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American Education Second to None? How We Must Change to Meet Twenty-First-Century Imperatives

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Forty years ago higher education was vitally important, but it was still optional. In the Midwest where I lived, we were losing a lot of low-skill manufacturing jobs, but most of them were just moving south. Seventy percent of the workforce had a high school diploma or less, and you could still achieve a middle-class lifestyle working in low-knowledge jobs. Now those jobs have moved offshore, and higher education is essential. Manufacturing jobs and most service jobs now require more sophisticated knowledge and problem-solving skills. Virtually all the job growth in the past forty years in the United States has been in jobs held by people with some college or a postsecondary degree.

Moreover, the wage premium for having a baccalaureate degree has grown from 48 percent in 1980 to 81 percent in 2005. It is no wonder that enrollments in the past dozen years have grown 37 percent, faster than any similar period since the 1960s. From 1964 to 2008, the share of jobs in the United States held by workers with a high school education or less dropped from almost 80 percent to 41 percent. From 1973 to 2009, virtually all the job growth in the United States (an increase of nearly 65 million jobs) involved people with some postsecondary education. The percentage of workers with a bachelor’s degree doubled, and the number of workers with a bachelor’s degree grew from eight million to twenty-eight million. That trend is continuing. Better educated workers have weathered the “Great Recession” far better than others. People with bachelor’s degrees actually gained 187,000 jobs during the recession and an additional two million jobs during the recovery from January 2010 to February 2012. Those with a high school diploma or less lost 5.6 million jobs in the recession, with no recovery by February 2012 (Carnevale, Smith, and Strohl 2010).

Obviously, the economic value of education is important, but that is just part of the story. We have a more crowded planet; increasing standards of living and energy consumption threaten the ecosystem; disease still plagues human life; and scarce resources and weak intercultural understanding and tolerance continue to generate wars and threats of war. These challenges—economic, health, environmental, social, and political—make widespread educational attainment more essential in the twenty-first century than it has ever been before.

Averting poverty, famine, war, and pestilence might be enough. But one member of an audience recently asked me, “What about happiness?” Happiness, too. Having a PhD doesn’t guarantee happiness, but ignorance is not bliss. To me the essence of happiness is self-expression. Human beings are clearly driven to acquire and to use knowledge in personal relationships, work, language, inventions, art, and music. In the Declaration of Independence, Thomas Jefferson wrote that “life, liberty, and the pursuit of happiness” are inalienable human rights. I’m comfortable asserting that the opportunity to become well-educated is a human right.

Precisely because higher education has become essential, the low rate of participation and achievement from lower-income, less-educated families is the major educational challenge of our era. The best sources of information on the demographics of participation and success in higher education are the national longitudinal sample surveys administered by the National Center for Education Statistics. These studies show that, holding academic ability constant, participation and success in postsecondary education are strongly associated with higher socio-economic status (SES) (Advisory Committee on Student Financial Assistance 2001).

Low-SES students of high academic ability participate in higher education at essentially the same rate as low-academic-ability, high-SES students. The college graduation rate is even more dramatically influenced by socio-economic status. The most worrisome differences are for the large number of average students, those with an SAT
American Education Second to None?

score between 1000 and 1100. Roughly 65 percent of high-SES students in the average-ability group obtain a BA or higher degree by age twenty-eight. About 40 percent of students in the second quartile of SES with average academic ability obtain a BA or higher, and fewer than 20 percent of average-ability students in the lowest quartile of SES obtain a BA or better (Carnevale 2008).

Increasing educational attainment, at all levels of ability and socio-economic status, is imperative. At the highest quartile of socio-economic status, large numbers of people at every level of ability are participating and succeeding in postsecondary education. Both justice and enlightened self-interest require us to reduce and eliminate the disparities in attainment associated with income and family history in higher education.

Churning, almost chaotic public policy

The growing importance of education has led to a lot of public attention and churning, almost chaotic policy initiatives. Although my faith is occasionally shaken, I still believe that policy makers like to support education with money. But money is scarce, and there is evidence that without changing the ways we use it, spending more money for education fails to make much of a difference. As a result, policy makers and educators have been scrambling to find other ways of improving education. The resulting welter of policy initiatives offers ample evidence that the public cares and that educators are trying to respond. The chaos is and remains frustrating, but I think all this work is beginning to pay off. We are learning from our mistakes, and I believe we are getting closer to significant progress.

This seems a useful place to take a short trip to the recent past. In 2004–5, the State Higher Education Executive Officers Association organized a national commission on accountability in higher education. The commission was chaired by former US Secretary of Education Richard Riley. Its aspiration, perhaps unrealized, was to introduce some constructive ideas and change the tone of the national conversation about accountability. Its report suggested that “better” accountability would help improve performance, rather than generate static. That better accountability would be based on shared responsibility, not finger-pointing; pride, not fear. Great human achievements, perhaps with rare exceptions, only come when the people doing the work believe in the goals, focus their energies, care about the outcomes, want to excel, and measure results. The report is still relevant as a means of reducing chaos and increasing policy effectiveness.

The standards and assessment movements

In the 1990s, while working in philanthropy, I was introduced to the K-12 New Standards Project. Its theory of change, perhaps a little oversimplified, was straightforward. Standards and assessments shape the behavior of teachers and students. Therefore, we need high standards and excellent, authentic assessments. Finally, if we insist that students meet the standards (by employing high-stakes, high-quality tests), students and teachers will do what is needed to meet them.

The New Standards theory of change, like all reform strategies, contains what Paul Hill and Mary Beth Celio (1998) call “the zone of wishful thinking.” The zone of wishful thinking includes all the essential components of genuine educational achievement not directly addressed by the reform strategy. In attempting to implement the New Standards Project, we learned more about the difficulty of constructing comprehensive, authentic assessments; the importance of curricula and teaching skill; and the necessity of student engagement driven by aspiration and interest, not fear.

We have come a long way since the 1990s. The Common Core State Standards Initiative, a state-led effort to establish a common set of educational standards for kindergarten through twelfth grade in English language arts and mathematics, responds to nearly two decades of failed “standards-based reform.” The initiative recognizes that useful “standards” (I prefer the term “learning objectives”) must be focused, clear, meaningful, and based on a community consensus. Efforts to implement the standards show that we also have learned that different approaches to assessment and instruction are needed. The criteria used to develop the common core standards (“fewer, clearer, higher, evidence-based, and internationally benchmarked”) are intuitively compelling. Like most people who have
American Education Second to None?

been around awhile, I was stunned by the number of states that quickly decided to adopt them.

The decades-long “assessment movement” in postsecondary education is also maturing. Its acronyms (VSA, VFA, NSSE, CCSE, CLA, NILOA, and AHELO) are becoming part of the lexicon. We still have vigorous debates about what is desirable and possible, but I see a consensus emerging. Following are the key elements:

- Clear instructional objectives and intentions help both teachers and students.
- It is difficult to improve something one does not measure.
- Students, faculty, and others must find assessments authentic and credible.
- Our most cherished learning objectives—creativity, critical thinking, the ability to solve unscripted problems—are not easily measured, especially by standardized tests.

So despite genuine progress, we have work to do. The Organization for Economic Cooperation and Development’s soon-to-be-concluded feasibility study, Assessing Higher Education Learning Outcomes (AHELO), has demonstrated the challenges and the inevitability of learning assessments. We have to learn how to do this well—the alternative is to live with it being done poorly.

I have not designed a roadmap for that work, but I’m fairly certain that it should include examples of intellectual work—writing, problem solving, creative products—reliably evaluated by experts; a reasonable assessment of the elements of knowledge and skill that are subject to standardized tests; a much greater emphasis on formative, rather than summative assessments; and techniques for assuring external validity and comparability, without reifying assessments that, inevitably, can only approximate what they seek to measure. We are making progress, but we have a good ways to go.

Rethinking educational algebra

In a weak effort to be clever, “educational algebra” is the phrase I’ve coined for “time is the constant, learning the variable” to describe the organization of the educational enterprise. This formulation made more sense when the principal task of a college was to offer courses and see how many students could reach gradated levels of competency. We expected some students to learn a lot, some less, and some to fail. When most people could make a living in a low-skill occupation, sorting and selecting was almost as important as teaching, if not the main event. Finally, when time is the constant, it is relatively easy to pay by the hour.

Now that the objective is helping each student realize his or her potential, the main event must become teaching and learning, building capability. Sorting and selecting, while inevitable, is a lot less valuable. But neither our financing mechanisms nor our instructional methods are well adapted to make “learning the constant, time the variable.” This is the big problem we need to solve. When learning is the constant and time is the variable, it takes more time and effort for different students to acquire a “unit” of knowledge. How do we finance variable instructional time and expense, especially for students who need more time and assistance?

The easiest aspect of the problem is to provide credit for prior learning. Students and taxpayers should not pay for unneeded instruction. If a student can demonstrate mastery of the learning objectives for a course, neither the student nor the taxpayer should have to pay for anything more than an assessment. Of course, we have not yet agreed on a common framework for the learning objectives that can be aggregated into meaningful standards for a degree. The Lumina Foundation’s Degree Qualifications Profile is an important step in that direction. I hope we can turn it into a widely accepted framework in order to improve both quality assurance and productivity in higher education.

The more difficult problem is to provide adequate support for students who need additional help and time to achieve learning objectives. The limits of the student credit hour as a measure of learning are widely recognized, but I suspect the motive for some in the “time vs. competency” conversation is to gain new, federally subsidized revenues that easily and substantially exceed the cost of instruction. Instead of working to get more credit and revenue for little or
no effort, it would be reassuring to see institutions working more vigorously to advance student learning to a higher level.

Disruptive Innovation

Perhaps the most provocative conversations in education today concern “disruptive innovation.” Clayton Christensen’s book *The Innovator’s Dilemma* (1997) is a brilliant analysis of successive patterns of business growth and collapse in computing and other industries. If the ultimate success for an academic is to invent a meaningful term that becomes a cliché, “disruptive innovation” assures Christensen’s place in history. According to Wikipedia, a disruptive innovation is “an innovation that helps create a new market and value network, and eventually goes on to disrupt an existing market and value network (over a few years or decades), displacing an earlier technology.” The Wikipedia entry lists twenty-seven examples of innovations that “disrupted” an established market. Many, but not all, are in the computing industry. The list ends ironically with Wikipedia’s disruption of traditional encyclopedias.

One of the key ideas in Christensen’s analysis is that successful “high-end” industries (such as the minicomputer firms Digital and Wang) become increasingly expensive and specialized, addicted to costly habits and standards and to the limited number of customers who can afford their products. The Commodore 64, for which I paid $1,000 in 1983 while using Wang in the office, is an example of a cheap, low-quality product entering the marketplace to serve different customers. Suddenly, many more people had the benefit of computers. Soon the “disruptive” personal computer business was able to improve the quality and value of its products (still at a cost low enough to serve its many customers), and eventually it also captured the customers of the higher-end minicomputer industry. Wang and Digital are no more.

Christensen has been speaking and writing powerfully on these ideas for a decade or more. When I first heard him at an Aspen meeting attended mostly by leaders of high-cost elite institutions, he was diffident about the possibility that his ideas might apply to education. But that diffidence soon disappeared. “Disruptive innovation” is now on the lips of futurists and educational reformers all over the neighborhood.

Christensen’s theory suggests to some that most traditional institutions are headed for the dust heap, like Wang and Digital once were. Disruptive innovators are about to do them in. Christensen has compelling ideas, backed by powerful stories, and he is a formidable advocate. Like other serious educators, I’ve been pondering the implications of his ideas for education. Let me begin by making his case:

- The demand for higher education on a universal scale is undeniable.
- The cost of education to the consumer has been escalating at an unsustainable pace; traditional models of education are becoming increasingly unaffordable for both individuals and the public.
- The electronic capabilities for storing, retrieving, transmitting, and interacting with information have grown and continue to grow exponentially; technology threatens to make traditional libraries and classrooms obsolete.
- Alternative, low-cost, perhaps “lower-quality” providers of education are springing up like weeds; it may not be long before they totally disrupt the traditional industry.

Christensen’s ideas deserve the attention they have received. But if the analogy between higher education and the computer industry is extended too far, I think it breaks.

First, education is a collaboration, a joint product of the customer (the student) and the educator. When a consumer product is used in essentially the same way by most or all customers, it is easier to “disrupt” an existing market and create a new one. In education, the student’s contribution to the “product” often varies considerably according to abilities, motivation, goals, and previously obtained knowledge. This makes it more difficult for an educator (or an educational technology) to achieve the level of standardization needed to reduce costs and improve quality on a massive scale.
American Education Second to None?

Second, in important ways the “product” of education, knowledge and skill, is unbounded. It would be a daunting task to create a comprehensive map of human knowledge and skill (to say nothing about human ignorance and uncertainty). The most valuable “products” of education are the ability to use knowledge and skill to solve unscripted problems, to explore the frontiers of knowledge and understanding, and to experience life in a deeper way. Educators sometimes carry this idea too far, suggesting that educational quality is ineffable, mysterious, beyond measurement and accountability. Educational quality is not ineffable, but it is different in important ways from quality in transportation, computing, or information retrieval.

Third, human relationships—inspiration, emotional support, skillful coaching, and challenging interaction—add essential value to education. I cannot imagine quality education without faculty mentors, argument, and a deep appreciation of uncertainty. You can argue in a bar or a chat room without faculty, but my arguments have always been more educational when I’ve been overmatched by somebody who knows more than I do. Such people have value that is difficult to “disrupt.”

Fourth, for better or worse, selectivity and the associated prestige are part of the value-package in higher education. This is likely to “protect” some providers, but not most of them. Finally, and fortunately, while it has a powerful inertia of its own, the decentralized system of education in the United States is not a hierarchical corporate structure. We have substantial diversity and vigorous competition, among and even within institutions. Disruptive thinking and behavior are part of our DNA.

So I question whether “disruptive innovation” in higher education will play out in the same ways it has played out in computing. Traditional institutions are unlikely to disappear. That said, institutions and the educational enterprise in America must change fundamentally in order to meet the demand for widespread educational attainment.

Reinventing instruction

Despite the limits of educational technology, it would be stupid beyond comprehension to underestimate its potential to improve traditional practices of teaching and learning. In order to meet the educational imperatives of our age, we need to reinvent instruction. Here is a short list of things academics are already doing—most, perhaps all, of these innovations will and should be done at a more massive scale:

- providing online access to top quality lectures and other course materials
- leading real-time, online seminar discussion sections with students in geographically dispersed locations
- collaborating on the curriculum for large-enrollment courses and using the computer to deliver content and provide practice opportunities for students (Center for Academic Transformation, Carnegie-Mellon Open-Learning Initiative)
- collaborating on the curriculum of entire degree programs and delivering it both traditionally and online to distance learners (University of Southern California MSW and MAT programs)
- developing databases of learning objectives, assessing student knowledge and skill in the context of those objectives, and providing instruction tailored to the student’s needs and goals
- analyzing the interactions of students with computer-based instructional programs to improve the effectiveness of the programs and to increase the speed and scope of student learning
- employing “high-impact” instructional practices, with or without technology, that more deeply engage students in creative work to develop the skills they will need as professionals and citizens

Although the speed and power of information technology is essential, the most critical resource is the way we use faculty talent in designing curricula and delivering instruction. The foundation for widespread educational attainment consists of coherent, explicit educational objectives and well-designed curricula to achieve them. One cannot construct a coherent curriculum or employ educational technology effectively without teamwork. Learning how to work in teams more effectively is the challenge and opportunity facing the academic community. There will still be a place for soloists, but solo practitioners can no longer be the standard way of doing academic work.
American Education Second to None?

Turning education upside down

My friend Jim Cibulka, president of the National Council for Accreditation of Teacher Education, has said that teacher education needs to be “turned upside down.” This phrase is more than colorful language to talk about fundamental reform: it is a useful way to describe what we must do.

For the past twenty or thirty years, I’ve heard policymakers and pundits talk about “failing schools.” I never heard such language when I was in elementary and secondary school. In those days schools didn’t fail, students failed. Whether we like it or not, whether or not this shift of responsibility is fair, educators are now expected to shoulder a larger share of the burden of responsibility for student learning. Education has been turned upside down; educators have a larger responsibility for results than ever before.

The twenty-first century is requiring human beings to know more, understand more, and be able to do more in order to survive and sustain a bearable, productive existence. It is not reasonable to ask educators to bring humanity to this higher level of education attainment without help, and especially armed only with the tools and capabilities we used in the twentieth century. But it is reasonable to ask them to lead. It is reasonable to ask them to stop complaining about higher standards. It is reasonable to expect them to embrace the challenges and work creatively to meet them.

If we must end poverty before we improve education we are doomed. The only way to end poverty is through education. The task facing educators is to be clear and focused about learning objectives, to become more creative and skillful at engaging students to learn joyfully, and to become more persistent and adaptive in helping each student realize the full extent of his or her potential. Of course, it will be harder to succeed if students are unwilling to work, if parents impose obstacles rather than support our efforts, or if the public fails to provide the financial resources we request to help us succeed. But our responsibility is to overcome obstacles, not to accept defeat because victory is difficult. It will be our responsibility if we fail.

References


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