

I T H A K A

COURSERA PARTNERS
CONFERENCE KEYNOTE
ADDRESS

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University of Pennsylvania • April 5, 2013

A. Bromides

My status as an aging warrior gives me the prerogative, I would like to believe, of starting out by inflicting a few bromides on you.

1. These are early days

We cannot expect to have answers yet to most important questions. The most we can hope for is to have identified key questions, to have shown a willingness to test out ideas, and then to be ready to modify approaches if that is indicated.

Much of the discussion of online learning has too breathless a quality. There is too much of an inclination to declare sweeping success or dismal failure before we know very much. We need patience, as I tried to say at the end of the Tanner lectures and as I say again in the book that is an outgrowth of those lectures (*Higher Education in the Digital Age*); the tale of the Black Horse, told there, has much to teach us. The world of educational technology continues to develop very rapidly and could go in a great many directions. While we cannot afford to remain totally on the sidelines right now, we need to proceed with caution, and may, at times, find ourselves having to wait to see how developments unfold.

2. Context matters

A second admonition: We should place discussions of online learning squarely within a context shaped by prospects for higher education in general, fiscal realities, political realities, and the values (goals) of the educational enterprise—both in the US and around the world. It will not do to assume away serious problems, such as the fact that prospects for more generous state funding of higher education in the US are bleak.

3. Ideological propositions need to be muted and kept in check

While we should be aware of the interests of key stakeholders, including investors who are financing organizations such as Coursera, we should not be too quick to condemn what some may regard as impure motivations (e.g., making money). Making money can be just fine—and necessary for sustainability. We should focus more on incentives, effects on behavior, and outcomes than we should on who makes what kind of return on an investment. It is a mistake to glorify non-profits simply because they are non-profits. Some of us have learned, often the hard way, that non-profits, as well as for-profits, can behave abominably.

Similarly, we should be careful not to glamorize “open” systems just because they are open, and we should be careful about uncritical acceptance of propositions such as “information wants to be free.” As economists keep insisting, nothing is really “free.” We must not forget what was needed to create content and what is needed to sustain digital resources. My worry about MOOCs right now is not that they are too heavily focused on making money, but that they may not be sufficiently focused on generating the continuing flow of resources needed to maintain, upgrade, and sustain their offerings.

I am now going to discuss eight propositions. The last one, about the potential social effects in the US of inappropriate uses of poorly designed online technologies, is especially important. But I will work up to it.

B. Propositions

1. It is essential to distinguish among target populations

Much of the discussion of MOOCs is marred, in my view, by too much of a tendency to search for a single “grand narrative.” “To disrupt or not to disrupt” is hardly the way to frame any discussion of online learning—when there are so many variations in modes of delivery and where there are varied target populations with different needs and priorities.

One absolutely crucial distinction is between the needs of individual learners and the needs of the institutions—colleges and universities—that are currently in the business of teaching students and awarding degrees. Providers of new forms of online teaching are going to evolve differently if they are primarily providing courses directly to individual learners (a business-to-consumer offering) or if they are providing courses and services to academic institutions (a business-to-business offering). Both approaches will develop in this marketplace and both are likely to have real impact.

There are of course major differences within each of these two broad categories: individual learners and institutions.

Individual learners, whether in this country or abroad, face a variety of constraints and have a variety of objectives. Many MOOC students live in countries where educational capacity is very limited—Africa, India, and so on—and where the available educational offerings and educational funding models are generally very different from those found in most of the US. In these settings, providing access to a wide variety of good content is the key. We know now that, at the minimum, online offerings stimulate learning among a large, underserved population—which is terrific. But the content and delivery systems appropriate for much of this population may vary from what is appropriate in other contexts. Many American universities wish to reach an international population (either directly or through outposts abroad), and online learning can be an important way of doing so.

As many people have observed, individual learners, here and abroad, differ markedly in their objectives.

- Some are just trying to learn for learning's sake.
- Some are trying to earn a certification of some kind that might help them in their career. In this country, and also in other countries, “non-traditional” students are especially likely to be limited in their educational options because of their location or work/family obligations. For many of these individuals, the choice is not between attending a residential college and taking an online course, it is between taking an online course and nothing.

- Still other individuals, currently attending a traditional college or university, see MOOCs as a way of assisting them in the pursuit of their degrees, perhaps allowing them to complete their programs faster and at a reduced cost. Certifying the quality of both course offerings and individual student accomplishments is especially important to many of these students, as well as to some students not affiliated with individual colleges or universities.

Thinking now about institutions, there is, at one corner of the educational landscape—and it is actually a rather small corner—a set of “elite” institutions, universities and colleges (selective, relatively wealthy), mostly but not entirely located in the US, and their mostly resident students.

These institutions may not have the pressing need for online learning that other populations do, but they can benefit from exposing their students to online pedagogies—and there is certainly everything to be said for improving the teaching process in every setting. Many members of the faculties of these institutions are likely to be the producers of much online content (though certainly not all of it)—and of content that will often be used more extensively elsewhere than “at home.”

Then, there is a residual, “other” set of educational institutions, both public and private, that are less privileged and more hard-pressed financially than those in the “elite” set; a highly varied population of students attends this highly varied set of institutions.

I believe that the biggest generic challenge for Coursera and other MOOCs is to demonstrate that they can provide real value to this set of institutions, which, after all, educate the lion’s share of undergraduate students in this country. There are important subsets of colleges and universities within this huge, rather amorphous, category, and special attention should be paid to: (a) the great state university systems offering bachelor’s degrees; (b) regional private colleges and universities; and (c) community colleges. All of these subsets serve large numbers of non-traditional students. It is far from obvious that MOOCs can adapt easily (or effectively) to the needs of these institutions, qua institutions. Can MOOCs serve what are, in effect, two quite different masters—institutions as well as individual students? Right now no one knows the answer to this key question.

This question is enormously important precisely because this potpourri of institutions matters greatly. They are, and will remain for the foreseeable future, both the main assessors of student achievement and the organizing vehicles through which educational resources, including student aid, are channeled. It is essential that entities such as Coursera work closely with these institutions, attempting to meet their all-too-real needs, and not simply ignore them or bypass them. I am a great admirer of the research universities in this country, having lived most of my professional life within one of them, but I have to say, with all due respect, that what happens within the far broader amalgam of other “sectors” is at *least as important* as what happens at the Penns of this world—and quite possibly *more important* from the perspective of the future of online learning. Mutual respect across sectors is very, very important.

2. Different pedagogies are right for different disciplines

In particular, sophisticated “adaptive learning” methods of machine-guided instruction are a highly promising way of teaching basic concepts in subjects like beginning statistics in which there are agreed answers to questions such as: What is a *t*-test? What is a confidence interval? Candace Thille and her colleagues at Carnegie Mellon have been the pioneers in using cognitive science and masses of data on how students learn (and what mistakes they commonly make) to create a pedagogy that is rich in feedback loops and highly structured “hints.” Research my colleagues and I have done within the research and consulting group Ithaka S+R (summarized in *Higher Education in the Digital Age*) demonstrates the potential of this kind of teaching on mainline public university campuses.¹

This is, however, a complicated and expensive pedagogy to develop, and I suspect it can only be justified in a limited number of situations. But it should scale well, and when offered in a hybrid mode (with a limited amount of face-to-face support for students who need help in staying on task), it should be valuable in attacking one of the most vexing problems in higher education today—namely, how to get much larger numbers of students successfully through gateway courses in fields such as math and statistics in a reasonable amount of time and at a reasonable cost.

My guess—my hope—is that this kind of adaptive learning will evolve over time. But we should not spend scarce resources attempting to mimic the approach that works in statistics to instruction in discursive fields less well-suited to it.

That being said, I am not trying to assert that online technologies of various kinds will only impact courses teaching material where there is “a single right answer.” I am now persuaded that approaches other than the Carnegie Mellon adaptive learning model, and especially peer-to-peer interactions made possible by ubiquitous access to networks of online learners, can work well in discursive fields such as literature and international affairs. Certainly the success of courses of this kind developed at universities such as Penn is encouraging. Here too, however, there is much work to be done in both improving online forums (the aggregation of threads and the sorting of comments) and the presentation of material. But this will happen. Indeed, it is happening. The pace of experimentation is breathtaking—and most impressive, as we see both through Coursera’s varied offerings and through the high level of other online activity at places such as Stanford. These approaches are less expensive to develop than Carnegie Mellon kinds of interactive instruction, and they too have great potential. My plea, as many of you know, is that experimentation be accompanied by rigorous assessment of outcomes—preferably by disinterested third parties.

3. Some (limited) degree of “local” customization of online courses is important and should be facilitated

The Ithaca S+R study of “barriers to adoption of online courses” (led by Lawrence S. Bacow, former chancellor of MIT and former president of Tufts) emphasizes the need to allow some degree of customization if faculty at many institutions are to be persuaded to use online pedagogies.² But there is a careful balance that needs to be struck. Not all wheels need to be re-invented, and I continue to believe that centralized development of basic course “scaffolding” makes all kinds of sense. Coursera is doing yeoman work of this kind, and its basic platform development complements well the discipline-specific add-ons that individual colleges and universities are well-positioned to provide. edX is also seeking to create a platform that will meet this need.

I think Daphne Koller, Coursera's tireless leader, is right when she stresses the particular appeal of a "wrap-around" approach to course construction in both basic/remedial courses that many people don't want to teach and in some advanced courses. "Local" faculty should by all means enrich basic course content and make it more applicable to local circumstances—but they should not feel a need to start from scratch. Providers of both platforms and the core content in basic courses need to assign a high priority to facilitating at least a modicum of customization by others.

4. It is critically important to assemble more real evidence concerning the learning outcomes associated with online offerings; more rigorous research is badly needed

A recent survey of college and university presidents by *Inside Higher Ed* found that, in the words of the article, "presidents remain unpersuaded by, if not skeptical of, MOOC mania." "Only 14 percent of presidents strongly agree, and another 28 percent agree, that massive open online courses have 'great potential to make a positive impact' on higher education; 31 percent disagree or strongly disagree, and rest are neutral."³ The presidents were much more optimistic about the potential of a number of other innovations, so it was not just that they are skeptical about everything.

As I have said on other occasions, it is appalling how little is actually known about the learning outcomes produced by various forms of online learning. My colleague, Kelly A. Lack, has just produced and made available through Ithaka S+R a comprehensive review of the literature on this subject; her work tells us how little really solid research has been done (especially on undergraduate student populations at mainline public universities).⁴ Failure to control for selection effects is one major shortcoming of most studies; small sample sizes are another. There is also a distressing lack of reliable third-party assessments. Assertion, anecdotes, and self-study take us only so far. It is especially important to look rigorously at differences in outcomes for subsets of students defined by socio-economic status and academic background, as the Columbia Teachers College work on community colleges demonstrates.⁵

Having labored in this vineyard myself, I know how hard it is to do this research—and we must keep looking for cost-effective ways of doing rigorous studies that are manageable. Randomized trials are great, but they are ... well, a real bear. In any case, we do have to take a reasonably long time horizon and be at least somewhat patient. The desire for instant results, for instant gratification (which is common, I regret to say, among college and university presidents as well as among producers of content), has to be tempered by an understanding of how important it is to get things right and to amass evidence that will impress skeptics.

The University System of Maryland and Coursera are now working together, with Ithaca S+R, on an ambitious study of learning outcomes in various parts of the Maryland system associated with more than 10 different online offerings. Many more studies of this kind are needed.

5. We must focus self-consciously, and relentlessly, on controlling educational costs

I continue to be more than bemused—I am dismayed—by the lack of attention paid to implications for educational costs (for both institutions and students) in many gatherings of this kind and in so much of what is written about online learning. To be sure, talking about the need to control costs can be unpopular and seem to be less forward-looking than talking about the desirability of reaching more students and teaching in new and exciting ways. But we dare not just keep gilding the educational lily—such an approach risks further erosion of public support for the entire educational enterprise. It is entirely possible that more demonstrated commitments to intelligent pursuit of cost-effective ways of educating students by educational institutions would increase the public's confidence in the ability of these institutions to change, and would also increase political support for at least somewhat more generous state funding.

Faculty members understandably fear job losses, as Professor Albert J. Sumell at Youngstown State University explains cogently and sympathetically in an article aptly titled “I Don't Want to Be Mooc'd.”⁶ While there are ways of minimizing such risks of job loss (by redeploying faculty to higher-value tasks and teaching more students), we have to be prepared to contemplate shifts in faculty ranks—

both in overall numbers and in composition. We also have to recognize the implications of such possible changes for graduate education and for what is called “departmental research.” John Hennessy, president of Stanford University, is one of the few leaders in higher education willing to be brutally candid in talking about such subjects.

The plain fact is that a combination of fiscal and political realities will continue to put inexorable pressure on the economic structure of higher education in this country, especially in the public sector. While intelligent re-examination of tuition policies and financial aid policies can be of some help, I do not think that there is any way to avoid thorough-going efforts to raise productivity—by both reducing the “inputs” denominator of the productivity ratio and raising the “outputs” numerator.

Just as we need more and better studies of learning outcomes, we also need sophisticated studies of possible ways of controlling costs. Simulations of future steady-state options are definitely in order because we know that contemporaneous comparisons of the costs of online learning models and various face-to-face models are flawed by the fact that the costs of doing almost anything for the first time are greater than the costs of doing the same thing for the n th time. It can be possible, over time, to loosen constraints and to improve how we utilize new technologies.

I think that the greatest opportunity to raise productivity lies in imaginative re-thinking of how to schedule courses, how to make more efficient use of fixed plant, and how to facilitate the flow of students through what should be viewed as an “educational system,” not a static set of programs and rigid scheduling conventions. The real trick is to use technology to both raise completion rates and reduce time-to-degree. And the place to begin is by embracing the desirability of such efforts.

6. System-wide thinking is required; many of the most challenging questions for our educational system cannot be addressed on a single-campus basis

This proposition follows directly from what I have just said about scheduling and “flow through the system.” In New York, both SUNY and CUNY are thinking along exactly these lines. CUNY has been courageous, as well as thoughtful, in taking on this set of challenges directly through its Pathways program, and it is sad to see what I regard as retrograde thinking on the part of some faculty who do not want to cede any authority to anyone.⁷

External certification of knowledge acquisition can be an important part of the process of thinking and acting “system-wide.” I applaud the ACE/Coursera initiative in thinking about course credit, and I hope that we will not be too timid in pressing ahead in such directions. But we also have to recognize that, as Richard Ekman, the President of the Council of Independent Colleges, keeps reminding us, the overall structure of an educational program matters greatly—education should be more than just passing a miscellaneous set of individual courses.

It is widely agreed that a major problem in many settings is the difficulty experienced by students in getting into—and getting through—gateway (“bottleneck”) courses. In California, budget constraints have forced community colleges to turn away about 500,000 students. In an effort to address this problem, Democratic State Senate President Pro Tem Darrell Steinberg has devised a plan to require public colleges to award credit for work done by students in online programs unaffiliated with their colleges (sometimes called “outsourcing”). Steinberg’s plan includes provision for a nine-member council of faculty to decide which courses would qualify for this program. Not surprisingly, faculty opposition to the plan has surfaced quickly, and there is clearly some faculty opposition to the potential use of ACE-recommended Coursera offerings in this context. Faculty would obviously prefer that the state simply fund more “regular” offerings on their campuses, but it is far from obvious that this is a practical alternative given the fiscal realities in California.⁸

This may be the right place to address another pervasive problem that no one wants to talk about: the preoccupation of many in academia with what may become, if they are not already, outmoded notions about status. The more thoughtfully integrated system of higher education that I envision contemplates different roles for different players (both institutions and individuals) and values complementarities.

I certainly understand why Coursera has wanted to have institutional participants that are simultaneously both producers and consumers of content. But this natural, and in many ways proper, pursuit of a kind of inclusiveness should not be overdone. It may well be that some individuals and some institutions are better positioned to be leading “producers” of content than others, and it may well be that some individuals and institutions are better positioned to be extremely skillful consumers of content that originated mostly, if not entirely, elsewhere. My argument is simply an argument for division of labor and for taking advantage of economies of scale. I certainly do not mean to suggest that there are “superior beings” or “superior institutions” preordained to do the really creative work. Different kinds of talent exist almost everywhere, and we should be careful not to exclude people (or institutions) from some kinds of tasks for arbitrary reasons linked to wrong-headed notions of status. And, in fact, I suspect that market mechanisms will help achieve the sorting of people, institutions, and functions that seems to me to be desirable and efficient from a system-wide perspective. At the same time, it would be foolish to refuse to recognize the existence of institutional differences. Some places are fortunate to have an unusually powerful combination of intellectual and financial resources that is sometimes tied to scale and even to institutional culture. If the institutions especially well-positioned to make significant contributions to course content and delivery mechanisms do so effectively, all of higher education will benefit.

Human nature is what it is, but I think we should at least try and 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 organizational ideas, intellectual content, and pedagogies. There should be a real pay-off to institutions that are especially skillful in harvesting content others provide and then adding other kinds of educationally-rich value of their own, including mentoring and directed study.

That thought leads directly to my seventh proposition—and, you may be relieved to recall, there are only eight propositions on my list.

7. New thinking is needed on faculty roles and on optimal organizational, decision-making mechanisms

Over dinner at the MIT/Harvard edX gathering last month, I had a lively discussion with one of MIT's leaders regarding the biggest challenges for the further development of MOOCs. He was naturally focused on technical issues which, as I have said, are real—they are challenging, and, fortunately, lots of big brains are focused on them. But I have come to believe, more and more strongly, that effective adoption of online pedagogies is going to require new thinking about decision-making in academia and the role of the faculty. There are, in my view, organizational and decision-making challenges that are at least as daunting—maybe more daunting—than the purely technical challenges.

I question whether the particular models of what is often called “shared governance” that have been developed over the last century are well-suited to the digital world. Shared governance often means dividing up tasks in seemingly clear-cut ways: leaving “corporate” decisions of one kind or another entirely in the hands of trustees and “academic” decisions entirely in the hands of faculty. But, if wise decisions are to be made on key topics such as teaching methods, it is imperative that they be made by a mix of individuals from different parts of the institution, including faculty leaders, but also others well-positioned to consider the full ramifications of the choices at hand. There are real dangers in reliance on the compartmentalized thinking that too often accompanies the decentralized modes of organization to which we have become accustomed.

Given the institution-wide stakes associated with judgments as to when and how digital technologies should be used to teach some kinds of content, there is a strong case to be made for genuinely collaborative decision-making that includes faculty, of course, but that does not give full authority to determine teaching methods to particular professors or even to particular departments. There are too many “spillover” effects. In the digital age, faculty are dependent on tools that are available via an infrastructure that serves users across classes, courses, departments, and at times even institutions. The days are over when faculty can

expect to have complete control over the tools they use. It will become more and more difficult for faculty operating in online environments to speak of “my course.”

Specific organizational solutions will vary from institution to institution, but the general principle is clear: some centralized calibration of both benefits and costs is essential. In a less complex age, it may have been sensible to leave almost all decisions concerning not just what to teach, but how to teach, in the hands of individual faculty members. It is by no means clear, however, that this model is the right one going forward, and it would be highly desirable if the mainline academic community were seized of this issue and addressed it before “outsiders” dictate solutions. To repeat: faculty involvement is essential. There is a self-evident need for consultation with those who are expert in their disciplines and experienced in teaching—but this is not the same thing as giving faculty veto power over change.

Questions concerning the exercise of proprietary rights and of “ownership” more generally have to be thought through very carefully. Google has taught all of us the economic value of exploiting huge amounts of proprietary data to create, in Google’s context, opportunities for highly targeted advertising. Online learning, and MOOCs specifically, are generating and will generate masses of valuable information on how students learn, and it has to be tempting for those who harvest such data to maintain their proprietary status and use the data to improve their own teaching resources. But there is also a “public good” aspect to such data, and a case can certainly be made for creating some kind of public depository, so that scholars and teachers generally could use the data to improve learning outcomes.

Another specific set of issues that deserves much more thought is how intellectual property rights in content should be regarded. This issue ties directly into the question of whether and how MOOCs will be repeated. What happens if the creator of a particular MOOC moves from one institution to another? Retires or dies? As one experienced student of online learning commented to me, “Coursera has hundreds of wonderful courses but if I can’t tell someone about one with the expectation that they can take it in the future, then MOOCs will never have much impact.”

I am reminded of a similar issue that JSTOR had to confront early on. JSTOR made back issues of journals available electronically; if libraries were to redesign themselves (as many have), the libraries had to be supremely confident that, in fact, the electronic back issues would always be there. JSTOR developed specific contractual language to address this issue, and set aside resources to guarantee that it could do what it said it would do. I suspect that Coursera will want to confront its own variant of this question sooner rather than later. And of course Coursera and MOOCs in general have to wrestle with the question of how they are to generate a predictable stream of sustainable resources so that they can constantly upgrade, as well as maintain, their course offerings.

This big set of issues about roles and rights is less glamorous than the technical issues, but it deserves far more attention than it has been getting to date. Lawrence S. Bacow, Michael S. McPherson, the president of the Spencer Foundation, and I hope to make some headway in thinking through what kind of paradigms might serve the academic community well in the increasingly complex organizational settings that are evolving.

8. Stratification worries also deserve much more attention than they receive. There is a danger that we will end up with both some reasonable number of “haves” —and with lots of “have-nots”

It is more than mildly ironic that a wonderful technological advance designed to improve access to high-quality content worldwide could conceivably end up being used (“abused”?) to, in fact, widen gaps in educational opportunity and achievement in this country. Let me explain my concern.

In giving the Atwell lecture at this year’s meeting of the American Council on Education, William E. Kirwan, the exceedingly able Chancellor of the University System of Maryland, bemoaned the difficulty we are having in making real the substance of the American Dream—the belief that a person’s status at birth should not determine his or her status throughout life. The facts are sobering. According to Chancellor Kirwan, “a child born into a family in the highest quartile of income has a roughly 85 percent chance of earning a college degree. A child born into a family in the lowest quartile of income has a less than 8 percent chance of earning a degree.” That is a tenfold difference! Studies at Stanford

and at the University of Michigan find that education gaps between the rich and poor in this country are growing, not shrinking, and Kirwan reminds us of OECD data showing that “children of less-educated parents in the U.S. have a tougher time climbing the educational ladder than in almost any other developed country.”⁹ The Nobel Prize winner Joseph Stiglitz has called equal opportunity “our national myth.”¹⁰

Unfortunately, the facts are all too clear. There is a growing stratification within higher education in this country, with widening gaps not just between students from different socioeconomic backgrounds, but also between institutions. For reasons too complicated to go into today, the resources available to the wealthiest institutions have grown more rapidly than the resources available down the line.

Let me now connect this broad concern about stratification to online learning. As I continue to ponder what is likely to transpire, I confess to a serious worry. The promises that online learning offers, including the promotion of educational opportunity worldwide, could simultaneously have the perverse effect of widening the gap in American higher education between the “haves” and “have-nots.” Here is why I am worried. In my view, the intelligent application of the new technologies will almost certainly improve education at the most privileged places—Penn certainly among them. Is it likely that at esteemed liberal arts institutions like Williams and Haverford, or at the most selective residential universities such as Harvard and Princeton, online approaches will be allowed to depersonalize instruction and deprive future generations of students of the wonderful residential experience so characteristic of these places? No way!

There will always be a coterie of families willing and able to pay the price for this special kind of education, almost regardless of cost. As a believer in “revealed preference” (the notion that people reveal their beliefs through their actions), I am mightily impressed by the extraordinary number of applicants for places in the most selective and expensive institutions. And, as everyone agrees, the children of affluent families are much more likely than other children to have not only the wherewithal to attend, but also the requisite qualifications for admission—in part because affluent families generally invest both far more money and far more time in the educational preparation of their children than do poorer families. Because of generous financial aid, the mix of students at the most selective colleges and universities will include some number of highly talented individuals from poorer families. But how many such students are there likely

to be in this rarified subset of American higher education? The overall number is going to be very, very small. So, 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 oddity.”¹¹

Recent pronouncements by the governors of some states lead me to worry that the assumed promise of online education—and, I would say, the “overhyped” promise of not-very-good versions of online education that are extremely rudimentary and lack any face-to-face component—could do real harm.¹² States will be sorely tempted to use relatively inexpensive online programs to serve the less affluent, less well-prepared segment of potential college-goers. In this context it is critically important to remember that there is an enormous variation in the quality of online offerings. Some consist solely of PowerPoint slides and textbook assignments posted online. Imposing such “courses” on poorly prepared students is hardly a promising path forward. If I am right in thinking that residential campuses and the other advantages offered by the more selective sector of higher education will continue to confer major benefits on those privileged to attend them, it is not hard to envision the “haves” continuing to gain considerable ground on the “have-nots.” In short, excessive belief by some in the value of minimalist online approaches to learning, and the temptation to use the allure of online learning to justify a further defunding of public higher education, could lead to an ever more bifurcated system of higher education. Not an attractive prospect.

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But let me not end on a down note. I am so impressed by what all of you assembled here have accomplished already—and are accomplishing each day. My congratulations to all of you, as you press on. I have enjoyed greatly getting to know you, Daphne, and I am sorry only, Andrew, that I have not had an opportunity to get to know you as well. Leadership of organizations such as this one matters so much, and Coursera is truly fortunate to have had the two of you as its guiding spirits.

I do hope—and believe—that the world at large will be a far better place because of Coursera’s efforts. My role today, as I have perceived it, is to temper the optimism that we all share for improvements in access and acquisition of knowledge with an emphasis on problems yet to be addressed and a concern about social impacts. Navel-gazing may be fine, but only up to a point. We have to ask, at the end of the day, where all of this is heading—and what the real consequences will be, not just for the privileged, but for society writ large. Will we be able to take full advantage of the wonderful opportunities provided by ingenuity and technological prowess? And will we include in our calculations the needs of the less privileged? That is, for me, a key question.

Endnotes

- 1 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, <http://www.sr.ithaka.org/research-publications/interactive-learning-online-public-universities-evidence-randomized-trials>.
- 2 Lawrence S. Bacow, William G. Bowen, Kevin M. Guthrie, Kelly A. Lack and Matthew P. Long, *Barriers to Adoption of Online Learning Systems in U.S. Higher Education*, May 1, 2012, <http://www.sr.ithaka.org/research-publications/barriers-adoption-online-learning-systems-us-higher-education>.
- 3 Doug Lederman, "Affirmative Action, Innovation and the Financial Future: A Survey of Presidents," *Inside Higher Ed*, March 1, 2013.
- 4 Kelly A. Lack, *Current Status of Research on Online Learning in Postsecondary Education*, March 21, 2013, <http://www.sr.ithaka.org/research-publications/current-status-research-online-learning-postsecondary-education>.
- 5 See, for example, Di Xu and Shanna Smith Jaggars, "Adaptability to Online Learning: Differences Across Types of Students and Academic Subject Areas," CCRC Working Paper No. 54, Community College Research Center, Teachers College, Columbia University (February 2013), <http://ccrc.tc.columbia.edu/publications/adaptability-to-online-learning.html> (accessed April 9, 2013). In this study, Xu and Jaggars, from the Community College Research Center at Teachers College, analyze data from more than 40,000 students who enrolled in community and technical college students in Washington State in fall 2004, and who were tracked through spring 2009. When the researchers compare the performance in online and face-to-face courses by the same student (to measure what they call the student's "adaptability to online learning"), they find that students generally earned lower grades in online courses than in face-to-face courses, though some groups of students (for example, students with higher grade point averages) "adapted" better than others.
- 6 Albert J. Sumell, "I Don't Want to Be Moo'd," *Chronicle of Higher Education*, March 25, 2013. Professor Sumell is an economist who understands well the logic behind "creative destruction" in capitalist societies, and who teaches the benefits of creative destruction to his students. But he also recognizes that there need to be exceptions to the rule, and he is honest enough to acknowledge his hope that he will be one of them. In January 2013, six community college faculty members from the San Diego Community College District in California offered a less thoughtful, and less gracious, argument for preserving face-to-face teaching in all of its dimensions; see Jennifer Cost et al., "Essay Says Faculty Involved in MOOCs May Be Making Rope for Professional Hangings," *Inside Higher Ed*, January 14, 2013. This piece is marred, in my judgment, by its blanket attack on "market values" and its superficial discussion of what are real issues associated with the meaning of "shared governance."
- 7 In June 2011 the trustees of the City University of New York (CUNY) approved a resolution creating the Pathways initiative, which is designed to facilitate the transfer process between the system's two- and four-year colleges. Under this project, all students in the system are required to complete 30 Common Core credits; students who are transferring from community to senior colleges are required to take an additional six to twelve "College Option" credits. Individual colleges have substantial flexibility in determining the content of the "Common Core" credits, and, in the case of the senior colleges, the College Option credits. For more information on the Pathways initiative, see <https://www.cuny.edu/academics/initiatives/pathways.html>. Also see Dan Berrett, "Efficiency and Academic Freedom Clash in a Fight at CUNY," *Chronicle of Higher Education*, March 25, 2013, for a description of the opposition to the Pathways program.
- 8 See Ry Rivard, "California Academic Leaders Oppose Outsourcing Plan," *Inside Higher Ed*, March 28, 2013.
- 9 William E. Kirwan, "The Completion Imperative: Harnessing Change to Meet Our Responsibilities." American Council on Education, 95th Annual Meeting, March 3, 2013.
- 10 Joseph E. Stiglitz, "Equal Opportunity, Our National Myth," *New York Times*, February 16, 2013.
- 11 Ibid.
- 12 See Andrew Leonard, "Conservatives Declare War on College," *Salon.com*, February 22, 2013.