AMERICAN EDUCATION SECOND TO NONE?
HOW WE MUST CHANGE TO MEET 21ST CENTURY IMPERATIVES

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You've heard, no doubt, that history rarely repeats itself, but it often rhymes. My assignment today is to talk about present and future challenges, but I propose to begin by reflecting on the history of education, especially higher education, in the United States.

As you know, education in America originally was and still often is thoroughly entwined with religion. The first colonial colleges in the United States were organized largely by religious leaders. Their mission, to provide higher education for community leaders, especially the clergy, was so important that the colonies initially provided direct public funding to Harvard, Yale, Dartmouth, and others.

But by the time the Bill of Rights was added to American Constitution the separation of church and state had become a well-accepted principle in the colonies. The founders of our nation, reflecting on the European Thirty Years War from 1618 to 1648, and perhaps their own experiences with religious conflict, decided that religious beliefs and the powers of the state should be separated. But while religious education was becoming a private concern, *general* education was becoming a public concern. In his 1787 *Notes on the State of Virginia* Jefferson advocated three years of free universal education. He believed that voters must be able to read, and that universal education would be essential for democracy to survive.

This was a radically democratic proposal. But Jefferson also believed in a natural meritocracy. So he proposed that, after three years of elementary education the "boy of best genius" (note <u>boy</u> of best genius) in each local school should be sent to one of twenty grammar schools for one or two more years of free education. Then the "best genius" in each grammar school would be given six more years of free education. Through this means, Jefferson wrote, "twenty of the best geniuses will be raked from the rubbish annually…." Finally the best ten of these twenty students would be given a three year scholarship to William and Mary. Note, only half of the 20 "best geniuses" qualified for a scholarship.

Jefferson's proposal illustrates the original purpose, and still the dominant cultural value in American higher education, the education of elites. We rank the quality of institutions by the degree of admissions selectivity, and we give the most financial aid to the strongest scholars and athletes. Skipping over seventy years or so, the next watershed event in American education was the establishment of Land Grant Colleges in 1862. Most people know that Abraham Lincoln was President when this happened, but it is important to understand more completely the historical context.

Early in his political career Lincoln opposed the expansion of slavery. While I imagine Lincoln thought slavery was morally wrong even as a young man, ending slavery was not clearly his primary motivation as young political leader. He was concerned about economic opportunity for ordinary white Americans, and he worried that the expansion of slavery would cheapen the value of labor, cut off opportunity, and eventually make all workers poorer. Economic opportunity was his top priority, and he and his fellow Whig politicians were strong advocates for canals and other public investments that would help the ordinary farmer and worker.

When the South left the Union, the departure of its Congressional delegation created opportunities for Lincoln and his colleagues to pass legislation to open the West more rapidly for development and advance the abilities and opportunities of ordinary American workers. They passed the Homestead Act which granted land to families who would farm and build houses on it, and the Pacific Railway Act of 1862 which laid the groundwork for the transcontinental railroad. Most importantly for our purposes, they passed the Morrill Act, which created land grant universities. (All of these had been proposed years earlier.) Their strategy for economic development rejected the exploitive model of slavery and focused public investment on the development of human talent and public infrastructure.

The Morrill Act did not diminish general education, it augmented it. To quote the Act, land grant universities should "without excluding other scientific and classical studies and including military tactics, [to] teach such branches of learning as are related to agriculture and the mechanical arts, … in order to promote the liberal and practical education of the industrial classes in the several pursuits and

professions in life." This was not merely an expansion of the curriculum, it was also an expansion of access to higher education to the "industrial classes."

Leaping forward another three-quarters of a century, the administration of Harry Truman took two dramatic steps to expand participation in higher education. First, the "Serviceman's Re-adjustment Act of 1944," popularly known as the GI Bill, provided financial support to enable WWII veterans to enroll in college, rather than line up for unemployment benefits. The GI Bill, immediately implemented, greatly advanced the education of the generation of Americans who served in WWII. It presumed that virtually every veteran could benefit in some way from further education. Despite some grumbling about quality within the higher education community, the veterans made good use of the opportunity.

In December 1947 the Truman Administration's Commission on Higher Education issued a report that was *not* immediately implemented, but which ultimately reshaped American higher education. The Truman Commission report said: *"American colleges and universities .... can no longer consider themselves merely the instrument for producing an intellectual elite; they must become the means by which every citizen, youth, and adult is enabled and encouraged to carry his education, formal and informal, as far as his native capacities permit" (Truman Commission, I, 101).*

In making the case for substantial federal and state investments in higher education the Truman Commission argued: *Higher education is an investment, not a cost. It is an investment in free men. It is an investment in social welfare, better living standards, better health, and less crime. It is an investment in higher production, increased income, and greater efficiency in agriculture, industry, and government. It is an investment in a bulwark against garbled information, half-truths, and untruths; against ignorance and intolerance. It is an investment in human talent, better human relationships, democracy, and peace" (Truman Commission, V, 26-28)."*

The Truman Commission proposed creating a system of community colleges and advocated federal and state planning and investments to increase educational opportunity and attainment in the United States. John Dale Russell, Director of Higher Education in the Office of Education during the Truman administration, played a central role in the Truman Commission report. In 1954, two years after

Truman left the White House, Russell convened state level leaders of higher education (there were only 11 at that time) to organize an association of state higher education executive officers.

In 1954 total higher education enrollment in the U.S. was 3.1 million, 1.9% of the total population, only 56% in public institutions, and 64% male. Total higher education spending was $2.9 billion, 0.8% of GDP. But Russell and the founders of SHEEO had a sense of what was coming. The demand for higher education was destined to grow exponentially, driven both by increases in population and the proportion of the population enrolling. The launching of Sputnik by the Soviet Union in 1957 amplified the impact of these forces. Postsecondary education became a greater public priority, and the object of exponential increases in public investment.

By 1975, when John Dale Russell died, the face of American higher education had changed dramatically. Total enrollment was 11.2 million, almost five times that in 1954. The enrollments represented 5.2% of the population (a quadrupling of the 1954 rate), with 79% in public institutions. Higher education was still mostly male, but the proportion of male students had dropped from 64% to 55%. And spending for higher education was 2.4% of GDP, three times the 0.8% share in 1954.

The numbers, the participation rate, and the diversity of students enrolled in higher education all continued to grow during the last quarter of the 20th century. By 2001 enrollments reached 15.9 million, 5.6% of the U.S. population, and more than half (56%) of the students were women. Black and Hispanic enrollments accounted for nearly 21% of enrollments in 2001, up from less than 13% in 1975. The percentage of 18-24 year olds enrolled in college jumped from 26.3% in 1975 to 36.3% in 2001.

As we entered the 21st century, the enormous growth of higher education continued and even accelerated. In 2009 enrollment reached 20.4 million, 6.7% of U.S. population. The enrollment growth rate from 2000 to 2010 is higher than in any decade since 1960. And the American student body continues to become more and more diverse.

So education, and higher education in particular, has become much more important in American life. In the 20th century the American people became far better educated than ever before, better educated than the people of any other country. All that educational progress yielded unprecedented

innovations, economic progress, and increases in our standard of living. It has been good. It has been impressive. But what we have achieved in the past is no longer good enough.

In 1983 Ronald Reagan's Secretary of Education Terrell Bell raised alarms about the quality of education in America by releasing the report "A Nation At Risk." "A Nation At Risk," launched three decades of educational reform. And we are still at it. You might think thirty years would be enough time to figure this out. But it turns out that the job we must do in the 21st century is big and difficult.

Higher Education: from optional to essential

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 life style working in low-knowledge jobs.

Now those jobs have moved off-shore and higher education is essential. Manufacturing jobs and most service jobs now require more sophisticated knowledge and problem solving skills. Virtually all of the job growth in the past 40 years in the U.S. 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% in 1980 to 81% 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.

These three graphics illustrate how the workforce has changed. First, from 1964 to 2008 the share of jobs in the U.S. held by workers with a high school education or less dropped from almost 80% to 41%. Second, 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 bachelors degree doubled, and the number of workers with a bachelors degree grew from 8 million to

28 million. That trend is continuing. Third, better educated workers have weathered the "Great Recession" far better than others. People with bachelors degrees actually gained 187,000 jobs during the recession and an additional 2 million jobs during the recovery from January 2010 to February 2012. Those will a high school diploma or less lost 5.6 million jobs in the recession, with no recovery by February 2012.

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 21st 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 Ph.D. 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.

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 socioeconomic status. The most worrisome differences are for the large number of average students, those with an SAT 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 28. 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.

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 a family history in higher education.

<u>Churning, almost chaotic public policy</u>

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. Without elaboration, let me mention some of what we have been experiencing:

1. The accountability movement, No Child Left Behind

2. Making Opportunity Affordable
3. The Spellings Commission
4. President Obama's goals for increasing postsecondary attainment
5. Complete College America
6. Performance funding in vogue, …… again
7. Common Core State Standards and assessments for college and career readiness
8. The merger of NCATE and TEAC into CAEP
9. The Chief State School Officers proposing dramatic changes in teacher licensing and preparation program approval
10. Chiefs for Change
11. Accountability for student learning
12. Value added teacher evaluations
13. The Degree Qualification Profile
14. Split personality educational reform – more regulation (standards, pressure on accreditors) along with less regulation (vouchers, charter schools)

The welter of policy initiatives is 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 - 2005 SHEEO organized a national commission on accountability in higher education. The Commission was chaired by former U.S. 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 1990's, 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 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 curriculum 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 for college and career readiness respond to nearly two decades of failed "standards based reform." They recognize 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 been around awhile, I was stunned by the number of states who quickly decided to adopt them.

The decades-long "assessment movement" in postsecondary education is also maturing. Its acronyms (VSA, VFA, NSSE, CCSSE. 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. The key elements are:

1. Clear instructional objectives and intentions help both teachers and students.
2. It is difficult to improve something one does not measure.
3. Students, faculty, and others must find assessments authentic and credible.
4. 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 soon to be concluded OECD 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 road map for that work, but I'm fairly certain that it should include: A) Examples of intellectual work – writing, problem solving, creative products – reliably evaluated by experts; B) A reasonable assessment of the elements of knowledge and skill that are subject to standardized tests; C) A much greater emphasis on formative, rather than summative assessments; and D) 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 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 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 SCH 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: When New Technologies Cause Great Firms to Fail?,* 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 27 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 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. 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.

1. The demand for higher education on a universal scale is undeniable.
2. 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.
3. 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.

4. 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.

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 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 technology in education, 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 re-invent instruction.

I'll make 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:

1. Providing on-line access to top quality lectures and other course materials;
2. Leading real-time, on line seminar discussion sections with students in geographically dispersed locations;

3. 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);
4. Collaborating on the curriculum of entire degree programs and delivering it both traditionally and on-line to distance learners (University of Southern California MSW and MAT programs);
5. Developing data bases 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.
6. 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.
7. And 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 curriculum and delivering instruction. The foundation for wide-spread 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.

Turning Education Upside Down

My friend Jim Cibulka 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 policy makers 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 21st 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 20th 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 accept defeat because victory is difficult. It *will* be our responsibility if we fail.

Conclusion

I'd like to close by reflecting on where we've been and where we might be going. About 100 years ago, in *Ulysses* James Joyce had one of his characters say: "History is a nightmare from which I am trying to awake." In *An Outline of History*, a few years later H.B. Wells wrote: "History becomes more and more a race between education and catastrophe."

These quotes reflect the history both writers knew, and perhaps the future they anticipated. It is difficult to get much optimism from Joyce, but Wells, at least, hoped that education might avert human catastrophe. So a century later, let's take stock. We've added several horrific chapters to the nightmare of human history, but as we race against catastrophe, we've also made some progress.

By the time of World War II, primary education was universal in much of the developed world, and secondary education was common. At the end of the World War II the United Nations was created, the Truman Commission envisioned virtually universal higher education, and the GI Bill provided unprecedented access to postsecondary opportunity. In the United States two generations have benefited from these initiatives; we still have great problems, but on the whole the world is a better place.

As we enter the 21st century the United States is struggling to regain, or sustain its world leadership in postsecondary education. Considering what that implies about progress around the globe this is wonderful news. Of course we face challenges, but given the heritage we've been given, we have both the resources and the responsibility to meet those challenges.

I'll close with a quote from Abraham Lincoln, who preserved the union and invested public funds in opportunity and the prosperity of future generations through the Morrill Act, the Intercontinental Railroad, and the Homestead Act. "The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew and act anew."

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