabot Lodge had to study medieval history with Henry Adams at Harvard.<sup>6</sup> We also know far too little about what actually works in face-to-face environments. New online initiatives should prod us to study rigorously the effectiveness of traditional modes of teaching as well as alternative approaches.<sup>7</sup>

The lack of much solid research notwithstanding, the world moves on. We can be confident that online learning, which is in its infancy, will improve. While there is still opportunity to affect outcomes, and to avoid unintended consequences that are undesirable, we should be giving serious thought to the broader implications of online technologies.

## Unbundling

Let us begin by considering the possible “unbundling” of both faculty and institutional roles in teaching. Over time, some faculty roles could change dramatically in an online world. When I was in charge of Economics 101 at Princeton in the halcyon days of yore, I was responsible for setting the syllabus of the course, crafting and giving lectures, working with others to plan the weekly sections that accompanied the lectures, leading one or two of the sections myself, responding to questions, counseling students (I recall asking one student who had great difficulty plotting points on a two-dimensional graph: “is this really the right subject for you?”), designing and supervising the grading of the tests used to evaluate student performance, and writing recommendations. Although I certainly had help, I thought of Economics 101 as “my course.” Although in some ways independent, these various components of the course were all connected and bounded by geography—all of the participants in this educational experience were together in one place, Princeton.

Now, as a result of the digitization of information and its availability nearly everywhere on ubiquitous networks, new regimes beckon in at least some parts of higher education. One of my colleagues at ITHAKA (Richard Spies) has suggested that we imagine the debate at a less-privileged place than Princeton over who “owns” a course when

- the delivery platform comes from a MOOC producer (for-profit or not);

- much of the content comes from professors/lecturers at other universities (obtained through the MOOC producer, from the institutions employing those faculty members giving the lectures, from textbook providers, or even directly from the off-campus lecturer);
- automated online quizzes and advising tools come from yet another organization;
- teaching assistance and mentoring are provided by a shifting array of TAs, provided by the on-campus institution;
- and many kinds of support decisions are made by a central administration—the amount and kind of IT and other technical and administrative support provided, the number and qualifications of the TAs assigned to the course, legal support for agreements with third-party partners and perhaps even with on-campus faculty.

Moreover, these questions become even more complicated when we contemplate situations in which one of the original participants in creating this multi-dimensional course dies, retires, or moves to another institution. Or, suppose that one or another of the putative “owners” wishes to make the same course, or much of it, available to other campuses or to students with no campus affiliation—with or without compensation and with or without “credit” being offered. In prospect is a much more complicated world in which new thought will need to be given to who has (or should have) the authority to make decisions of various kinds concerning instructional methods.

Unbundling can of course occur not only at the level of the individual course but also across an institution’s entire set of educational offerings—as more and more people in higher education recognize, often with fear and trembling and through clenched teeth. Unbundling at the institutional level could be highly consequential. The internet is the classic mechanism for unbundling, and we are all familiar with how lethal technology-driven unbundling has been in many sectors (note the loss of classified ads by newspapers and the success of Amazon in bypassing book stores). One trustee of a liberal arts college [Dan Currell] argues that:

We haven’t seen unbundled education at the college level yet...[in part] because colleges have kept education and evaluation tightly bundled together. The professor teaches *and* evaluates progress; the college offers courses *and* confers a degree....It won’t necessarily stay this way. There is no reason why education and evaluation will necessarily stay bundled together, and one can already see movement in the direction of the two splitting apart.<sup>8</sup>

Currell is right; things need not stay as they are. It is easy to imagine, conceptually, colleges and universities unbundling a variety of functions (some kinds of advising, mentoring, evaluating, and even—heaven forbid—providing entertainment in the form of big-time football and basketball!). Of course, colleges and universities have for many years outsourced support functions such as food services and facilities management. Increasingly, in recent years, activities much closer to the academic heart of the institution have also been outsourced, such as access to scholarly journals—JSTOR. More fundamentally, we are already familiar with some degree of unbundling of course offerings,

especially at the introductory level, via standard transfer mechanisms. More complex forms of transfer credit or credit for competency-based learning are clearly on the horizon.<sup>9</sup>

## The Shape of Things to Come: Seen “Through a Glass Darkly”

Now, let us contemplate the shape of things to come. The kinds of unbundling enabled by advances in technology and driven by worries about educational costs will have ramifications for the entire higher education sector that no one can foresee—hence, I think that those of us brave enough, or foolish enough, to speculate about such things need to be clear that we are viewing the future “through a glass darkly.”

At one extreme, there is the proposition that the coming-of-age of online learning will have truly radical effects and will mean the demise—in whole or in large part—of face-to-face teaching and the residential model. As Peter Drucker asked back in 1989, “Will tomorrow’s university be a ‘knowledge centre’ which transmits information rather than a place that students actually attend?”<sup>10</sup>

It is true that *some* forms of online learning can substitute for *some* forms of face-to-face instruction in *some* settings. This has happened already in parts of higher education, and especially for working adults in vocational fields.<sup>11</sup> Within the arts and sciences, colleagues and I demonstrated the cost-effectiveness of a well-designed Carnegie Mellon statistics course, taught in a hybrid mode, at six mainstream public universities—we retained a limited amount of face-to-face interaction, and we used a random assignment methodology to avoid selection bias.<sup>12</sup> But the hybrid approach that we studied is a far cry from the model envisioned by the far more sweeping assertions about the impending demise of face-to-face teaching in its entirety. Such a development is not at all likely. Indeed, I believe it to be unthinkable. Our study used one sophisticated method of teaching a beginning course in a field, statistics, extremely well-suited to adaptive learning (there is, after all, one answer to the question of what is a *t*-test). It is far from obvious that the same pedagogy will work anything like as well in teaching subjects such as literature and international affairs. Face-to-face learning in many subjects and many settings will continue to persist for two very good reasons.

First, such teaching makes a great deal of educational sense, a priori, when we are trying to teach not only well-known concepts (the definition of a *t*-test), but also nuanced notions such as: how to frame questions in value-laden subjects, how to distinguish evidence from opinion, how to take account of different points of view, how to formulate one’s own position on complex questions, how to express one’s self verbally and in writing, how to engage with others as a member of an intellectual community, and even how to approach an understanding of “life lessons.” Most fundamentally, we want to engender in students the excitement associated with encountering a new idea—an experience I first had, in full measure, as a graduate student at Princeton.<sup>13</sup>

A second reason for betting on the survival of good face-to-face teaching is that there will continue to be a demand for it. If application patterns are any guide (and, as a staunch believer in revealed preference, I think they are), a great many

students and families will continue to pay dearly for the privilege of being part of a learning community that is about more than just acquisition of known concepts. Of course, the value proposition here includes much more than just the virtues of face-to-face teaching—it includes round-the-clock associations in settings conducive to give and take with a wonderfully diverse set of classmates. Such experiences can do wonders in the teaching of social skills as well as cognitive content, can provide invaluable opportunities to acquire leadership skills, and can lead to lifelong friendships. It would be a brave soul—and an uninformed soul, I would say—who would bet against this model perpetuating itself, even as we recognize that it will serve a small and highly privileged population which, in its demographics, is by no means a cross section of all students.

Much more interesting than extreme models is the vast middle ground—where one can expect to find some online learning in a dizzying array of formats, in an innumerable variety of settings, and often used in conjunction with traditional forms of teaching.<sup>14</sup> Our system of higher education, if “system” is even the right word, is famously heterogeneous, and we are therefore blessed with literally hundreds (thousands?) of different educational models. New experiments are launched every day, and we are inundated with a surfeit of claims and counter-claims, most of them based on assertion rather than on evidence. It is my devout hope that we will indeed see “a hundred flowers bloom,” and that we will avoid the stultifying effects of imitation and wrong-headed searches for a single right formula—that we will avoid forced standardization.

It would be splendid if the best of the burgeoning array of MOOCs could be harnessed to address at least some of the all-too-real challenges facing the large number of public colleges and universities that educate the vast majority of undergraduates in this country seeking BA degrees, as well as the army of community college students. But whether this is possible is an open question. We simply do not know. MOOCs were developed, after all, to reach vast numbers of individual students without reference to their institutional affiliation, if any, and without reference to existing educational infrastructures. They have demonstrated their capacity to engage large numbers of individuals all over the world (high drop-out rates notwithstanding), many of whom otherwise would have had no access to any form of higher education, and this is surely a splendid accomplishment. But engaging an individual student in a corner of India is very different from fitting within an institutional context and delivering good educational outcomes in a structured setting and in a cost-effective way. Modifying MOOCs to serve this large and highly consequential population entails very substantial technological *and* organizational challenges as we contemplate departures from the initial “one-size-fits-all” MOOC model. Right now, the ITHAKA organization is carrying out a study in collaboration with the University System of Maryland to see what can be accomplished by using content and platforms created elsewhere to teach courses in a real-world institutional setting—recognizing that the hybrid courses we are testing are not really MOOCs, in that they are not “massive,” not “open”, and only partially “online.”<sup>15</sup> As a former Princeton trustee, John Doar, said when leading the Nixon impeachment inquiry, “we will know more later.” The jury is still out.

There are many other experiments underway. For example, the University of Texas at Austin has announced that, following almost a decade of research, two of its psychology professors will be offering what it calls “the world’s first synchronous massive online course.” The course will teach up to 10,000 students who must make themselves available at 6pm on Tuesdays and Thursdays and who will be charged a \$550 registration fee. The class will be split into a number of smaller “pods” which will be monitored by former students who essentially work as online TAs. Students who finish the course will earn three transferrable credit hours. It will be exceedingly interesting to see the results of this undertaking—and to examine closely not only the educational outcomes, but also the all-in costs, which are hardly mentioned in a story about the UT initiative.<sup>16</sup>

Let me re-emphasize the importance of the cost blade of the online scissors. As I have said on other occasions, I am “more than bemused—actually I am dismayed”—by the lack of attention being paid, especially by faculty members, to the pressing need to control educational costs.<sup>17</sup> Unappealing as it may be to focus on costs (which, of course, can mean unwelcome changes in faculty staffing and in faculty roles), and satisfying as it may be to focus instead on the glories of teaching, in both old and new modes, it borders on the irresponsible to ignore the pressures to control costs—and the concomitant need to make the most intelligent, educationally-sensitive trade-offs that can be identified. To most observers, it is crystal clear that limits on available state funding have led to reduced appropriations to higher education which, in turn, have forced up tuition and often prevented fully offsetting increases in financial aid for needy students. It is simply wrong to suggest that cost savings made possible by technology have been the driving force in reducing state support; indeed, we have seen that efforts to control costs can lead to more sympathetic consideration of the need to sustain state funding.<sup>18</sup> Nor are reductions in state funding the only source of pressures to save money. Evidence available this fall (2013) reminds us that a number of institutions are also suffering from reduced enrollments.<sup>19</sup> Tuition-dependent private institutions seem especially vulnerable.

In seeking to contribute to the near-void of evidence as to what savings from the judicious use of online technologies might be achieved, ITHAKA, with support from the Spencer Foundation and the cooperation, once again, of the University System of Maryland, is embarking on a simulation of what educational costs might look like under a new regime, in which constraints on section sizes and the need to rely on existing plant and scheduling conventions are relaxed. The intention is to study the costs of a carefully-blended combination of online teaching and personalized instruction. It is entirely possible that scheduling innovations could themselves lead to improved completion rates and reduced time-to-degree, without anything like commensurate increases in costs. Such new approaches could also enable colleges and universities to educate larger numbers of both traditional and nontraditional students without anything like proportionate increases in faculty and other resources, a goal recognized by policymakers at both the federal and state levels to be highly important in meeting the needs of our increasingly knowledge-based economy. Online courses driven by sophisticated technology should also enable entirely new ways of studying how students learn, how to diagnose and fix common problems, and

how to form new kinds of user communities. Technology should also enable us to find more cost-effective ways of discharging expensive support functions, such as advising.

To continue to muse about longer-term possibilities, I can envision a world in which more institutions adopt what I call a “portfolio” approach to curricular development. By this I mean that certain kinds of classes—and especially introductory courses in subjects in which, at least at this level, there is wide-spread agreement on “the right answer” to basic questions (beginning math is one example)—might be taught using online approaches, plus some admixture of advising, tutoring, and mentoring; resources saved in this way might be re-deployed, at least in part, to provide the personalized instruction in seminars and in directed study that can be so rewarding. Ideally, students would be assigned, or encouraged to choose, a mix of courses that would give them a well-calibrated exposure to various modes of teaching. Only in rare cases will instruction be exclusively online.

Over time, many institutions may want to import some online instruction, particularly in introductory courses in basic subjects such as beginning math and in advanced courses in a variety of fields that small colleges, for example, could not staff properly on their own. As I have argued in *Higher Education in the Digital Age*, there is much to be said for an intelligent division of labor, with those especially well-positioned to do so constructing sophisticated platforms with feedback loops, and with user campuses demonstrating at least modest capacity to customize offerings on the platform(s). We do not need a thousand versions of a basic/customizable platform; nor should we expect every campus to start from scratch in preparing its own online materials. Some wheels do not need to be re-invented.

Let me now acknowledge a pervasive problem in higher education that no one wants to talk about: the preoccupation of many in academia with what I hope will become antiquated notions of status. This is a difficult (nay, dreadful!) topic for me to discuss in this venue, at a university that is both very special to me and clearly at the top of any pecking order—but here I am, and so, as someone once said, Onward!

The more thoughtfully-integrated educational structure that I envision as a successor to the increasingly homogeneous university/college system now present depends on our taking advantage of economies of scale and contemplates different roles for different players, both institutions and individuals; it values complementarities. Some institutions and some individuals are surely better positioned to be leading “producers” of sophisticated platforms and other content than are others. I also suspect that some institutions and individuals are better positioned than others (perhaps more temperamentally suited) to be extremely skillful consumers of content that originates mostly, if not entirely, elsewhere.

To be sure, different kinds of talent exist almost everywhere, and we should be careful not to exclude anyone from creative tasks for arbitrary reasons linked to wrong-headed notions of status. In fact, I suspect that market mechanisms will help achieve a sorting of people, institutions, and functions—which is certainly desirable from a system-wide perspective. At the same time, refusing to recognize the existence of institutional differences would be foolish. Some

places are fortunate to have an unusually powerful combination of intellectual and financial resources—a combination that is sometimes tied to scale and even to institutional culture. If the institutions especially well-positioned to make significant contributions to the development of course content and delivery mechanisms do so effectively, all of higher education will benefit. But this is certainly not to say that institutions especially well-suited to be “producers” (Princeton may well be among them) should be excused from paying attention to the system-wide need to control cost increases. Ideally, they would be outstanding examples of the ability to achieve excellent educational outcomes at manageable cost.

In thinking about status issues, we need to recognize that human nature is what it is—we are not, as President Eisgruber said so eloquently in his inaugural address, “angels.” Still, I think we should do our best to resist “above and below the salt” thinking. At the end of some future day, the real kudos may go to the highly-creative institutional *assemblers* of intellectual content and local teaching resources. There should be a real pay-off to institutions that are especially skillful in harvesting content provided by others and then adding educationally-rich value of their own, including mentoring.

A closely related point is that, as Hanna Gray has suggested, major universities, and especially the multiversities that Clark Kerr made famous, should ask hard questions about the wide range of activities that many of them now undertake—in part in response to the initiatives of others. No one wants to be left behind, seemingly unable to compete for the n<sup>th</sup> full-paying student. The rise of “consumerism” is a reality and can easily lead to what the historian Laurence R. Veysey once called “blind imitation”—to the search by essentially all universities for a “complete” course of study and the provision of innumerable student services. In her book aptly titled *Searching for Utopia*, President Gray offers this provocative insight:

It seems clear that universities need to confront some painful realities and become more deliberately selective in what they choose to do. Universities are overstretched in their range of programs, overbuilt in physical facilities, and overburdened by an excess of ambitions, expectations, and demands. The competition among them has led to greater homogeneity rather than constructive diversity of institutional profiles and of distinctive individual excellence. We would be better off if it were possible....to build on each institution’s comparative strengths...Greater differentiation among institutions might encourage each to focus on its own particular mix of academic priorities...<sup>20</sup>

She ends her commentary by urging a rebalancing of the elements of what she calls “the stripped down university.”<sup>21</sup>

It is by no means obvious how this country’s present educational system can move in the direction which President Gray advocates, since both current structures and assumptions about unending growth are deeply ingrained. But, well-crafted incentives at the state level might make a difference in the public sector. Additional research on the costs of various programs, and their relation to student learning, might make a difference across the board.

## Doctoral Education: Impending Changes?

There is one super-sensitive set of activities that I feel an obligation to at least allude to, even as I recognize the pain and suffering sure to afflict anyone who even mentions this subject, never mind someone with my long ties to a prestigious university such as Princeton. I refer to the scale of doctoral education in this country, seen now in relation to ongoing trends in faculty deployment that are, in part, directly related to the combination of cost pressures and the spread of online technologies.

The current sorry state of the job market for new doctorates, trained in the traditional way, is hardly a secret.<sup>22</sup> There has been, without doubt, a pronounced decrease in the demand by colleges and universities for new recipients of PhDs. The intense cost pressures felt by many colleges and universities have led to both a felt need to curb faculty payrolls and an increased desire for staffing flexibility. The growth of online programs has had its own effects, by reducing both the current and prospective need for “regular” faculty trained as teacher/scholars, and for individuals prepared to teach all aspects of their “own courses” in the traditional way.<sup>23</sup> The potential unbundling of faculty roles suggests that we may be moving toward a situation in which higher education in general needs relatively fewer “all purpose” teacher-scholars, and a larger number of individuals prepared to fill more specialized roles at various kinds of institutions.

One consequence of the incipient stages of these trends evident already is the substitution of adjuncts (part-time faculty) for regular faculty. Those of us inclined to focus our attention on the most privileged institutions (such as members of this audience) may be surprised by the magnitude of what has transpired already. David Figlio and his colleagues at Northwestern have summarized data documenting the dramatic decline in the share of all faculty (excluding graduate students) in the tenure system: the fraction declined from 57% in 1975 to 30% in 2009, and it is still falling. Figlio et al also report the results of a most interesting study at their own university which suggests that non-tenure-line faculty teaching introductory courses contributed more than regular faculty to lasting student learning.<sup>24</sup> These learning outcomes, based on work in introductory courses, are presumably very different from the learning that occurs through directed study and seminars, formats in which I would think regular faculty enjoy a real advantage. In any case, many institutions have concluded that adjuncts both cost less than regular faculty and provide more staffing flexibility.

Another factor to consider is the prospective reduction in the need for Teaching Assistants (TAs) that is likely to result from greater use of adaptive learning technologies (machine-guided learning) in many introductory courses. It is, of course, the current need for a large number of TAs that justifies (and pays for) the scale of many doctoral programs.<sup>25</sup>

These developments come on top of “pre-existing conditions” in doctoral education that would be serious enough without these added stresses. Robert M. Berdahl, when he was president of the Association of American Universities (AAU), once courageously asked “How many research universities does the

nation require?” He added: “I do not know how many we should have. But it is a serious question, worthy of consideration.”<sup>26</sup> Nor are these new concerns. In the early 1990s, Neil Rudenstine and I assembled data documenting the remarkable increase in the number and growth of doctoral programs, especially those less highly ranked, during the expansionist years between 1958 and 1972. During the subsequent “lean years,” the relative share of doctorates awarded by these newer and lower-ranked programs increased dramatically.<sup>27</sup>

As Berdahl’s failed attempt to get people to focus on this question illustrates all too clearly, it is extremely difficult to modify, never mind eliminate, programs that grew up in different times. And it is of course easy to understand why institutions that are the home of what one has to acknowledge are “middling” doctoral programs want to hold on to them. Someone once said that such programs are the “soft underbelly” of American higher education. This is, in my view, the right time to face up to the growing imbalance between supply and demand in doctoral education. We need to own up to reality. We need to recognize that, as President Hennessy of Stanford said bluntly in a discussion session following one of my Tanner Lectures in 2012, we are producing too many PhDs; we are going to have to accept the fact that in the future there will be fewer “regular” faculty positions than there are today.<sup>28</sup>

Market pressures may begin to compel changes. One might expect some prospective graduate students to shy away from doctoral programs because of evident job-market concerns—but recent data showing an unexpected boost in doctoral enrollment in the humanities offer a puzzling piece of evidence to the contrary.<sup>29</sup> It is true that, as one person said, “we live in a free country,” and if people are informed of job prospects, they should be allowed “to pursue their dreams.”<sup>30</sup> But such pursuits are far from cost free to the society at large.

In the public sector, in particular, both individual institutions and legislators may be more and more reluctant to support the expensive infrastructure that doctoral education requires. It is hard to know if the decision of the University of Florida to end its doctoral program in economics is any kind of harbinger.<sup>31</sup> Whatever the preferences of individual institutions, legislators may be reluctant to support positions at non-research universities for traditionally-trained faculty—especially in settings in which it is far from obvious that research capacities are going to be required of all those engaged in an unbundled set of teaching responsibilities. The purely economic consequences of moving from one staffing model to another could be considerable; what is sometimes called “departmental research” (building into the calculation of teaching loads an assumption that all faculty must be given some time for traditional research, aimed at publication) is very expensive. As Richard Spies puts it: “research wannabes are a luxury—or maybe an inefficiency—that we will find it hard to pay for in the future.”<sup>32</sup>

A danger, of course, is that such pressures will be excessive and will threaten support for the high quality research, and the high quality doctoral training, that will continue to be of critical importance. The key, as always, is to find a magical balance: to support “enough” but not “too much.” But I am definitely in the camp of those who believe that we are out of balance today in the “too much” direction” and need to realign our overall “system” of graduate education so that it will work more effectively in a changed (and changing) environment.

A related question of major consequence is whether renewed thought should be given to “teaching doctorates” —or at least to paying increasing attention to questions such as how to teach graduate students the skills needed to impart the kinds of education that simply cannot be provided online. I think, along with Michael McPherson, that there is a real opportunity here for academia writ large to address positively, and not just negatively, the implications of the spread of online learning.<sup>33</sup> Another colleague, Eugene Tobin, who has wide experience with liberal arts colleges, adds: “In an ironic way, the special human dimensions of teaching..., including understanding how to ‘flip’ the classroom with more than the use of technology, may be one of every future faculty member’s most needed skills.”<sup>34</sup> Our studies at ITHAKA suggest that faculty are very open, even eager, to move in this direction. Whether doctoral programs will have the interest, or the capacity, to respond to such ideas is an open question—and a very important one.

## Equity Issues

I end these musings by calling attention to what I regard as one of the most important issues to ponder as we look ahead: implications of the spread of online learning for “equity.” Will the development of various forms of online learning help level the playing field or exacerbate the already large divide between educational haves and have-nots? I ask this question even as I agree with those who argue that this divide is driven largely by factors such as income inequality which are not primarily the responsibility of higher education—culprits abound!<sup>35</sup> Still, I want to retain my focus on online learning. One of the founders of Coursera, Daphne Koller, has been eloquent in arguing that a major contribution of MOOCs is the opening of educational opportunity to students all over the world, regardless of their circumstances.<sup>36</sup> It would be ironic indeed if the whole gamut of online offerings were to have the perverse effect in the US of increasing, rather than reducing, disparities in educational outcomes. This is, regrettably, entirely possible.

Let’s start with Princeton. This university is making a commendable effort to see if there are ways to take advantage of technology to improve what is already an outstanding educational program. In my view, it is highly likely that the strongest liberal arts colleges, as well as the leading universities, will only get better as a result of opportunities created by advances in technology. The “haves” are not at risk. And because of generous financial aid policies, these privileged institutions will continue to offer exceptional educational opportunities not only to the well-qualified children of affluent families (who are present in large numbers in their applicant pools), but also to top students from lower income families. But the absolute number of such fortunate students from modest backgrounds will be small. As Joseph Stiglitz has put it, the problem is not that “social mobility is impossible, but that the upwardly mobile American is becoming a statistical rarity.”<sup>37</sup> Princeton will, I am confident, continue to make the direct contributions that it can to educating a diverse student body of high talent. And I hope that it will also seek ways, many of them less direct and involving its research arm and its leadership capacities, to contribute to the broader national challenge that is before us.

But what does online learning portend for less privileged educational institutions? What about the offerings available to students attending the mid-level public institutions and the community colleges that educate such a high proportion of our undergraduates? As public support for higher education diminishes, students at these institutions are increasingly the “have nots.” Will they too benefit, alongside undergraduates at the Princetons and Haverfords, from the spread of online technologies? That is certainly the hope. However, comments by some governors, feeding on the over-hyped promise of truly minimalist online offerings, suggest that inexpensive online programs, lacking in feedback loops and any real human component, could tempt states to try to meet their educational obligations “on the cheap.” Such a development, if it happens, could widen substantially the existing gap between the haves and the have-nots. The less-affluent, less-well-prepared students are poor candidates for cookie-cutter online offerings. A widely discussed study by Columbia’s Teacher’s College found compelling evidence that online offerings were not equally effective with all kinds of students.<sup>38</sup>

Jennifer Morton, an Assistant Professor at CUNY, has written eloquently about the needs of her students, many of whom are first-generation college-goers and/or recent immigrants from low income families, for the social skills that can be helped greatly by inspired face-to-face teaching. How to make eye contact, to speak up before strangers, and to defend a position in an unfamiliar setting—these are precisely the skills that she believes her students have to be helped to acquire. Children of middle-class families often learn to navigate social relationships at home, but that is often not an option for Professor Morton’s students. The danger, she suggests, is that the substitution of low-level online instruction for face-to-face teaching may simply aggravate problems that are already evident in many lecture-only settings, or in any setting in which faculty do not seek to impart the kinds of social skills that are so important for success in job searches and, for that matter, in life.<sup>39</sup> As she recognizes, much face-to-face teaching also fails abysmally in this area—but that is hardly an argument for mindlessly substituting an educational option that is equally poorly suited to meeting real needs.

I am driven back to my advocacy of a portfolio approach to curricular development: not every course needs to have the features Professor Morton champions, and it is probably unrealistic, for financial and other reasons, to have that as our goal. Also, I recognize that the concern I have expressed about the bad qualities of some forms of online learning may lead some to advocate staying out of the online game altogether. But that is hardly an answer. What is needed is the ability, and the willingness, to develop effective online pedagogies that can then be employed, in properly limited ways, in different settings, and with different student populations. My cautionary musings are meant only to heighten our awareness of a serious danger if we approach all forms of online learning with a one-size-fits-all mentality, and treat them as cure-alls, appropriate in every context.

We must believe in education as an engine of social mobility—and act on that belief. The Pledge of Allegiance refers, after all, to “one nation ... indivisible.” We need to take great care that in our search for cost-effective ways of educating we not lose sight of the need to teach *all* students in cost-effective ways

appropriate to their needs. It would be a tragedy, and nothing less than that, if new approaches to teaching widened the divide between the haves and the have-nots in our society.<sup>40</sup>

## Endnotes

- 1 I wish to thank Lawrence S. Bacow, Kevin M. Guthrie, Deanna Marcum, Michael S. McPherson, Christine Mulhern, Richard Spies, Eugene M. Tobin, Sarah E. Turner, and Derek Wu for many helpful comments on earlier drafts of this talk. I also wish to thank Johanna Brownell for her invaluable help with the preparation of a final version.
- 2 My former colleague, Kelly Lack, and I attempt to provide a kind of “reader’s guide” to the online learning landscape in the Appendix to William G. Bowen, *Higher Education in the Digital Age*, Princeton University Press, 2013, pp. 72-77.
- 3 For an unusually explicit statement of a direct link between state funding decisions and tuition increases, see: Brendan Bures, “Tuition increase imminent for FSU; Barron obligated to hike costs against wishes,” *FSU News*, August 25, 2013.
- 4 See Michael D. Shear, “Obama to Offer Plans to Ease Burden of Paying for College,” *New York Times*, August 21, 2013, online edition. Also see “FACT SHEET on the President’s Plan to Make College More Affordable: A Better Bargain for the Middle Class,” Office of the Press Secretary, The White House, August 22, 2013, and Kelly E. Field, “Obama’s Lofty Goals on College Costs Face Long Odds,” *Chronicle of Higher Education*, August 28, 2103.
- 5 In September 2013, there was a report on a project at San Jose State involving a “test” of the effectiveness of a Udacity offering, and I put “test” in quotes precisely because of the problems with this “research.” Particularly striking is the obvious power of selection effects (allowing students with different backgrounds and predilections to choose the teaching format that they prefer). As many of those who have commented on this project recognize, we just have to do much better than this “test” if we are to get anywhere in studying both learning outcomes for various groups of students and the costs of various kinds of “treatments.” See Carl Straumsheim, “The Full Report on Udacity Experiment,” *Inside Higher Ed*, September 12, 2013. See also the earlier article by the same author, “San Jose State U posts improved online course results, but Udacity partnership remains on pause,” *Inside Higher Ed* August 28, 2013. Particularly striking are the methodological problems, combined with the disappointing results for Udacity’s entry-level math offering—presumably “favorable” selection effects notwithstanding. Various individuals in the California system are reported to be (properly) skeptical about the allegedly positive results cited in earlier reports.
- 6 See Hunter Rawling’s remarks at the installation of President Eisgruber at Princeton University, September 22, 2013, in which he quotes Henry Cabot Lodge with respect to a course he had taken at Harvard:

“In all my four years, I never really studied anything, never had my mind roused to any exertion or to anything resembling active thought until in my senior year I stumbled into the course in medieval history given by Henry Adams, who had then just come to Harvard. . . . [Adams] had the power not only of exciting interest, but he awakened opposition to his own views, and this is one great secret of success in teaching. . . . I worked hard in that course because it gave me pleasure. I took the highest marks, for which I cared, as I found, singularly little, because marks were not my object, and for the first time I got a glimpse of what education might be and really learned something. . . . Yet it was not what I learned but the fact that I learned something, that I discovered that it was the keenest of pleasures to use one’s mind, a new sensation, and one which made Mr. Adams’s course in the history of the Middle Ages so memorable to me.” [Gary Wills, *Henry Adams and the Making of America*, New York, NY 2005, p. 89.]

My thoughts on how to improve online learning (in different contexts and for different pedagogies), and how we should be thinking about studies of the effectiveness of learning outcomes and potential cost savings, are in *Higher Education in a Digital Age*, especially pp. 46-61.
- 7 See my remarks at the upcoming Inauguration of Daniel Weiss as President of Haverford, October 26, 2013.
- 8 See Dan Currell, “In tempestuous times, colleges must decide what they’re for (essay),” *Inside Higher Ed*, June 28, 2013. Currell is a trustee of Gustavus Adolphus College, and executive director with the Legal, Risk and Compliance Practice at the Corporate Executive Board. See Scott Jaschik, “Obama’s Ratings for Higher Ed,” *Inside Higher Ed*, August 22, 2013: “The White House also said President Obama is ‘challenging’ colleges to ‘adopt one or more’ of practices he called ‘promising’ to ‘offer breakthroughs on cost, quality or both.’ Among them: competency-based learning that moves away from seat time, course redesign (including massive open online courses), the use of technology for student services, and more efforts to recognize prior learning.”

- 9 See Paul Fain, "Competency-based Transcripts," *Inside Higher Ed*, August 9, 2013. See also Jeffrey J. Selingo, "The New Nonlinear Path through College," *Chronicle of Higher Education*, September 30, 2013, and Scott Carlson, "Competency-based Education Goes Mainstream in Wisconsin," *Chronicle of Higher Education*, October 1, 2013.
- 10 See Peter F. Drucker, *The New Realities*, Elsevier, Great Britain, 1989, p. 249
- 11 See Paul Fain, "Experimental College's First Graduate," *Inside Higher Ed*, August 16, 2013.
- 12 See William G. Bowen, Matthew M. Chingos, Kelly A. Lack, and Thomas I. Nygren, "Interactive Learning Online at Public Universities: Evidence from Randomized Trials," May 22, 2012, available on the ITHAKA website at [www.sr.ithaka.org](http://www.sr.ithaka.org).
- 13 The eyes of one of my great teachers, Jacob Viner, sparkled when he demonstrated the intense pleasure of engagement with a new way of thinking. He taught me, and many others, that learning is great fun—a lesson that has had a lifelong impact on me. But I recognize, as one of my colleagues has pointed out to me, that this kind of experience is all too rare.
- 14 See, for example, the account of the growth of various kinds of online courses at Iowa State University: "Enrollment, student demand fuels growth for online courses at ISU," posted Aug. 26, 2013, Iowa State University News Service, <http://www.news.iastate.edu/news/2013/08/26/onlinecourses>.
- 15 See "Informing Innovation in Higher Education: Evidence from Implementing the Latest Online Learning Technologies in a Public University System," Ithaka S + R, November 8, 2012. <http://www.sr.ithaka.org/research-publications/informing-innovation-higher-education-evidence-implementing-latest-online>. Interim report forthcoming. This work at Maryland reminds me powerfully of the value of the enthusiasm and creativity of individual faculty members—which need to be treasured, not just tolerated, and certainly not repressed. But such creativity does need to be channeled.
- 16 See Carl Straumsheim, "UT Psychology Professors Prepare 'World's First' Synchronous Massive Online Course," *Inside Higher Ed*, August 27, 2013. The professors report that the research that led up to this offering demonstrated that their adaptive learning approach produced both better overall grades and a reduction in the achievement gap between upper, middle, and lower-income students. See Also Ry Rivard, "Georgia Tech and Udacity Roll Out Massive New Low-cost Degree Program," *Inside Higher Ed*, May 14, 2013. Georgia Tech plans to offer a Master's program for a fraction of the cost (less than \$7000/year versus the standard program cost of \$40,000 per year) to 10,000 students online.
- 17 See William G. Bowen, *Higher Education in the Digital Age*, Princeton University Press, 2013, and William G. Bowen, "The Potential for Online Learning: Promises and Pitfalls," *EDUCAUSE Review*, vol. 48, no. 5 (September/October 2013).
- 18 One telling example of the direction of causation is provided by experience in the state of Maryland, where the university system reached a "compact" of sorts with the state. As the Chancellor, William ("Brit") Kirwan explains [personal correspondence, September 7, 2013]: "In return for a systematic and sustained effort at cost containment, the state agreed to protect our budget, at least in relative terms and in effect 'buy down' tuition increases with general funds." Kirwan is scathing in his dismissal of the proposition that institutions should avoid seeking cost-effective reductions in educational costs. This argument, in Kirwan's words, "epitomizes why higher education is in such trouble." He goes on to say: "Few outside higher education could understand an argument that says, 'if an institution might produce better results with lower costs, then you should abandon the initiative.'" There is also abundant evidence from other states that reductions in state support have occurred in the absence of cost-saving innovations.
- 19 As of last May, 59 percent of private bachelor's institutions and 77 percent of public master's or bachelor's institutions had failed to meet enrollment targets. See Scott Jaschik, "Feeling the Heat: The 2013 Survey of College and University Admissions Directors," *Inside Higher Ed*, September 18, 2013, and Eric Hoover and Beckie Supiano, "In Admissions, Old Playbook is Being Revised," *Chronicle of Higher Education*, September 16, 2013.
- 20 See Hanna Gray, *Searching for Utopia*, University of California Press, 2013, p. 94. After citing Veysey, President Gray gives a sobering account of recent trends (pp. 78ff).
- 21 Gray, *Searching for Utopia*, p. 96.
- 22 See David Mihalyfy, "Regilding the Ivory Tower," *Inside Higher Ed*, June 18, 2013.

- 23 See William G. Bowen, Matthew M. Chingos, Kelly A. Lack, and Thomas I. Nygren, "Interactive Learning Online at Public Universities: Evidence from Randomized Trials," May 22, 2012, for very crude estimates of the potential effects of one online course on the mix of faculty needed. This crude simulation is but the tip of the proverbial iceberg, and it will be important to look closely at the results of the cost simulations the ITHAKA team is going to prepare for much more refined estimates of possible longer-term effects.
- 24 See David N. Figlio, Morton O. Schapiro, and Kevin B. Soter, "Are Tenure Track Professors Better Teachers?" NBER Working Paper, 19406, September 2013. The authors also cite a number of other studies of teaching effectiveness, measured in different ways, of various categories of faculty/teachers.
- 25 My colleague, Lawrence S. Bacow, has emphasized repeatedly the importance of TAs in driving decisions of all kinds concerning doctoral programs. Thus, he has observed: "As online learning becomes more prevalent, I think it is likely that the demand for TAs and the allocation of them across disciplines is likely to shift. Assuming that deans and provosts respond accordingly, some departments are likely to see reductions in the number of TAs they are allotted and others may see increases . . . I think this has big consequences for the size of graduate programs in the affected departments. Moreover, if a department cannot support the same number of graduate students through TAs, over time the size of the department may shrink (or at least it should in my mind); of course, some may also increase. My point is that online education, depending upon how it ultimately gets implemented, could have very large consequences for the size of various graduate programs." (Personal correspondence, August 12, 2103).
- 26 See Robert M. Berdahl, "Reassessing the Value of Research Universities," *Chronicle of Higher Education*, July 13, 2009, online edition.
- 27 See William G. Bowen and Neil L. Rudenstine, *In Pursuit of the PhD*, Princeton University Press, 1992, Chapter 4. Roughly 30 years earlier, in 1960, Bernard Berelson used colorful language to describe the forces that stimulate the growth of new doctoral programs, noting: "the colonization of the underdeveloped institutions by ambitious products of the developed ones who then work to make the colony a competitor of the mother university; the need to have graduate students as research and teaching assistants, partly in order to get and hold senior staff; the vanity, pride, and legitimate aspirations of the institutions." Bernard Berelson, *Graduate Education in the United States*, McGraw-Hill, NY, 1960, p. 35.
- 28 See Bowen, *Higher Education in the Digital Age*, n. 32. P. 33.
- 29 Data released by the Council of Graduate Schools this September [2013] are summarized by Scott Jaschik, "Humanities Doctoral Programs Show Unexpected Boost in New Students," *Inside Higher Education*, September 12, 2013.
- 30 See quote attributed to Debra Stewart in *Inside Higher Ed*, September 12, 2013
- 31 See Stacey Patton, "Once Flourishing Economics PhD Program Prepares to Die," *Chronicle of Higher Education*, September 10, 2013, online edition. It should be noted that prospects for graduates of PhD programs in economics are better than prospects for doctorate recipients in many other fields. But the costs to institutions of offering such programs are still far from negligible, as this story illustrates. The fact that this program is offered within a business school rather than within an arts and sciences program may be relevant in assessing the likelihood that other institutions will make similar decisions.
- 32 Personal correspondence, September 2, 2013.
- 33 Here is the way that Michael S. McPherson, president of the Spencer Foundation and a wise observer of this scene, puts it: "To have a solid academic career, at least outside the top research universities, a PhD in most fields will either need to be a really outstanding scholar/researcher or will have to be able to teach effectively in ways that computers can't easily match. We don't know for sure what those hard-to-match qualities are, but they certainly aren't going to be straightforward content delivery. This suggests to me that it may become necessary for graduate schools to take more seriously than they have the problem of preparing their students to teach well in those ways that require human qualities that we don't know how to match online. This is a very hard problem because what teaching well in college means, if we mean by good teaching more than giving high quality lectures, is not well understood." [Personal correspondence, August 9, 2013.]
- 34 Personal correspondence, August 9, 2013.
- 35 See Catherine B. Hill, "Higher Education's Biggest Challenge is Income Inequality," *The Washington Post*, September 6, 2013.
- 36 See Daphne Koller, "How Online Education Can Create a 'Global 'Classroom,'" CNN International, June 21, 2013. <http://edition.cnn.com/2013/06/21/business/opinion-koller-education-petersburg-forum/index.html>

- 37 See Joseph E. Stiglitz, "Equal Opportunity, our National Myth," *New York Times*, February 16, 2013.
- 38 See Shanna Smith Jaggars and Thomas Bailey, "Effectiveness of Fully Online Courses for College Students: Response to a Department of Education Meta-Analysis," Community College Research Center, Teacher's College Columbia University (July 2010). It should have surprised no one to learn that students from modest backgrounds with less well thought out educational aspirations were much more likely than other students to drop out of online courses. Commenting on early experience with the much-touted Udacity/San Jose State effort to use online teaching, Lillian Taiz, president of the California Faculty Association, noted that pass rates were especially low in San Jose State's remedial math course. See Carl Straumsheim, "San Jose State U, posts improved online course results, but Udacity partnership remains on pause," *Inside Higher Ed*, August 28, 2013.
- 39 Jennifer Morton, "Unequal Classrooms: What Online Education Cannot Teach," *Chronicle of Higher Education*, August 29, 2013. My colleagues at ITHAKA believe that over time communities made possible by technology will create at least partial substitutes for the class-room discussions that many of us remember with such pleasure.
- 40 See Elizabeth Reddem. "Higher Education in 2020," *Inside Higher Ed*, September 26, 2013, for a dire warning that government pressures to drive down the costs of degrees could lead, in an unbundled online environment, to a situation in which "The cultural divide between the elite and the rest will widen in the US and the UK."