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Where Completion Goes Awry: The Metrics for “Success” Mask Mounting Problems with Quality

While the United States is still among the top five most educated nations internationally, it has slipped to fifteenth in terms of the rate of college completion for Americans aged twenty-four to thirty-five. This unhappy development—so at odds with our history of international leadership both in college-going and in world-class postsecondary institutions—has rightly been taken as a wake-up call. With vigorous leadership from policy centers and major philanthropies, educators now are intensely focused on reversing this downward trend. Completion and productivity initiatives are cascading, and new performance incentives for improved degree production are being unveiled in one state system after another.

Our nation’s future does indeed depend on developing all Americans' talents to the fullest extent possible, and the Association of American Colleges and Universities (AAC&U) has been strongly committed to that goal since we first launched our Greater Expectations initiative (the forerunner of our current Liberal Education and America’s Promise, or LEAP, endeavors) over a decade ago. In the opening pages of the 2002 Greater Expectations report, we noted the evidence that college has become a “revolving door” for entirely too many students, at high cost to their hopes for the future and to society’s need for a well-educated citizenry. In that spirit, we have welcomed the intensified focus on student success and completion, which AAC&U’s board of directors embraced in an official statement released in 2010.

What the AAC&U board said then, however, remains true today: the intense national commitment to increased college attainment needs to be matched by an equally intense focus on quality or, more specifically, on the kinds and levels of learning that degree attainment is supposed to represent. Completion ought reliably to mean that students have demonstrated—cumulatively, over time—their acquisition of the knowledge and skills they will need for the complex and fast-changing challenges of work, citizenship, and contemporary life.

Unfortunately, however, the completion agenda is steaming ahead without setting either goals or markers for educational quality. As the authors in this issue of Liberal Education make patently clear, when we create incentive systems for enhanced degree production, with no questions asked about the sufficiency of learning, the door is literally wide open to choices that deplete rather than build educational quality. The articles on completion we share in these pages are thoughtful—and sobering. One foundation is already sharing Debra Humphrey's lead article with its productivity grantees. I hope this issue will open a candid dialogue and invite a much needed policy “do-over” designed to make quality the driver for completion and productivity.

As national studies on “high-impact practices” make clear, higher education already has invented a raft of learning-intensive programs and pedagogies that, the evidence shows, can simultaneously lift both completion rates and student achievement of key skills such as writing, research, and analytical reasoning. There are well-tested models for deploying technology not for course delivery, but in support of high-order student inquiry and achievement. The question is whether we’re willing to use the knowledge we already have to create incentives for high-quality learning as well as incentives for increased degree production. It shouldn’t be an either/or choice; we can do both.

In what follows, I offer my own observations on where the completion and productivity agendas have gone awry, and on how we can actually achieve those greater expectations.
The credit hour as a proxy for quality

The term “quality” is scarcely even mentioned in most of the abundant policy materials that frame the nation’s current efforts on completion and productivity. Even when invoked, quality is never defined. Policy statements at all levels promise solemnly that costs can be cut and graduation rates raised “with no compromise of quality,” of course. But absent meaningful reference points—or incentives—for the demonstrated achievement of quality, warnings against its erosion are empty at best. The real message seems to be “more degrees, cheaper and faster” with no questions asked about what the degree represents.

Absent meaningful markers for quality, the real proxy for progress on completion and productivity has become, de facto, that hardy but hoary invention of the early twentieth century, the course credit hour. Established over a century ago, in the heyday of the industrial assembly line, and given a significant boost forward when Carnegie Foundation for the Advancement of Teaching promoted it, the credit hour signals the purported combination of students’ time spent in class plus the time spent outside of class learning course-aligned material.

Freshened up and sometimes disaggregated (by student subgroup and/or income), the credit hour is now the marker of choice for reporting progress on persistence, retention to the next level, transfer of courses from one institution to another, and, of course, degree attainment itself. It is our de facto proxy for quality. But as a proxy, it both protects and disguises subprime performance.

Employers are pleading with colleges and universities to build higher levels of American capability. Yet, credit hour production tells us only about “efficient through-put” and, when used in productivity analysis, the comparative costs of different degrees. Credit hours tell us absolutely nothing about what students are even doing in a course, much less about their levels of achievement. Does the course require extensive writing? Research? Projects? Team problem solving? Applied learning? Or just coasting and exam-time cramming? The federal government has recently blown the whistle on courses that meet too briefly for the credit hours awarded. But frankly, this is a small part of a much larger problem.

The credit hour is equitably awarded for high-impact learning and low-impact activity alike. It is our coin of exchange. When it comes to actual quality, however, the credit hour effectively hides rather than reveals. And yet, incentives for increased credit production—at lower cost—have become the strategy of choice for making America once again the “first in the world.”

The mounting evidence on the quality shortfall

As this association has insisted for a decade—and as this issue of Liberal Education insists once again—the real key to economic opportunity and advancement depends not on whether the student possesses a credential, but rather on whether students actually leave college with that rich portfolio of learning that employers seek and society urgently needs: broad knowledge, strong intellectual and practical skills, grounded commitments to personal and social responsibility, and demonstrated capacity to deal with complex challenges.

The facts are stark. As ACT annually reports, only one in four students who enroll in college is well prepared to be there. Most need help to recover from an inadequate foundation—in math and science, history, global cultures, languages, critical thinking, writing and problem solving, even in basic civics—from a school curriculum that is simply not strong enough. Or, enrolling students have been out of school for a while and need to strengthen basic skills that they may not have used in years. Or, the college students may be second-language learners and need a lot of support to make the transition to college-level learning in their new tongue.
While we would like to believe that college helps all these short-changed learners get up to speed, there is overwhelming evidence that many college seniors graduate still lacking essential capacities that they need for work, for citizenship, and for lives of continuous learning. These graduates—“successful” in their acquisition of the right number of course credits—possess credentials, but they have not achieved the kinds of learning that a degree should represent.

Not long ago, Margaret Spellings and entire platoons of policy leaders all were urging higher education to take responsibility for assessing students’ actual learning in college. And, in fact, higher education has been doing that assessment. There now is a raft of highly creditable studies—including a synthesis of research on learning compiled by former Harvard President Derek Bok—probing different aspects of students’ learning in college. Later this year, AAC&U will publish its own synthesis of “what is known” about students’ progress on the essential learning outcomes that we have emphasized through our LEAP initiative.

What do these studies actually tell us? Colleges are “underachieving,” says Derek Bok. Students are making small gains or even declining on several key measures of learning outcomes, say the scholars doing a longitudinal study of student achievement through the Wabash Center of Inquiry in the Liberal Arts. In 2006 and 2007, 14,000 seniors earned an average grade of F in a test of basic civic and historical knowledge, reports the Intercollegiate Studies Institute. Graduates lack global knowledge and are weak on key competencies such as writing and critical thinking, say employers surveyed by Hart Research Associates for AAC&U. There have been few documented gains in the level of student learning since our 2005 report on Liberal Education Outcomes, AAC&U’s forthcoming synthesis of the evidence concludes.

The “preponderance of the evidence,” as AAC&U’s own director of assessment puts it, shows us that many students do indeed complete college without actually achieving the high-level capacities and complex knowledge that a liberal—and liberating—education ought to provide.

The completion and productivity juggernaut pays no attention to any of this. At best, it kindly assumes that if students gather the right number of course credits, “success” has been achieved by definition. At worst, productivity enthusiasts are looking for ways to accelerate “degree production” by focusing on narrow, technical training credentials tied to specific “labor market signals and needs,” while paring back or eliminating entirely the broader education and higher-order intellectual skills that have long been the key to our world leadership in postsecondary education. This may help us increase throughput, but it perversely defeats the entire project of helping Americans achieve higher levels of knowledge and capability.

**What can be done to provide twenty-first-century quality markers?**

While there is good reason to sound the alarm bells about both the existing quality shortfall and the policies likely to worsen it, there also is reason for hope. Just a year ago, the Lumina Foundation released in beta form—for widespread experimentation and testing—the Degree Qualifications Profile (DQP), a twenty-first-century quality framework that is intended to provide the quality markers higher education so urgently needs. Today, the DQP is being tested and evaluated in a suite of Lumina-supported projects organized by national associations, including AAC&U, and by some of the accrediting associations. Over one hundred highly diverse colleges, community colleges, and universities—public and private—
already are involved in testing the DQP for a broad array of purposes, from curriculum design to assessments of students’ cumulative learning to transfer. Other campuses are “shadowing” the grant-funded projects, using the DQP for their own purposes. The new CUNY community college, for example, has used the DQP to design its entire curriculum and, in fact, has significantly improved on the source document.

As one of the authors of the draft DQP, I am truly pleased that Lumina is inviting the entire educational community to become part of a meaningful discussion about the right reference points for quality. I am also very pleased that the current content of the DQP reflects the views of the AAC&U community about the essential aims and learning outcomes—or, in DQP terms, competencies—needed for success in the economy and to contribute to a flourishing democracy. The DQP emphasizes the importance of broad as well as specialized learning for degree earners at the associate’s, bachelor’s, and master’s levels. It calls for students to develop intellectual skills that faculty value and employers seek. It makes preparation for democracy—civic learning—an expected component of all degree programs. It calls for students to integrate their learning across disciplines, in general education and majors, and to apply that learning to complex, unscripted questions. And it argues that the actual test of a twenty-first-century education is whether students can apply their learning to new settings and complex problems. This is liberal education in contemporary form, albeit now a “rose by another name.”

Many worry almost reflexively that a framework of this sort will be constraining. But, in fact, the framing of this document is intended to apply to a wide array of academic content and curricula. At the heart of the vision of the DQP is an insistence that once we know what students are supposed to accomplish, there are a multitude of ways to develop and certify their achievement.

But how is DQP achievement actually certified? What I personally like best about the DQP is that it builds directly from the evidence-based research on the value of high-effort, high-engagement practices in fostering student achievement and supporting student persistence in college. If you read the DQP carefully, you’ll see that, again and again, it places students’ effortful work at the very center of the assessment equation. Projects, research, writing, performances, portfolios—course-based and field-based—are the centerpiece of DQP assessment. The idea is simple. As a group, faculty plan the kind of robust assignments and tasks that will enable students to develop knowledge and competency in their fields. Faculty then evaluate, at milestone moments, whether students are demonstrating the expected level of learning. Our own Lumina project will experiment, across nine state systems and at two-year and four-year institutions, with effective ways to document graduation-level achievement and ways to report it externally that are accessible, transparent, and persuasive.

How would we tie these DQP innovations back to the completion agenda? I believe the answer is to create incentives both for students’ timely completion and for evidence of students’ demonstrated achievement in relation to Degree Qualifications competencies. We already know that students’ engagement in high-effort, high-impact work helps keep them in college. If we can link demonstrated DQP achievement—anchored in exactly the kind of effortful student work that supports both persistence and learning—to the new completion and productivity incentives, we will produce the completion agenda “do-over” higher education urgently needs.—CAROL GEARY SCHNEIDER
This issue focuses on the completion agenda, that more or less coordinated effort to achieve the national goal of increasing—significantly and quickly—the overall number of college graduates in the United States. From campus, state, and national perspectives, the Featured Topic section provides an overview of the various policies and proposals designed to improve graduation rates and increase the efficiency of degree production, and examines some of the negative unintended consequences that may result from their implementation. The overarching concern expressed by the authors is that, unless it is complemented by sustained attention to educational quality, the completion agenda could undermine the progress currently being made to ensure that all students attain higher levels of achievement on an array of important twenty-first-century learning outcomes—that is, to ensure they receive a high-quality college education that responds to our nation’s contemporary economic and social needs.

It may seem ironic for the higher education community to resist aspects of the completion agenda. For government and philanthropy to join together in seeking ways to get more students into and (more quickly) out of college is, at one level, a show of confidence in American higher education: “We value what you do, and we want you to do more of it.” Yet, although speed and efficiency may be the watchwords of certain phases of industrial production, colleges and universities are not degree factories. The application of managerial principles unsuited to the enterprise would almost certainly be counterproductive, ultimately devaluing the college degree by lowering the quality of the education it represents.

Proponents of the completion agenda believe that the United States must regain its lost standing as the country with the highest proportion of college graduates. The authors in this issue agree, but with the added proviso that we must simultaneously strive to ensure that those graduates are all truly prepared for participation in both the global economy and the civic life of the nation, and that they are equipped with the knowledge and skills that support the lifelong learning needed to sustain success in both spheres. In other words, as Scott Evenbeck and Kathy Johnson put it, “the increase in the number of degrees [must] be an increase in high-quality degrees.”—DAVID TRITELLI
AAC&U President Speaks at White House Event on Civic Learning

On January 10, AAC&U President Carol Geary Schneider joined Under Secretary of Education Martha Kanter at the White House to present findings and recommendations from A Crucible Moment: College Learning and Democracy’s Future, a new report on the civic mission of higher education. Responding to widespread concern about the nation’s anemic civic health, the report calls for investment in the capacity of higher education to replenish the nation’s social, intellectual, and civic capital.

President Schneider is one of eleven members of the National Task Force on Civic Learning and Democratic Engagement, which authored the report. At the invitation of the US Department of Education, and under the joint leadership of the Global Perspective Institute and AAC&U, A Crucible Moment was shaped through a series of national roundtables that involved leaders from all parts of the civic renewal community. The full report is available online at www.aacu.org/civic_learning/crucible.

Kentucky Becomes the Seventh LEAP State

In December 2011, AAC&U and the Kentucky Council on Postsecondary Education announced that Kentucky had become the seventh official state partner in the Liberal Education and America’s Promise (LEAP) initiative. Using LEAP resources, colleges and universities in Kentucky already had been working to clarify the common learning outcomes expected of all two-year and four-year college students in the state. Additional information about LEAP Kentucky is available online at www.aacu.org/leap/kentucky.cfm.

AAC&U to Launch New NEH-Funded Project

The National Endowment for the Humanities (NEH) has awarded a $360,000 grant to AAC&U and the Democracy Commitment, a new community college network focused on civic learning and agency. The funding will support a three-year curriculum and faculty development project called Bridging Cultures to Form a Nation: Difference, Community, and Democratic Thinking. In this project, twelve competitively selected community colleges will work to advance four goals: (1) to infuse questions about difference, community, and democratic thinking into high-enrollment transfer courses in the humanities; (2) to promote greater adoption of proven high-impact practices; (3) to create a series of humanities-enriched professional development opportunities for community college faculty, especially adjunct faculty; and (4) to expand faculty involvement through collaboration with additional community colleges and partnership with state humanities councils.

Upcoming Meetings

- February 23–25, 2012
  General Education and Assessment: New Contexts, New Cultures
  New Orleans, Louisiana
- March 22–24, 2012
  Student Success: Pushing Boundaries, Raising Bars
  Seattle, Washington
- June 2–6, 2012
  Institute on General Education and Assessment
  The Hotel at Turf Valley, Ellicott City, Maryland
- June 19–23, 2012
  Institute on High-Impact Practices and Student Success
  Portland State University
- July 11–15, 2012
  Institute on Integrative Learning and the Departments
  The University of Vermont
- July 17–22 and July 31–August 5, 2012
  PKAL Summer Leadership Institutes for STEM Faculty
  Baca Campus of Colorado College

AAC&U MEMBERSHIP 2012

1,263 members

DOC 17%
ASSOC 11%
Masters 31%
Bacc 25%
Other 16%

*Specialized schools, state systems and agencies, international affiliates, and organizational affiliates
This article addresses the broad-based reform movement led by state and federal policymakers and designed to increase dramatically the number of students graduating from our nation's colleges and universities. This movement—known as "the completion agenda"—aims to collect more and better data about students' educational progress toward degrees, to enact new policies that incentivize increased graduation rates and improve the efficiency of degree production, and to tie funding to increased completion rates.

Rooted in the increasingly tight linkage between educational attainment and success in the global economy, external pressure on higher education to increase the numbers of college graduates has been building for decades. As part of this pressure, President Obama (2009) set an ambitious goal in his very first State of the Union address: "By 2020, America will once again have the highest proportion of college graduates in the world." The president noted that, "in a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity—it is a prerequisite" and that "every American will need to get more than a high school diploma."

The Department of Education, many leading foundations, and many policy organizations have taken up President Obama's challenge. Unfortunately, the ensuing completion reform movement was launched in the midst of a severe economic downturn and after years of demographic shifts and educational shortfalls at both the K-12 and higher education levels. College access and completion have been stunningly stratified by income and by community of origin for many years. At least three out of four students who make it to campus are underprepared to succeed there (ACT 2011), and many need serious remediation to bring their skills and knowledge up to college levels. A significant number of these students are working, often carrying the kind of workload that studies show is correlated with high levels of failure to complete. And due to weaknesses in data tracking, far too little is known about transfer students; graduation rates, therefore, are only approximations. Turning this ship around will be challenging indeed.

The enormity of the challenge posed by these obstacles would seem to call for greater investment in both K-12 schooling and, especially, public higher education in order to increase the numbers of students prepared for and graduating from college. Yet funding for higher education has been trending in just the opposite direction for many years, and

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the recent economic contraction has only accelerated the plummeting of public subsidies. As a result, the actual costs of college are rising inexorably for students. The cost shifting—from the public to individual students and their families—has made cost, rather than either completion or the quality of learning, the dominant public concern. Elected officials at the state level also are faced with increasingly tough budget choices, and thus the completion agenda has morphed into a more-completion-at-less-cost agenda. This movement is poised to have a profound effect on how colleges and universities throughout the country operate. Unfortunately, it has become too narrowly focused; whereas society and the economy need “more and better,” policy leaders are trying to deliver “more and cheaper.”

Completion initiatives
All the current completion initiatives are responding to a larger environment characterized by the globalization of the knowledge economy. Members of the public understand the broad trends and are flocking to colleges and universities in order to increase their chances of succeeding in a rapidly changing economy. Too few of them, however, are completing college and, unfortunately, the United States is currently projected to be, by 2018, at least three million college-educated workers short to meet projected demand (Carnevale, Smith, Strohl 2010). While the challenge of educating an additional three million students well is complex, most completion reform efforts are focused simplistically on only one issue based on one data set that demonstrates that many students—especially those attending two-year institutions, for-profit institutions, and some state colleges and universities—do not “cross the finish line” in a reasonable amount of time (i.e., six years). This is actually true both for students who enter college clearly underprepared for its rigors and for those who have the appropriate levels of preparation but, for a variety of reasons, never complete their degrees. In response, an enormous part of the completion agenda has been directed exclusively at increasing “on-time” completion rates.

For example, the Complete to Compete initiative launched by the National Governors Association (NGA) Center for Best Practices in 2010 focuses primarily on promoting better data collection to track student progress through state higher education systems. One of the theories of change underlying this initiative holds that if institutions and states better understood how students are making their way through public systems, educational and policy leaders could and would improve the efficiency of those systems. Accordingly, the NGA is urging states to implement new performance funding systems that tie institutional funding to completion rates rather than initial enrollment figures alone. This approach, which has been tried with limited success in some states, is intended to incentivize institutions to graduate more of the students they admit (Lederman 2011). Better data are indeed important, but we need an even fuller set of data on both graduation rates and student achievement in order to meet the needs of the twenty-first-century economy.

Complete College America (CCA), an independent initiative currently involving twenty-nine states, is providing new models for data collection—and, thereby, informing the NGA effort. Yet, thus far, these models still focus only on “time to degree” rather than on completion with assurance of demonstrated achievement. In the CCA, participating states are required to commit to a comprehensive set of reforms that include streamlining curricular offerings and implementing strict performance funding strategies tied to completion rates.

Several large foundations—most notably the Bill and Melinda Gates Foundation and the Lumina Foundation for Education—are also funding dozens of initiatives designed to increase productivity and completion rates through projects to improve data collection, streamline requirements, increase the effectiveness of remedial or developmental education programs, expand the use of various student success strategies, increase the use of online learning, and test strategies to increase the rates by which students in two-year institutions transfer successfully to four-year institutions. Of course, all these initiatives depend on other efforts to increase the number of high school graduates who are prepared to succeed in college. Yet, many of them rest on the simplistic assumption that the causes of low graduation rates are primarily a matter of neglect, lack of awareness, misplaced priorities, or incompetent leadership. The assumption that underlies specifically the proposed performance
The funding policies is that, if money isn’t explicitly tied to graduation, educators and leaders won’t focus on the issue because they just won’t pay attention or they just don’t care whether their students actually graduate. The problem is more complex than these assumptions suggest.

It should be a national priority to pursue productive approaches that help different groups of students stay in college and graduate on time, and we absolutely should make policy changes and devote more resources to support them. We should not, however, underestimate the challenges to reaching these ambitious goals. Data and leadership matter, but so do resources—both financial and human. At present, private foundations are the only source of additional resources for these efforts. Funding for higher education is being reduced in most states. It is safe to assume that funding levels will remain low, at least in the short term, and probably will continue to decline, especially at public colleges and universities (AASCU 2011). Under these circumstances, we do indeed have to tackle these issues with the same or fewer resources. But we also must attend simultaneously to the serious quality of learning shortfall that threatens to get even worse if we maintain an exclusive focus on completion and efficiency.

**The quality shortfall**

Many policy makers are missing the fact that the projected shortfall in college-educated workers is a result of today’s workplace requiring a broader set of skills and higher levels of learning than ever before. The Board of Directors of the Association of American...
Colleges and Universities (AAC&U) recognized this broad trend in its 2010 statement, *The Quality Imperative*, noting that “the quality shortfall is just as urgent as the attainment shortfall” (1). There are, in fact, two dimensions to the quality shortfall. First, too many students are making little or no progress on important learning outcomes while in college; second, the increasing complexity of our world is adding to what a well-educated person must know and be able to do. Drawing on the findings from recent research commissioned by AAC&U, Carol Geary Schneider (2010) has noted that “success in today’s workplace requires achievement in at least six new areas of knowledge and skill development, which have been added to the already ambitious learning portfolio required in earlier eras.” Employers themselves are, for instance, asking for greater emphasis on such traditional outcomes as “communications, analytic reasoning, quantitative literacy, broad knowledge of science and society, and field-specific knowledge and skills.” They are also asking for graduates with high levels of “global knowledge and competence; intercultural knowledge and skills; creativity and innovation; teamwork and problem-solving skills in diverse settings; information literacy and fluency; and ethical reasoning and decision making.”

Even as the list of expected areas of knowledge and skill development expands, evidence is mounting that many college students are graduating without appropriate levels of achievement in these essential areas of learning. Only between 5 and 10 percent of college graduates have experienced even minimal global learning (Adelman 2004), for example, and more than 35 percent of college students are making minimal or no gains in their critical thinking and writing skills over their four years in college (Arum, Roksa, and Cho 2011). Employers’ overall assessment of higher education reflects these data: only about a quarter believe that colleges and universities are effectively preparing students for the challenges of today’s global economy (Hart Research Associates 2010). Ignoring these realities of the new knowledge economy has caused a dangerous distortion of priorities in education policy making. Many policy makers, for instance, are focused so exclusively on increasing the numbers of degrees or certificates that they are shifting resources to existing short-term training programs that lead to narrowly focused certificates. This focus misses the fact that although these narrow
training programs may be cheaper to provide initially, they actually depreciate in value to the student and the economy.

While the economy may need more workers with the sort of technical skills that are potentially provided by well-crafted two-year programs, evidence suggests that even these workers need a fuller set of skills and abilities than traditional vocational training programs provide. A recent study by the National Bureau of Economic Research, for instance, documents that, "while the skills students learn from a vocational education may ease their transition into the labor market . . . those initial labor-market advantages fade as workers age. The study found that individuals with a general education are more likely to be employed at age 50 than are those with a vocational education. A general education was particularly helpful in countries that experienced faster economic growth and larger technological change" (Inside Higher Ed 2011). At all levels, then, the economy may be demanding more workers with higher education degrees or certificates, but it is also demanding that all workers have broader knowledge and skills as well.

On its own, remedying this quality shortfall is a significant challenge. Getting the large number of students who are at risk of dropping out of college to increase their achievement levels and graduate on time presents a still greater challenge. Rather than addressing both of these challenges, however, policy makers seem to assume that all students who cross some “finish line” have actually learned what they need to compete successfully in the global economy and contribute to rebuilding our democratic society. Abundant data suggest that this assumption is simply false (Arum and Roksa 2011; Pascarella et al. 2011; AAC&U 2005; Hart Research Associates 2010). The truth is that colleges and universities are struggling to educate a larger population of students, many of whom are underprepared for and unmotivated to work hard at college-level learning at exactly the moment when society and the global economy are demanding even higher levels of learning from everyone.

The dangers of a completion-only approach
Why shouldn’t we focus our efforts on creating incentives to increase the number of students prepared for college and the number who ultimately “cross the finish line”? Clearly, we should do this. But it is not the only thing we should do.

As an illustration of the dangers of a completion-only agenda, consider the so-called STEM fields (science, technology, engineering, and mathematics), which represent one area of the economy where the shortages of well-educated college graduates are most acute. President Obama focused specifically on these fields in his 2011 State of the Union address, noting that “the first step in winning the future is encouraging American innovation.” As he put it, “we need to out-innovate, out-educate, and out-build the rest of the world.” Comparing the United States to other nations, the president focused on how “nations like China and India [have] started educating their children earlier and longer, with greater emphasis on math and science,” and he then called for “100,000 new teachers in the fields of science and technology and engineering and math.”

In a blog posting published on the website of the Atlantic Monthly a week after Obama’s speech, Lane Wallace (2011) made the important point that, as he put it, “Innovation Isn’t About Math.” We could respond to the STEM shortfall just by pushing more and more students into math and science fields—creating, for instance, incentives that encourage them to major in those fields. We could even streamline the requirements in those fields and reduce the requirement that STEM majors take general education courses in other areas, such as history, art, literature, and global studies. Yet, these approaches miss an essential piece of the puzzle. As Wallace pointed out, “innovation experts and consultants stress repeatedly that innovation isn’t a matter of subject knowledge. It’s about thinking in flexible, integrative, and multidisciplinary ways, across many fields and types of knowledge. It’s about being able to synthesize and integrate different perspectives and models; of understanding and taking into account different human, cultural and economic needs, desires, values, and factors, and, from all that, glimpsing a new way forward that nobody else managed to see.” We need to go beyond just helping more students make their way through the same old STEM curricula, or through more streamlined curricula. Instead, we need radically to change how STEM fields are taught, and we need to connect learning in those fields with a
wider array of subjects taught through more integrated general education and major programs.

Employers are calling on colleges and universities to focus on educational practices that require students to do research projects and apply what they are learning in real-world settings. Eighty-four percent of employers believe that expecting students to complete a significant project that demonstrates their depth of knowledge in their major and their acquisition of analytical, problem-solving, and communication skills would help prepare them for success in the global economy. Eighty-one percent of employers believe that expecting students to complete an internship or community-based field project to connect classroom learning with real-world experiences would also help (Hart Research Associates 2010). These kinds of practices have the potential to increase students’ achievement of essential learning outcomes, but they are not necessarily consistent with calls to reduce requirements or streamline curricula. And to focus exclusively on the number of courses or credits required or available to students is likely to miss completely the need for more students to experience more integrative and engaged forms of college learning.

Instead of exploring ways to increase students’ exposure to deep learning, research, and real-world applications of learning, colleges and universities are facing strong pressure to move in the opposite direction. Instead of reinventing their general education programs to make them more integrated and inclusive of real-world and applied learning, institutions are seeking to increase graduation rates by “outsourcing” general education to high schools or are encouraging their students to “get general education out of the way” by picking up a course here or there on the Internet. Individual institutions and state systems are reverting back to Cold War–era general education curricula focused on broad but shallow exposure to different disciplines.

Two further examples illustrate this troubling potential downside to a completion-only agenda. As anyone who has followed the various institutional ranking systems based on limited data can attest, any system that uses simplistic data (e.g., completion rates or alumni giving rates) and attaches high stakes to the publication of those data invites manipulation of the data. A recent case illustrates this danger. An internal investigation at Edison State College in Florida recently found that about 75 percent of students in three programs were allowed to substitute elective credits for required courses in order to ensure that these students graduated on time and were able to transfer into bachelor’s degree programs. The Inside Higher Ed article reporting on this investigation notes, rightly, that “with policy makers in Washington and foundation officials placing so much emphasis on improving college completion and graduation rates, observers worry that what happened at Edison State College could become more common in the future if quality controls aren’t enacted” (Kiley 2011).

Scott Jaschik recently reported on a set of presentations made by community college faculty members at the 2011 meeting of the Modern Language Association. In the session, “English professors talked about their concerns that . . . standards may be eroded in the push under the national ‘completion agenda’ to get more students through.” Jaschik reported the particular concerns of Steven Canaday of Anne Arundel Community College in Maryland, who noted that, like many community colleges, Anne Arundel “recently announced a commitment to double by 2020 the number of degrees and certificates it awards. English instruction is viewed as key because everyone must pass first-year composition to earn an associate degree.” One idea being discussed in Canaday’s English department is “that the composition course end its requirement of a research paper.” Canaday acknowledged that “ending the requirement would probably result in more people passing” (Jaschik 2011). Given what employers have said about how useful it is for students to do research projects in order to prepare for success in the workplace, this potential shift in teaching practice and classroom assignments could significantly reduce students’ skills and abilities while simultaneously increasing their likelihood of graduating.

Obviously, no one involved in advancing the completion agenda is deliberately seeking to improve completion rates by lowering student achievement. Yet this is the likely
outcome of many of the completion-only proposals, which raises the question: Is it really possible simultaneously to improve college completion rates and student achievement of essential learning outcomes? The contours of a promising new “completion-plus” agenda suggest that it is.

What does a completion-plus-quality approach require?
The completion agenda is driving states and institutions toward more comprehensive and nuanced frameworks for collecting data—college readiness and remediation rates, transfer rates, graduation rates, and so forth. Policy makers are devising systems to hold institutions accountable for reaching new targets on the basis of these metrics. Rather than hastily implementing untested high-stakes accountability systems based on limited data, however, we should couple these more comprehensive data-collection frameworks with more comprehensive frameworks for defining—and collecting data on—the quality of student learning. Only then, using both sets of data together, will it truly be productive to hold institutions accountable for needed improvements. Funding should only be shifted in order to invest in proven strategies that increase both student achievement and rates of completion. How can this be done?

Start with clarity about learning outcomes.
Many colleges and universities now have a common set of expected learning outcomes for all students (Hart Research Associates 2009). Colleges and universities must continue to calibrate these learning outcomes to their missions and to twenty-first-century needs, clarify what specifically is required of every student in order to earn a degree, and communicate clearly to students what is expected of them. Many institutions and state systems are using a set of “essential learning outcomes” developed as part of AAC&U’s Liberal Education and America’s Promise (LEAP) initiative to advance this work much more systemically than ever before (Carey 2011). The recently released Degree Qualifications Profile developed by the Lumina Foundation for Education (2011) will also help institutions refine their definitions of required learning outcomes and specify demonstrated accomplishments at different levels of learning. With greater clarity about outcomes and levels of learning, institutions can more confidently and efficiently facilitate student mobility and progress both within and across institutions.

Without inappropriately prescribing outcomes or requirements, policymakers should insist that institutions operating in a given state or receiving state or federal funding actually have clearly defined learning outcomes that are well calibrated to institutional missions and twenty-first-century demands.

Ensure that all students experience “high-impact” educational practices. Defining outcomes is only the first step toward increasing achievement. Policy change ought to be guided by new knowledge about how people learn and which specific practices really work. Several “high-impact” educational practices have been proven to increase levels of student achievement and to increase the chances that students will graduate on time. This emerging body of research, moreover, demonstrates that these practices produce positive results for students from a wide array of backgrounds, including first-generation and underrepresented minority students. High-impact practices such as first-year seminars, learning communities, undergraduate research, service learning, and capstone courses appear to increase retention rates, graduation rates, and the achievement of important learning outcomes (Kuh 2008; Brownell and Swaner 2009). Unfortunately, only a fraction of students actually participate in one or more of these practices as part of their undergraduate programs of study (Kuh 2008).

Institutions should be encouraged not only to collect and disaggregate data on the progress students are making in accumulating credits, but also to collect data on how many and which students have access to these kinds of practices. Institutions with high levels of participation in high-impact educational practices should be rewarded with additional funding. A portion of this funding could be allocated to expand the use of these kinds of practices or to provide faculty development opportunities through which faculty members can learn how to implement these practices effectively within the required curricula for all students.

Develop and require the use of meaningful and authentic assessments. Beyond simply calculating grade point averages, colleges and universities are making significant progress in refining how they assess the achievement of
common learning outcomes across students’ educational careers. Many are now using sophisticated and nationally tested rubrics to assess the achievement of outcomes that everyone deems essential for success in the twenty-first century (Rhodes 2010). Others are refining their use of multiple assessment tools to gather data on student achievement levels (Sternberg et al. 2011). Policy makers could incentivize implementation of meaningful assessment programs by providing additional funding to institutions with particularly robust assessment systems or by conditioning funding on the presence of assessment systems with a set of quality criteria (e.g., clearly defined outcomes, use of multiple assessment measures, disaggregation of assessment data, and use of both qualitative and quantitative data). The New Leadership Alliance for Student Learning and Accountability is currently developing an “Excellent Practices in Student Learning Assessment” institutional certification program that will provide important new frameworks through which new accountability and funding systems could be developed.

The accrediting community is also moving in productive directions with regard to quality assurance and assessment of student learning outcomes. For example, several regional accrediting agencies are beginning to work with their institutional members to test the use of the Degree Qualifications Profile developed by the Lumina Foundation. The federal government could assist in this effort by shifting the standards that authorize accrediting organizations to serve as gatekeepers for federal funding. The government could reduce certain requirements in order to allow accreditors to devote more resources to evaluating assessment approaches and results. Doing so would help ensure that institutions are collecting data that can be used to improve the quality of learning.

How can policy help (or at least not hurt)?

Policy at the national and state levels can certainly help advance important educational goals. Policy makers, however, must be vigilant in avoiding policies that create perverse incentives (e.g., incentives that increase selectivity or lower standards). And before any policy is implemented, its likely effect on the quality of learning should be considered carefully.

The most recent report from the NGA’s Complete to Compete initiative takes a small but important step in this direction by recommending that governors “require public colleges and universities to provide evidence that improvements in completion and attainment are not occurring at the expense of learning” (Reindl and Reyna 2011, 9). The report encourages states to work with higher education institutions to gather and make publicly available the findings from various student learning assessments. Unfortunately, however, the NGA report recommends a very narrow set of assessment approaches, few of which measure the complex and integrative skills students need. The Department of Education’s work on completion is moving in a promising direction as well. In a recent presentation at the department’s offices in Washington, DC, Under Secretary Martha Kanter noted that the department’s strategic objectives are to increase access to college and workforce training, foster institutional quality with accountability and transparency, and increase degree and certificate completion rates.

While these steps are laudable, it is up to educators and college and university leaders themselves to push back against the completion-only agenda and to take the lead in recommending and implementing policies that
put the quality of learning first. (For a list of specific steps the higher education community can take to increase both completion and quality, see the sidebar on p. 16.) Most importantly, the higher education community must resist implementing policies that would incentivize curricular designs that will lead to declining levels of learning and, instead, chart a course to develop and support designs that lead to excellence for all. We need the kinds of educational practices and policies that lead to a significant increase in the number of students who graduate on time and well prepared for the challenges they will face. Only by doing this will we increase the intellectual capital so desperately needed to rebuild our economy and strengthen our democratic society.

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FROM ONE STATE TO ANOTHER, boards of trustees, legislatures, and governors are implementing policies designed to increase output and efficiency in public colleges and universities. Many such policies reflect the agenda of the National Governors Association’s (2010) Complete to Compete initiative, which seeks to increase completion rates without increasing public investment. This state-level agenda is often linked to the broader goal of dramatically enlarging the proportion of the US population that is college educated. Nationally, these productivity objectives are articulated in a policy discourse focused on international competitiveness—as in the Obama administration’s “race to the top” and the Lumina Foundation’s “big goal” agendas, both of which are designed to ensure that the United States will once again have the highest proportion of college graduates in the world. Despite a highly partisan political environment, governors of both parties support the completion agenda, which at its core combines efforts to enhance production efficiencies with an anti-government-spending austerity agenda of cut, cut, cut.

Yet, the completion agenda is incomplete. It is an unfunded mandate to do more with less. Moreover, the agenda does not address the key educational, social, and economic challenges we face. It offers no mechanisms for enhancing quality, reducing non-meritocratic social stratification, or building a new economy.

In practice, completion measures are trumping and undermining educational effectiveness.

Worse still, the completion agenda is counterproductive. In regard to educational quality, the completion agenda is compromising the learning agenda. Many college students are currently experiencing only limited gains in some areas of learning (Arum and Roksa 2011). Therefore the challenge is not simply to crank out more graduates, but to enhance their learning. In response, a separate policy agenda has emerged to increase educational effectiveness by concentrating on student learning outcomes rather than cost efficiencies. In theory, these two policy streams need not be at odds; in practice, completion measures are trumping and undermining educational effectiveness.

In regard to the challenges of social stratification, the completion agenda has translated into an agenda of counting credentials as the productive equivalent of degrees. This has meant promoting a narrow conception of community colleges, which have long been the principal destination of working-class, first-generation, and Latino students. Educational policy at both the federal and state levels has been emphasizing workforce development, credentials, and the terminal tracks of community colleges. The result is that these institutions, which have long been instruments of upward social mobility, are being turned into dead ends for students who seek ultimately to obtain baccalaureate degrees. The completion agenda will increase already substantial college achievement gaps between social classes and ethnic groups.

In regard to economic challenges, much of the policy discourse speaks to the need for
higher education to play a role in building a knowledge-based economy. The political parties differ as to whether this means strategically investing in the current generation of students and in the production of knowledge (e.g., funding science). Yet, neither party—and few entities or leaders in the policy world—is focused on mechanisms for developing the next generation of professors to educate knowledge workers and create new knowledge.

In analyzing the completion agenda’s implications for academe and the academy, I write from three perspectives. I write as the former general secretary of the American Association of University Professors (AAUP). I also write as a professor whose research focuses on higher education policy and restructuring academic institutions/professions, and whose university, the University of Arizona, is a relatively open-access public land-grant research university—a university and a state that have become markers for the country in accommodating (or not) the growth demographic of traditional-age students. Finally, I write as the father of two daughters, each of whom is a doctoral student in a high-demand field, which gives me insight into and particular concern about the effects of current policies on the future of academe (the professoriate) and the academy (higher education).

**Foregrounding the wrong finish, missing the right foundation**

The completion agenda foregrounds the wrong finish lines. It also misses the right foundation for ensuring educational quality. In both regards it augurs ill for the integrity of education, for professors who develop the curricula and teach and mentor the students, and for other professionals involved in enhancing the quality of college education.

At one level, the completion agenda simply calls for much more of the same output—more credit hours and more graduates—with no additional input of public money. The push is for greater efficiency through higher credit-hour generation per professor and higher graduation numbers or rates per college. But are those the right goals given the current concerns expressed about college graduates by policy makers, scholars, and employers, and given what we know about what works in enhancing learning and increasing the number of graduates? Despite recent surveys demonstrating that college graduates are very satisfied with their education and with how well it has prepared them for work, policy makers offer a different assessment, one that is more in line with research—such as that of Arum and Roksa (2011)—and with employer surveys (Hart Research Associates 2010). This assessment calls for greater attention to and investment in what is learned in college, for we are currently producing many credit hours and many graduates without sufficiently preparing students for employment or for graduate or professional school. A major concern of students and policy makers is whether college leads to (better) employment. The completion agenda ignores this goal, and indeed undermines it.

At another level, the completion agenda is shifting the goal from attainment of college degrees to completion of some college—i.e., to credentials. This shift to include short-cycle output as part of higher education attainment effectively abandons any commitment to liberal education, which is central to professional employment. Few short-cycle degree certificates currently advance liberal education outcomes, and almost none are designed to get students on a pathway leading to higher levels of learning.

The completion agenda misses the opportunity to build the right foundation for enhancing the quality of college education. Indeed, it undermines our ability to do so. Studies of student learning and success have yielded consistent evidence that the academic engagement of students by faculty (and other professionals) is fundamental. One proxy measure of the professional working conditions that facilitate student engagement is instructors’ employment status. There is an inverse correlation between student success and the proportion of contingent faculty. The problem is that the working conditions of these faculty—not having offices, not knowing from one semester to the next whether they will remain employed, not knowing what they will be teaching more than a few days before classes start—undercut the opportunity for the “new faculty majority” (an empirical description and the name of a new advocacy
organization) to engage students, and for students to engage them. Each of the major faculty unions and associations (the AAUP, the American Federation of Teachers, and the National Education Association) has policies and campaigns to enhance the working conditions of contingent faculty and to expand the numbers and proportions of tenure-track faculty. This issue is all the more significant because engagement is especially key for low-income, first-generation students. Faculty working conditions are student learning conditions. Any agenda that overlooks the former shortchanges the latter.

The goals of the completion agenda refer exclusively to cost efficiencies at colleges and universities and to either cost containment at the state level or cuts to state budgets. The associated policies foreground simple metrics such as credit hours and graduation rates. For example, an October 2011 proposal from the Arizona Board of Regents calls for state funding of Arizona’s three public universities to be based on increases (or decreases) in the production of credit hours and graduates (and grant monies). No reference is made to increasing or even replacing departing/retiring faculty in order to achieve that output; quite the contrary, the premise is that faculty need to become more productive and that institutions need to become more efficient.

Consider the incentives these policies provide. If the goal is simply greater output with fewer production employees (faculty), the quickest paths are to drop standards, to replace full-time faculty with yet more part-time faculty, and to serve more and wealthier out-of-state students who are able to pay more and are more likely to succeed. Ironically, a completion agenda that promotes performance-based funding but that pays little attention to an important aspect of that performance (i.e., quality) encourages institutions to reduce quality or to reduce service to in-state, low-income students.

At the national level, this irony is evident in the 2010 McKinsey and Company report,
Winning by Degrees (Auguste et al. 2010). Although the report does not address the need to increase educational quality or to prepare students for work or for graduate or professional school, it does at least speak to the need to maintain quality. Yet the report encourages “transition to heavy use of part-time faculty” (53), a remarkable proposal for a system in which three-quarters of the academic workforce is contingent, and a little less than half is already employed on a part-time basis. Increasing those numbers—and ignoring the number of student support professionals—does not offer a recipe for enhancing engagement, educational quality, and student success. Winning by Degrees offers a path of decline through disengagement and disinvestment in what we know works.

Increasing non-meritocratic social stratification

The completion agenda will likely increase non-meritocratic social stratification. Low-income, first-generation, and immigrant students and students of color are the fastest growing demographics in US higher education. Analysts of prospective student populations agree on this point. The disagreement lies in what sorts of educational opportunities these students should be afforded. Over the last several decades, low-income students have enhanced their educational qualifications but have not realized gains in access to the best colleges (Bastedo and Jaquette 2011). The question is, should we continue to build retaining walls, or should we ride the demographic wave?

The policy disagreement, both nationally and in the states, centers on how policy makers who are overwhelmingly white, college educated, and economically privileged view and construct the educational prospects of other peoples’ children who increasingly are not white, college educated, or economically privileged. One troubling sign of the perceptions is the shift in the goal of realizing greater post-secondary educational achievement. As a result of an ongoing policy push to recognize nondegree educational attainment as success, our focus has, in a very short time, shifted away from college degrees alone to include credentials as well.

This shift can be attributed, in part, to the economic recession, which continues to affect funding for higher education. But it also reflects a political regression, not to the proverbial mean (middle ground), but rather to the early decades of the last century. At that time, the educational debate was over whether an academic high school education was appropriate for all students, or whether some—i.e., immigrants and low-income students—should instead be tracked into a terminal vocational curriculum. Substitute “community college” for “high school” and you have much the same discourse and assumptions today about the capacities and natural place of those same groups of students.

In the first year of the Obama administration, more funding was allocated to community colleges. But the funding was shifted from the Department of Education to the Department of Labor, and focused entirely on workforce development. Narrowing what a community college can be, and what a community college education can lead to, restricts and rations educational opportunities by class and by race/ethnicity. It violates the history of community colleges in the United States, and it violates our commitment to a system in which opportunity is defined by merit and talent trumps all.

Most first-generation, low-income, and Latino students start their postsecondary education at community colleges. National and state policies, including the defunding of public four-year institutions, will increase that pattern; more students who might have started at a low-tuition university will now start at a community college. To the extent that community colleges become primarily terminal credential providers, such policies will ensure that community colleges are not only where most students start, but also where most of them finish. Rather than instruments of upward social mobility, community colleges will become instruments for reproducing and heightening non-meritocratic social stratification.

In four-year colleges and universities the policy mechanisms are different, but there too national and state policies are likely to increase non-meritocratic social stratification. Defunding public higher education at the state level, and shifting the cost burden to students and their families, encourages colleges and universities to generate more revenue by recruiting higher-paying, higher-income—and often lower-scoring, out-of-state—students. It also discourages them from recruiting low-income in-state students who pay less tuition,
require more financial aid, and are defined as “expensive.” In a system defined not only by prestige maximization but also by academic capitalism (Slaughter and Rhoades 2004), there is a heightened focus on money (tuition revenue) over merit (quality).

The University of Arizona, where I have been a professor for twenty-five years, expresses these dynamics. And the newly proposed “results-based funding” formula in Arizona will only make the situation worse. The university has been a relatively open-access, low-tuition public research university, which makes sense in a low-income state with only three public universities and a tiny independent sector. But in the last decade, the University of Arizona has more aggressively “managed” its enrollments to maximize net tuition revenues, recruiting students from California with average household incomes that are over 50 percent higher than those of Arizona residents. On average, these students have lower SAT scores than do Arizona residents, but the university has increasingly utilized non-need-based aid to recruit them—which, due to the out-of-state tuition, still results in a net gain in tuition revenue. Non-need-based aid is also non-meritocratic: the aid is allocated based neither on need nor on merit. This is a major growth segment of financial aid, and it helps heighten non-meritocratic social stratification. Performance-based funding in Arizona promises to accelerate this pattern, providing a financial incentive for universities to turn away from local students—especially first-generation, low-income, Latino, and immigrant students—leaving them to start and finish at community colleges.

In short, just as we are building walls on the US-Mexican border to keep out the influx of people seeking opportunity, so we are building retaining walls in the academy that will keep out the growth demographics in our population.
Sadly, the walls in higher education are more effective and less permeable than those on the border.

**Who will be our country’s knowledge creators?**

Colleges and universities do more than graduate students. They do more than enhance students’ learning outcomes. They do more than conduct research and community service. Colleges and universities also prepare the next generation of professors, a key segment of our country’s intellectual workforce.

State policy ignores the role of higher education in preparing future faculty. To state policy makers, professors are either a labor cost to be minimized or an insufficiently productive labor force to be speeded up. The mechanisms for ramping up productivity undermine the system’s capacity to educate graduate students and, thereby, to create the next generation of knowledge producers. Consider the Arizona proposal for funding public universities, which combines performance-based allocations with the same allocation for three quite different universities—a land-grant university, a research university, and a doctoral-granting university. Equalized funding ignores the differential costs that derive from these institutions’ different fields and functions, such as preparing future faculty.

Federal higher education policy also overlooks the future professoriate. Science funding is provided to current professors, graduate students, and postdocs to apprentice for future professorial positions. Yet, the lack of any corresponding investment in those positions leaves many postdocs languishing in “postdoc purgatory” or as “permdocs.”

In our short-term fixation on organizational efficiency and budget cuts, we are failing to invest in the future professoriate and to provide the foundation for future innovation. Who will undertake academic initiatives and create new knowledge, and where is the pool of future academic administrators? Given the large proportion of contingent faculty (over two-thirds), and given that the average professor in a four-year institution is in his or her mid- to late-fifties, we need a national focus on the project of investing in new faculty.

Moreover, the nature of existing academic positions and pressures is such that many graduate students who once aspired to be professors are reconsidering. I have seen this in my own daughters, both of whom were undergraduate biology majors. One is now a doctoral student in public health at Johns Hopkins, and the other is a doctoral student in population biology at the University of California–Davis. Both have been working through the possibilities of professional careers in science, public health, and academe; both have been observing the lives of young professors at research universities. Neither particularly likes what she sees in the academy, especially in terms of the opportunities for women. And my daughters are not alone. A study of doctoral students at the University of California revealed a significant decline over time in the number of men and, especially, women who want to become professors (Mason, Goulden, and Frasch 2009). The messages we are sending through our policies and our own work lives are off-putting to many potential faculty members. We are undercutting the future creative potential of our knowledge workforce.

**Completing the completion agenda**

Although the completion agenda undermines the educational effectiveness agenda, the reverse would not hold true. What if policy makers were to prioritize quality by promoting student engagement with larger numbers of tenure-track professors and with better-resourced contingent professors? The performance of colleges and universities would be enhanced: graduation rates would improve, the growth populations of students would be better served, and graduates would be better prepared to move into the workforce or into graduate or professional education.

If you care about enhancing quality in college, then you should also care about enhancing the working conditions of the professoriate. Whether faculty have offices and are assigned classes far enough in advance to enable adequate course preparation; whether they are part of developing, refining, and coordinating the curriculum; whether they have the academic freedom and job security to challenge students academically and to explore controversial ideas—all these issues are integral to educational quality and student success (Hamilton and Gaff 2009). This is particularly true for the growth segments of the traditional-aged student population. Caring about educational quality means investing in the human infrastructure.
and capacity to provide a first-rate education. It means models of educational delivery that involve faculty and students in relationships over time, not just in brief encounters of the educationally inconsequential and not-so-very-close kind.

Similarly, what if policymakers were to prioritize tapping into the enormous potential energy and talent of the demographic wave? If you care about the American dream and America’s promise, then you should be troubled by policies that increase non-meritocratic social stratification.

We are cheating our demographic future by closing the door to so many students and preventing them from educationally pursuing their talents to the fullest. In the process, we are also threatening our democracy. As evidenced in England, increasing divides in the wealth of the population, combined with public policies that blame and punish the middle and working classes for the economic woes of the day, are a combustible mix. Those are the international data we should learn from.

Our current generation of leaders is failing our future generations of students.

In the late 1950s, California was faced with a tidal wave of demand for college. In response, educational leaders and policy makers developed a “master plan” to ensure that all prospective students would have access to affordable, high-quality higher education. Our educational and social responsibilities are no less pressing today. Do we thrive together, or do we further divide our population by social class, race/ethnicity, and immigrant status—regardless of merit?

Finally, what if policymakers were to prioritize investing in the academy’s innovation workforce? If you care about America’s ability to create, innovate, and compete, then you should care about the professoriate, which produces value. Professors enrich our communities through teaching, research, and outreach/service. Today the aging boomer generation of faculty is nearing retirement, and over two-thirds of faculty are employed on contingent appointments. Meanwhile, we are losing generations of talent among graduate students and postdocs. Our nation’s creative workforce is at risk.

The completion agenda will leave the United States behind educationally. As we count credit hours and graduation numbers, wondering what happened to quality, we will find ourselves further down the path of non-meritocratic division between haves and have-nots. And as the number of have-nots continues to grow, American colleges and universities will become places where money counts far more than it should in educational attainment. In the end, the completion agenda will leave us without the strong and innovative intellectual workforce our knowledge-based society needs.

It is time, therefore, to complete the completion agenda. It is time to head off this country’s decline by a thousand cuts. It is time to prioritize quality, equitable educational opportunity, and the creation of a strong intellectual workforce. It is time to invest in expanding the promise of higher education and, thereby, to extend the American dream.

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The completion agenda seeks significant increases in educational attainment, and its goals are quite laudable. The United States is lagging behind other industrialized nations in terms of the proportion of adults holding postsecondary degrees, and states have been challenged to implement policies that ensure improvements in degree completion rates—particularly for students from underrepresented groups. On the surface, these policy shifts should prove advantageous to students. Students should attain their degree goals and enter the workforce ever more efficiently, with reduced levels of debt incurred. One component of the completion agenda seeks to award more dual credit, with high school students completing college credits prior to enrolling in college. Advanced Placement examinations, early colleges, and other programs have served students and the nation well in providing high-attaining students a head start on their college careers. Yet, we offer a caution. Might the completion agenda result in less educational attainment for graduates if that agenda results only in the accumulation of credits, however awarded? Might it work against the improvements we have seen in terms of the “value added” of a college degree (Astin, Astin, and Lindholm 2011), particularly given our recent progress in sharpening attention toward student learning outcomes? Might these shifts ultimately threaten the core principles of a liberal education, and undermine the critical foundation that a solid high school curriculum coupled with degree attainment in higher education can provide for lifelong learning? Developmentally, high school students have different needs than beginning college students, and it is unclear whether the “efficiency model” might ultimately undermine students’ ability to cultivate the habits of mind and the moral and ethical values that are sought by employers, graduate schools, and professional programs.

Here we emphasize what we believe is missing from the completion agenda, from the standpoint of its implications for student learning. We first consider the broad sweep of evidence that informs the use of high-impact educational practices and designs for student success. We then consider how one particular aspect of the completion agenda—dual credit—threatens to undermine proven conditions for student learning. Finally, we suggest ways that higher education institutions and policy makers might adapt to these new conditions to ensure that students are not ultimately the victims of policy changes intended to enhance their success. It is imperative that the increase in the number of degrees be an increase in high-quality degrees.

Setting the stage for enhancing student learning

The focus on student learning methods and outcomes over the past decades has significantly enhanced academic achievement and persistence rates for college students. Shortly
after the publication of *A Nation at Risk* (National Commission on Excellence in Education 1983), which called for reform in elementary and secondary education, the Study Group on the Conditions of Excellence in Higher Education released *Involvement in Learning* (1984). This national report set the stage for renewed emphasis on high expectations, and elucidated the following three conditions of excellence in undergraduate education.

1. **Articulating and supporting high expectations for students.** Rosenthal and Jacobson’s (1968) classic research demonstrating that teacher expectations actually exert causal effects on young students’ performance highlighted the importance of both articulating and supporting high expectations. There is an important semantic distinction between “high standards,” which can imply exclusivity, and “high expectations,” which connotes Sanford’s (1968) optimal blend of challenge and support. The potential for each student to succeed in meeting high academic expectations must be facilitated through learning environments that are both challenging and supportive. The “Wingspread Declaration on School Connections” (2004) reflected the nation’s continued attention to both the potential for each student to succeed and the importance of such high expectations. The subsequent focus on broadened access to higher education among students with backgrounds that traditionally have been underrepresented is a function of this intentional approach to providing high expectations and support for each student.

2. **Involvement in learning.** Students who are involved with their instructors, with the material they are learning, and with one another in contexts associated with learning are more likely to be successful. One of the most important initiatives coming out of higher education in the 1990s was the National Survey of Student Engagement (NSSE), for which the factors associated with engagement became the heart of the instrument. Prior and subsequent research from the learning sciences indicated that heightened engagement is associated with deeper learning (Pugh et al. 2010). At about the same time, Barr and Tagg (1995) published their seminal article, “From Teaching to Learning,” which helped launch a paradigm shift that focused on learning outcomes (Tagg 2003).

The majority of faculty in higher education traditionally paid great attention to the content and methodologies within their disciplines, which are still the primary determinants of faculty recognition and reward systems (Arum and Roska 2011). Yet Barr and Tagg espoused a more flexible structure for courses, along with the design of educational environments to support students’ construction of knowledge through active learning. This shift did not relegate teaching to a subsidiary role, but instead challenged teachers to search creatively for new methods that help students attain learning outcomes. Some faculty began to adopt alternative pedagogical practices that support student learning and enhance student success, many of which were informed by cognitive psychology and the emergence of the learning sciences (e.g., Bransford, Brown, and Cocking 1999; Halpern and Hakel 2000).

The last decade has been characterized by increased focus on both student engagement and the association of that engagement with learning. John Gardner and his colleagues...
launched an international effort to focus on student success in the first year (Barefoot et al. 2005; Upcraft, Gardner, and Associates 1989). Student attrition in the first year remains a significant challenge on many campuses, but the first-year seminar and other supportive practices are demonstrating their effectiveness in increasing student success. The introduction of learning communities has been proven particularly important. In his ten-year retrospective on NSSE, Kuh (2007) maintained that he would implement interdisciplinary and engaging learning contexts for entering students as a primary means of improving undergraduate learning—which defines the learning community model (Smith at al. 2004).

In 2000, the Association of American Colleges and Universities launched the Greater Expectations initiative to help shape the baccalaureate in the twenty-first century. That initiative and the Liberal Education America’s Promise (LEAP) initiative, which grew out of Greater Expectations, have resulted in significant educational reform across the nation. These key initiatives represented consensus building across the nation on the baccalaureate for the twenty-first century and resulted in key articulations of both student learning outcomes and best practices in higher education. Bringing together the results emerging from NSSE with the LEAP initiative resulted in the identification of ten high-impact practices associated with increased student engagement and success. Kuh (2008) challenged institutions of higher education to ensure that all students engage in at least one of these high-impact practices within the context of their majors.

3. Assessment and feedback. Psychologists have long demonstrated the positive impact of providing feedback as a mechanism for enhancing performance (Kluger and DeNisi 1996; Schmidt and Bjork 1992). Faculty began to recognize that the performance of many students was enhanced when they received early and frequent feedback as opposed to the standard midterm and final examination grades. To some degree, the assessment movement in the country gained momentum as a function of the Involvement in Learning (1984) report calling attention to the importance of frequent assessments of learning accompanied by authentic feedback. After years of inattention to the articulation and assessment of student learning outcomes by many faculty, the academy began to study and to implement in systematic ways the programming that might result in enhanced student academic achievement. At the same time, accrediting bodies and governmental agencies reinforced this movement in the drive to strengthen accountability.

Fast-forward to the completion agenda
Given the paradigm shifts and structural changes that have evolved in higher education since 1984, it is not surprising that educators and policy makers have strategically envisioned ways of maximizing efficiencies and introducing courses for college credit in high school that will give students a head start on reaching their degree goals (Kleiner and Lewis 2005). One effort, the national Early College High School Initiative, has begun to make headway in increasing the educational attainment of students from diverse racial and ethnic backgrounds as well as from low-income families (Nodine 2009). Students are able to enroll in an integrated and aligned high school/college curriculum, and college courses are offered at no cost while students are enrolled in high school.

In most early colleges, high school students enroll in some classes on college campuses that include college students as well. Ideally, students are provided with support services from their high school to help ensure their success, and partnerships between high schools and universities help facilitate seamless transitions between high school and college. Webb and Mayka (2011) recently reported that early college high schools now operate in twenty-eight states, enrolling over fifty thousand students. Many of these students are from underrepresented groups. In 2009–10, 70 percent of the students enrolled in early college schools were students of color, and 59 percent were eligible for free or reduced lunch. The college-going rate of early college high school students is quite impressive given these demographics: of students who graduated from an early college school in 2008, 2009, or 2010, 73 percent were enrolled in a postsecondary educational setting, as compared with the national college-going rate of 63–69 percent. The early college model is excellent, particularly when students are enrolled in college classes on college campuses. Students who are prepared for such enrollment are well served. Rather than
replicate a college experience elsewhere, a model for early college that calls for enrollment in “normal” college classes is the collegiate experience.

The aspirations for the early college model go well beyond dual credit. Nancy Hoffman, a vice president at Jobs for the Future, the national nonprofit that has guided the early college initiative since 2002, indicates that first-generation students gain the insight that they are as entitled as any student to go to college if they are prepared. Through the experience of doing some college work, they also gain evidence that they can succeed. Thus, the principal benefit of the early college model is that it helps ensure students have the preparation and the persistence to succeed (pers. comm.).

Yet caution is warranted. Too often, dual credit may be awarded for high school courses taught by high school instructors without sufficient attention to replication of expectations and learning (Peters and Mann 2009). While there is salutary attention to a seamless and collaborative system of P–20 education, the awarding of college credit to high school students must also be associated with parallel expectations for student learning and academic achievement. The rigorous methodologies used to assess early colleges are often not in place. Though the National Alliance of Concurrent Enrollment Partnerships serves as a national accrediting body that provides measurable criteria for assessing quality in concurrent enrollment programs, the standards may be difficult for institutions to meet without additional resources. States may impose caps on tuition charged for dual credit (and waive tuition for students qualifying for free and reduced-price lunch), making it difficult for institutions to create infrastructure to support the faculty site visits, alumni surveys, and end-of-term student assessments that are necessary for ensuring high quality. State mandates for accepting such credit have to be coupled with assessment of student learning, and the significant enhancements to the student learning experience in college must somehow inform the work of instructors who teach dual-credit courses.

It is too early to determine the ultimate impact of dual-credit enrollment on two-year and four-year degree completion rates. And it is too early to assess the learning and academic achievement as programs are increased. There have been considerable challenges associated with aligning curricula to ensure that student learning outcomes for courses taken in high school are comparable to corresponding college courses. Matthews (2010) asserts that we need policies that insist upon a seamless educational experience for students as they move from secondary through postsecondary education, but these are only beginning to be developed. Some eighteen-year-olds are arriving at four-year institutions as “transfer students” with sixty or more credits completed. Such high numbers of transfer credits reduce these students’ eligibility for financial aid and discourage them from participating in traditional first-year experiences, such as learning communities (Foley et al. 2011). Indeed, some students may not be willing to enroll in a first-year seminar given that the maximum number of 100-level courses has already been distributed into their degree plans. Swail (2011) recently asked, “If students are able to take these college-level courses in high school, what does that say about the high school curriculum? Why have it at all?” In its worst form, dual credit may suggest to high school students (and their parents) that a college degree is simply an amalgamation of 120 credit hours that are defined by content areas rather than by attainment of student learning outcomes. From this perspective, whittling away at that number early in the educational process is a mark of efficiency—as well, perhaps, as a mechanism for improving social justice. However, little consideration is given to the intellectual development that should ultimately be produced through the completion of a college degree.

Ideally, we need to extend the high-impact practices that have begun to define the college experience down into high schools and for courses taken in high school are comparable to corresponding college courses. Matthews (2010) asserts that we need policies that insist upon a seamless educational experience for students as they move from secondary through postsecondary education, but these are only beginning to be developed. Some eighteen-year-olds are arriving at four-year institutions as “transfer students” with sixty or more credits completed. Such high numbers of transfer credits reduce these students’ eligibility for financial aid and discourage them from participating in traditional first-year experiences, such as learning communities (Foley et al. 2011). Indeed, some students may not be willing to enroll in a first-year seminar given that the maximum number of 100-level courses has already been distributed into their degree plans. Swail (2011) recently asked, “If students are able to take these college-level courses in high school, what does that say about the high school curriculum? Why have it at all?” In its worst form, dual credit may suggest to high school students (and their parents) that a college degree is simply an amalgamation of 120 credit hours that are defined by content areas rather than by attainment of student learning outcomes. From this perspective, whittling away at that number early in the educational process is a mark of efficiency—as well, perhaps, as a mechanism for improving social justice. However, little consideration is given to the intellectual development that should ultimately be produced through the completion of a college degree.

Ideally, we need to extend the high-impact practices that have begun to define the college experience down into high schools. Many early college units do this, but early college is not illustrative of most dual-credit programming. This is particularly important, given that the results of such educational practices have been disproportionately beneficial for low-achieving and minority students (Brownell and Swarer 2010). We must promote students’ intellectual development through a fusion of
curricular and cocurricular experiences, interspersed with reflection and experiential learning. The attention campuses have paid to the first-year experience, especially in terms of the first-year seminar and learning communities, has resulted in students making the transition to successful university study as measured both by engagement and by student success. Yet students arriving with a good deal of dual credit miss that transition to successful university study.

What is the answer? One possibility is to ensure that the high school experience is an early college experience, preferably located on a college campus. While this may be ideal for some high school students, it is not geographically or financially feasible on a large scale.

Another solution is for campuses to develop learning communities and first-year seminars that are appropriate for high school students who have earned dual credit. First-year experiences for this new cohort of transitioning high school students could be grounded in a framework steeped in Conley’s (2008) analysis of college readiness. Students could participate in learning communities in which they receive support for developing cognitive strategies (e.g., analysis, problem solving), content knowledge (e.g., writing skills), academic behaviors (e.g., self-monitoring, time management), and contextual skills for navigating the college system (financial aid, the norms of academic culture) that Conley maintains are critical for a successful transition to college.

How can we make the senior year of high school more like college? This is a primary mission of the early college model. These programmatic strategies are best approached by having faculty collaborate across high school and college in order to enhance shared understanding of what students bring to college and what colleges expect of entering students. Offering early college experiences to high school seniors would enhance the students’ success as they move on to college.

**Secondary and postsecondary institutions must share a compass**

After many years of research on enhancing student engagement and success, higher education now has explicit articulations of what is needed to support student success as well as a roadmap for getting there. Just as the LEAP Principles of Excellence in higher education argue that students need a “compass” or a clearly delineated pathway to support their success (AAC&U 2007), the academy itself has needed such a thoughtful and documented pathway for supporting students. Higher education is thus at a cusp—a time when we know the means to transform student success, but also a time when calls for accountability stress rapid movement to graduation. Higher education, working with secondary education, must move toward a continuum where expectations are mapped from high school through college. How might students be engaged earlier?

Wenger and his colleagues articulated the concept of a *community of practice* that is formed when a group of people with a shared concern or interest interact regularly and engage in collective learning (Wenger 1998; Wenger, McDermott, and Snyder 2002). Members of a community of practice share a common vocabulary and set of assumptions about their work, and the community develops as its members work together toward common goals. Teachers in specific disciplines, high school teachers, high school counselors, academic advisors, and student affairs personnel engaged in the hard work of supporting teaching and learning are each members of such communities, often marked by professional associations, journals, conferences, and opportunities for professional development and networking. Might we aspire to create a common community of practice that spans high school and college teaching and learning as a mechanism for sharing a compass to support student success?

There are models that could be emulated. In central Indiana, Project SEAM involves collaboration among fifteen school districts and five postsecondary institutions to create seamless transitions between high school and college. The California Partnership for Achieving Student Success is designed to collect data about student success and transition throughout K–16 education, providing a unique repository of information that supports collaborations across educational sectors to improve student learning through best practices. Models such as these require leaders dedicated to collaboration across traditional boundaries, the resources to support a shared evidence base, and opportunities to engage communities of practice in addressing the common goal of student success.

The completion agenda is likely to continue to exert pressure on high schools to award dual credit to help students reach their
degree goals more efficiently, and it is critical that educational systems adapt successfully to the evolving landscape. If this agenda moves forward focusing primarily on efficiency without regard to the quality of learning, the value of higher education credentials will diminish considerably. We recommend the following four strategies as a guide for those of us on campus.

1. Faculty and students must become reflective practitioners. Students ideally should become self-regulated learners (Pintrich 2000), which means that they can specify learning goals and formulate a plan for achieving them, track progress toward their goals, and implement different strategies when the original ones are not successful. That is, students must use their metacognitive knowledge to guide their actions as learners (Flavell 1979). Unfortunately, college students frequently lack such metacognitive knowledge (Graesser 2011), creating opportunities for faculty to cultivate this form of understanding in their students. Faculty can benefit from a burgeoning literature in the learning sciences to guide them in this work, and through reflective practice they will ideally come to see its value in terms of resulting in enhanced learning. Secondary and postsecondary educators as well as students must engage in coordinated reflective practice so that assignments are aligned with shared goals and transferable evidence so that students and the academy share the same compass at all points.

2. Academic structures and faculty roles must be revisited. The traditional ways in which decisions are made in higher education about teaching assignments and curricula are usually centered on departmental interests and faculty privilege, rather than on what is optimal for enhancing student learning and promoting student success. This must change. Academic structures must be revisited, and faculty work should be redefined. Academic departments, organized by disciplines, are the contexts in which faculty work is carried out, reviewed, and rewarded. Within departments, faculty members typically focus on undergraduates who are declared majors, as well as on graduate students—students for whom access and success are invariably assured. In contrast, entering students enroll in courses that may not be taught by tenure-track faculty members, and may not be perceived by instructors as “their” students because they may be bound for other majors. Tests are frequently content-based and associated with curricula that stress broad and superficial coverage. We need to continue to reform higher education at the faculty level through professional development and to provide academic departments with models for enhancing student success. “Gateway” or service courses should be taught by the best faculty, and creative delivery mechanisms should be employed to ensure that beginning students are immediately engaged in their learning. Academic advisers and student affairs personnel should be integral partners in the development of these alternative ways of helping students learn.

3. There is great value to time on task, both for faculty and students. While efficiency is an ideal in many sectors of the economy, there are limits to how deeply it can infiltrate academic culture without threatening the essence of who we are as educators, and ultimately harming the students we’ve been entrusted to teach. Thoughtful engagement of students through high-impact practices and the provision of routine feedback takes time, and is enhanced through professional development. Some of this faculty work can be supported through technology (Niess 2005). Some of it can be enhanced through trained teaching assistants and peer mentors that complement the work of faculty members. Similarly, students must recognize that deep learning takes time, thoughtful practice and reflection, and responsiveness to feedback. Students can participate in supplemental instruction (e.g., Stone and Jacobs 2008) and experiential education, and must be held accountable to the high expectations set by instructors. Though aspects of education can be made more efficient, it is a grave mistake to assume that slapdash approaches to teaching and instruction will result in anything but superficial learning and disengaged faculty. Campuses can reorganize the work so that students find contexts to increase their time on task—contexts where faculty, staff, and other students work together, in new ways, to support students and their learning.
Institutions can and must play a critical role in student success. One might argue that these recent reforms in higher education finally recognize Kurt Lewin’s (1936) wisdom in articulating that behavior is a function of the person and the environment, or \( B = f(P, E) \). Campuses have sought to recruit more well-prepared students by competing for students with high SAT scores, which is often more a proxy for family income than for student achievement. Mortensen (2005) has pointed out the strong relationship between family income and baccalaureate degree attainment. Putting the onus for student achievement on the student and not recognizing the institutional role in student success perpetuates the success of high-income students and threatens that of first-generation students who may need additional support. We must identify and deploy interventions that allow low-income and first-generation students to be successful across a range of institutions. It is these students who will define our country’s future, and it is a matter of social justice to expand programming and support that will ensure their success. Institutions must accept responsibility for serving, educating, and proudly graduating the students they are accepting.

Yet the larger question is finding means to ensure that dual credit and the completion agenda benefit student learning. How can we move to a community of practice? How can we assure deep learning in high school and in college, moving across these sectors? How can college faculty, high school teachers, college and P–12 administrators, and policy makers collaborate to ensure quality learning in the dual-credit domain? What role does state policy have in ensuring that quality is as much a consideration as efficiency?

Expectations from across society, coupled with the expectations for increased student success within the academy, have resulted over the past decades in increased attention to the contexts associated with student success. This combination of internal and external pressure has resulted in higher education identifying ways to support student success as well as student access. For too long, widening participation in higher education has resulted in an open door that is a revolving door, particularly in terms of the low-income, first-generation, and diverse students who increasingly define the student bodies on America’s campuses. Finding ways to support students in their first years, where these students have not met success, and identifying means to support their achievement makes America’s promise of success coming from educational attainment real.

Conclusion

The completion agenda needn’t be pitted against the promising reforms we’ve seen in higher education. At the extreme, the completion agenda could indeed result in significantly less achievement. The challenge is to articulate and support high expectations, to involve students in their learning, and to provide assessment and feedback. We must not buy into simplistic models that stress content as opposed to student learning. We must be wary of learning outcomes that reflect superficial knowledge built through the fragile process of memorization, and instead support students’ acquisition of competencies that demand deep learning that is integrative and constructed through critical inquiry. Rather than a dichotomy of educational practices, these are merely points along a continuum that is continuing to evolve as a function of educational and economic forces that interact over time. We challenge faculty to embrace opportunities for professional development and to cultivate synergies through faculty communities of practice that result in innovations. We must engage in rigorous assessment and evidence-based decision making to identify which innovations are most impactful for cultivating competencies in our students that will ensure their success as citizens and in the workplace. In many institutions, the work is already beginning to be done differently, and it is clearly working. It is imperative that we reframe our work in the context of the secondary-through-postsecondary continuum.

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REFERENCES


BACK IN 1958, the great rocker Buddy Holly told the world “It’s So Easy.” Holly is long since dead, but his thinking lives on today in the completion agenda, whose proponents believe that a few technical management changes will suddenly and dramatically improve higher education’s productivity. But Holly was talking about falling in love; unfortunately, getting unprepared and unmotivated college students to learn more and graduate faster is a different problem entirely.

Although its leaders are actively working with a full range of constituents, the completion agenda (also referred to here as the “reform” movement, since it encompasses a wide array of proposed changes) is focused mainly on state policy leaders, governors, legislators, and boards of higher education. Complete College America (CCA), a national nonprofit organization established in 2009 to increase educational attainment in the United States, is the standard bearer of the completion agenda. This is in part because it represents a synthesis of the best thinking of the “reformers” and their associated foundations, and in part because CCA’s primary agenda has been adopted by the US Department of Education (2011).

At the core of CCA’s strategy is a proposed shift to state-level performance funding: “Funding should shift from simply rewarding enrollment to valuing outcomes, such as credentials awarded or classes successfully completed. Funding is a powerful incentive, and rewarding performance allows states to align their fiscal policies with statewide goals for workforce development and economic prosperity.” This shift is necessary, CCA asserts, because “state appropriations typically are driven by enrollment with funding based on the number of students enrolled” and “as a result, colleges have a financial incentive to boost enrollment at the start of the term, rather than make sure students successfully complete classes and earn degrees.” In this context, “performance” is really a euphemism. The strategy would be more accurately described as “pressure-punitive funding,” because it is designed to force institutions to change and punish them if they do not.

CCA’s premise is that colleges and universities will not do the right thing unless they are paid to do so: it’s all about the money. Why don’t they improve on their own? Because, as numerous reform authors tell us, college and university administrators and faculty (1) don’t care deeply about student success to graduation, and (2) aren’t good managers because they don’t focus on productivity analysis and don’t use enough instructional technology.

Two prominent reformers, Dennis Jones and Jane Wellman, believe that change is possible: “Costs can be contained without sacrificing either quality or access. This will require better management of resources, including using data to make decisions, paying attention to spending, and looking at the relationship between spending and results” (2009, 5). Add to this a recent report from the National Governors Association’s Complete to Compete initiative, which identifies “three powerful forces” that affect the ability of colleges and universities to meet the needs of states: (1) “the economy’s increasing demand for more educated workers”; (2) the need to “compete for fewer resources because of the fiscal challenges states face today and will face in the future”; and (3) the “swelling tide of more students . . . concentrated among the groups that have historically entered and completed college at lower rates.” The report goes on to say that the “key ingredient” in meeting these challenges is “a strong accountability system made up of relevant performance metrics” (Reindl and Reyna 2011, 4). Or, consider the similar perspective of higher education pundit Kevin Carey, who believes that we could greatly improve performance if only we would rank our institutions properly. To that end, Carey
advocates for the creation of a federal rankings-based accountability system:

[T]he reality is that colleges and universities do not have to teach undergraduates well in order to prosper. Higher education institutions do what all human institutions do: they respond to the incentives and values of the systems and markets in which they exist. They can’t be regulated or threatened into improving their service to students. They have to want to change, not just vaguely or to a slight degree, but so much so that they’re willing to spend the resources and endure the conflict that change inevitably brings. The new rankings would provide those reasons. (2006, 21)

Thus, the reformers are embracing the Buddy Holly strategy: “It’s so easy.” This theme—make a few technical management changes and great things will happen—runs through the reform movement and helps account for its broad appeal, especially among state leaders.

**Why focus on the states?**

States are the principal target of the completion agenda because it is at the state level that political pressure can be most effectively linked to drivers of institutional change. Trustees are the other available lever, and reformers have worked actively to connect to them. But trustees are close to their colleges or universities and, accordingly, are quite familiar with their objectives as well as the hurdles they face. In particular, given their close connections to faculty and administrators, trustees tend to be unreceptive to arguments such as “people at public universities don’t really care about teaching or graduation,” “managers don’t use data to make decisions,” and “presidents and faculty are aloof from society and don’t much care about the social and economic impact of their institutions.” Trustees are also highly likely to understand the negative consequences of budget cuts.

Governors and legislators, on the other hand, generally approach college and university
issues from the perspective of annual or biennial budgets. To individuals in state government, the idea that you could have twice as many graduates with no additional investment is very appealing. There are lots of mouths crying loudly for the additional money that would be spent if higher education stays on the traditional path. It’s also the case that state policy leaders necessarily deal with issues from a high level of abstraction. It simply is not feasible for them to dig deeply into every issue or to seek subtle countervailing points when an apparently credible group is making a bold, sensible-sounding reform pitch. In this context, an argument for transformative change through a simple, if simplistic, funding formula often falls on fertile ground.

The appeal of “it’s so easy” also applies to understanding the rising cost of higher education over time. When there’s a simple explanation at hand—i.e., poor management and misplaced faculty and administrator priorities—few are willing to examine the complex economic forces that are driving costs relatively higher. Indeed, there is an active “it can’t be true” resistance to the economic arguments presented in major studies like *Why Does College Cost So Much?* (Archibald and Feldman 2010).

**States leading pressure-driven reform**

Efforts to implement pressure-punitive formula reform are relatively far advanced in both Ohio and Tennessee, and Texas is currently on the verge of implementation. Ohio, a state that has long been associated with enrollment-based formulas, switched in 2009 to “performance-based funding,” largely in the form of support for course completion—though graduation rates will be transitioned in as a factor as well. The developers of the new system recognized that a simple change would have negative consequences for less selective institutions: it’s obvious the students at a selective state institution will, at least initially, successfully complete courses at a much higher rate than those at a standard state institution. As a result, the developers worked hard to apply various weightings to offset selectivity, particularly through discounts provided for “at-risk” students, a category initially based on income level alone but later expanded to include age, academic preparation, and race/ethnicity” (Moltz 2009).

Despite Ohio’s earnest efforts to offset selectivity, the least selective universities are projected to do least well under the new formula in the initial years, which could encourage them to become more selective. It also seems improbable that the less-selective universities will be able to close the gap over time. One reason is that not all “at-risk” students, as defined by factors such as income level and race/ethnicity, are the same. For example, the selective state institutions will inevitably get a higher proportion of the low-income and underrepresented minority students who have attended religious schools with a greater focus on discipline and the value of learning. Finally, there is abundant evidence that the least selective institutions in Ohio have been working hard for decades to be more successful with poorly prepared students. The fact is, it’s not so easy—and changing the variables in a formula won’t change that.

In 2010, Tennessee passed the Complete College Tennessee Act, which will dramatically change the way Tennessee funds its higher education system: “Within five years, Tennessee colleges and universities will receive state funding based on how many graduates they produce and how well their students are progressing toward their degrees. This funding system is unique and will make the state a much-watched test-case for accountability in higher education.”3 Anticipating the consequences of this new pressure-punitive formula, University of Tennessee President Joseph DiPietro has said he expects that “we will see some institutions with improved performance who receive fewer dollars because others improved even more. That’s when the in-fighting will start” (Jones 2011). Unfortunately, since presidents and faculty have long been trying to improve the success of underprepared students—and Tennessee has actually had a graduation-oriented funding formula in place for decades—the in-fighting isn’t likely to be over how all universities can get free access to a leading institution’s super success strategy. Instead, as with previous attempts to implement performance funding, the in-fighting will be over the validity of the data. Thus, it’s reasonable to suppose that legislative and institutional attention in Tennessee will soon be focused more on data definitions and weightings than on how to achieve needed outcomes.

Texas has a strong but undersized higher education system and a fast-growing population, combined with a desire to be the state with
the lowest taxes in the country. In response, Governor Perry has launched a Texas-sized productivity agenda. To put the universities on the defensive, allies of the governor gave higher education critic Richard Vedder (2011) raw workload data forced from the University of Texas. The resulting study of faculty productivity was the subject of an op-ed in the Wall Street Journal and has been widely cited as a reference point for understanding university inefficiency. On the less positive side, Vedder’s critics have noted that the study’s methodology was deeply flawed—failing to distinguish between full-time and part-time employees, for example. They have also noted that it suffered from an array of analytical errors, such as ignoring differences among disciplines (Ura 2011). There’s an active struggle in Texas (see below), but an imposed pressure-punitive formula has the strong support of both the legislature and the governor.

Maryland and Virginia have taken very thoughtful approaches to improve accountability and performance, and have shown good results. The institutional performance standards, benchmarks, and targets established by the act provide a far more flexible set of measures than those advocated by Complete College America (although recent changes in Virginia show the impact of that organization). Moreover, the measures don’t drive dollars but, rather, are used to justify greater autonomy. Virginia is further distinguished by its Grow by Degrees (GBD) effort. The fruit of a business-higher education alliance, GBD is focused on raising awareness of the importance of higher education to the state’s economy. While advocacy for higher education is intrinsic to this effort, so are agreements to improve productivity and performance.

Given the appeal of the “it’s so easy” argument, there would be far more undesirable change in the states if it weren’t for the opposition of colleges and universities. In most of the country, the state-level responses have been institution-oriented and uncoordinated; there has not been much systematic pushback to national “reform” ideas. Texas is changing that. Perhaps because the attack was so sharp and so clumsy, leaders have rallied to protect the University of Texas—and now also Texas A&M and other universities—from the productivity push. The newly formed Texas Coalition for Excellence in Higher Education is actively challenging the kind of analysis provided by Richard Vedder as well the simplistic thinking of the completion agenda. Importantly, the coalition effort quickly drew significant business support and appears to have been instrumental in engendering a more cautious approach on the part of “reformers.”

Issues going forward
The US Department of Education cites Winning by Degrees, a report prepared by the management consulting firm McKinsey and Company, as evidence that it is possible, with no additional investment, to increase college attainment rates by 50 percent by 2020 (Auguste et al. 2010; Walters 2011). The report is interesting, but to make the math work nationally would require changing the structure of most universities to match that of the stripped down, mostly online, adult-focused institutions that rank highest in productivity.
But why, when students already can choose from an array of institutions, including those praised in *Winning by Degrees*, do we need to restructure the whole system to fit a single mold? We now have a rich and diverse higher education market with options that appeal to many different types of students. What’s wrong with choice? Take the McKinsey argument and combine it with the pressure-punitive formula approach and you have a major irony: both the political left and right are advocating a Soviet-style command economy for higher education—and, at least in Texas, Soviet-style universities.

Much of the debate in Texas centers on the various threats to quality that are likely to materialize if the pressure to graduate exceeds the ability to learn. These include threats not only to research and scholarship, but also to the integrity of the curriculum. Faculty will never go there first, but if cuts become too severe, we can anticipate reduced math and science requirements and other changes that would undermine educational quality. There is much that can be done at little or no cost, and there are actions—not recognized by the productivity agenda—that could have a huge payoff. Colleges and universities are routinely saddled with regulations and restrictions that ensure inefficiency; states need to back off. Even the NGA recognizes the potential benefits of deregulation (Reindl and Reyna 2011, 13).

Colleges and universities have accomplished a lot through outsourcing, but they need to do a lot more. There is no reason for a college or university to maintain any operations that are not directly academic. Similarly, too many institutions suffer from the “not invented here” syndrome. Increased collaboration—especially on the instructional side—is essential. Collaborative start-ups can be difficult psychologically, and there are usually significant up-front costs, so this is one area where both pressure and support from states would actually be helpful. Yet even if “Standard State” were given tons of additional money, it still may not be able to get its students to the same level of success as their better prepared peers at “Selective State”—and it is the selective institutions that typically receive substantially more funding. There is no good evidence that money can buy parity or that it is more likely than pressure to foster success. It’s a fact that, when dealing with people, intangibles like motivation and self-confidence matter. And the students at Standard State are less likely to believe that educational success is important, and far less likely to believe that they can learn (Walters 2010). We need to invest in some serious research on how to overcome this lack of a pervasive educational culture.

**Conclusion**

The results so far show that it’s not so easy. They also demonstrate the dangers of being overly optimistic about the power of being data focused—about the so-called “culture of evidence”—to drive significant change (Rutschow et al. 2011). The effort to improve remediation currently being led by Achieving the Dream, a national nonprofit dedicated to supporting community college students, offers a good counterexample of how to prioritize key problems and engage faculty in developing solutions.

Too many academics spend too much time whining about legislators. That’s not only unproductive, it’s also wrong. The fact is that, with surprisingly few exceptions, state legislators are intelligent, hard-working, thoughtful, and moral individuals who want to help people and improve the economy; they would never deliberately do anything to the contrary. They’re buying into the completion agenda primarily because it’s all they’re hearing. That’s the heart of higher education’s challenge today. The pushback in Texas is necessary but not sufficient. Attacking the attackers provides needed balance, but it certainly doesn’t solve the problem. Also, the Texas effort is focused on research universities, while the greatest danger from the productivity agenda is to the nation’s equally essential “Standard States.”

Colleges and universities need to organize nationally—and in a very visible way—to do three things: (1) embrace the positive aspects of the completion agenda, such as the focus on adult education; (2) promote further efforts at continuous improvement, as in Maryland and Virginia, but include radical outsourcing and collaborative strategies; and (3) develop more systematic research and development projects to improve learning and success to graduation.
One promising step is the creation of the Campaign for the Future of Higher Education (see http://futureofhighered.org), though a more broadly based group will probably be needed to achieve a comprehensive solution.

In the debate over the future of America's colleges and universities, the money and momentum right now are with higher education's version of the clattering classes. If this continues, we'll have a disaster. The narcotic appeal of "it's so easy" is not only pointing to foolish actions, it's leading us away from the real problems. It's time to counter with a coherent and aggressive agenda that is truly based in higher education.

To respond to this article, e-mail liberaled@aacu.org, with the author's name on the subject line.

REFERENCES

NOTES
4. Tennessee’s longstanding performance funding policy has had little discernible impact (Lederman 2011).
5. The impetus for the new productivity agenda was described in The Statesman: "We have to find ways to get faculty to understand that all of us work for the state, that the state is in financial crisis and that we have to get better results for the same amount of money or even less money," said Higher Education Commissioner Raymund Paredes, whose agency, the Texas Higher Education Coordinating Board, has floated a number of reforms for lawmakers to consider. ‘That’s the reality we’re in’" (Haurwitz 2011).
9. The Texas Coalition for Excellence in Higher Education has launched a sophisticated and informative web site; see http://texaseducationexcellence.org.
The Path to Pedagogical Reform in the Sciences

Engaging Mutual Adaptation and Social Movement Models of Change

ADRIANNA KEZAR

In Liberal Education and other important higher education publications, we routinely read about effective innovations that are known to promote student success: assessment; engaged, integrative, and interdisciplinary learning; collaboration and partnerships; global perspective taking; among a host of others. The fact is, however, that such innovations often remain just that—innovations, rather than common practices. We certainly do not lack ideas for improving instruction in ways that help students learn more effectively, but we do lack ideas for spreading pedagogical innovations and broadening “ownership” of them on campus. One of the dilemmas that policy makers, campus leaders, and individual faculty members often describe with chagrin is the difficulty of scaling up successful innovations. Officials at the National Science Foundation (NSF), for example, admit they are discouraged because the results of most NSF-funded projects are not disseminated beyond the target faculty or institution. The NSF has relied largely on a research and development model of innovation diffusion: a key innovation is created and tested, and then the evidence of its efficacy is distributed; ideally, others will adopt the innovation based on the information about its value (Rogers 1995).

But this model has proved wanting; faculty are not adopting the effective innovations. In higher education, we tend to think more about the content of the innovation and less (if at all) about its implementation or dissemination. In this article, I describe two fundamental problems related to this dilemma: (1) we largely ignore models about how to scale up change and, therefore, tend to rely on isolated practices that are unlikely to lead to broader dissemination; (2) those who do adopt models of scale-up often look to policy literature for guidance and, as a result, advance dated approaches that are not well aligned with the higher education system. Next, I argue that two particular models—mutual adaptation and social movement—are much more likely to lead to widespread and lasting change in higher education, and I describe the key mechanisms that help facilitate these promising approaches to scale-up.

The need for greater intentionality and thoughtfulness

The first point, about a lack of thoughtful dissemination, I will address only briefly. Campuses have adopted a handful of strategies intended to encourage the wider dissemination of successful innovations, such as offering professional development workshops or providing seed funding. These dissemination strategies can also be found in proposals to the NSF and the Fund for the Improvement of Postsecondary Education (FIPSE) for the funding of projects that are intended to achieve broader scale. While professional development and seed money can be helpful in themselves, they are not being utilized in ways that attend to the entire change process. Professional development may help a faculty member better understand the change, but it does not provide either...
incentive to change or ongoing support for change. Seed money may provide incentive, but faculty members may still face departmental barriers that the funding does not help them overcome. One-off solutions to dissemination and support do not help achieve systemic change and scale-up.

Second, much of the available information about scaling up innovations comes from policy research and applied subfields like international or community development (Dede 2006). If educators do adopt a change model, it may not be one with proven success in education. Within policy circles, scale-up is typically understood to involve the application of an innovation that has been proven successful in one setting to a wide range of other settings (Healy and DeStefano 1997). It is assumed that success is independent of the implementation setting, or that successful innovations can be readily applied to other contexts without modification or alteration. It is also assumed that reform begins with small pilots, which are tested and then distributed without consideration of the actors or contexts of subsequent settings. According to these traditional models of scale-up, innovation is imposed externally and represents outside influence. Through funded projects, for example, innovations can be created and tested by faculty and then distributed to various sites—with little or no investment provided for implementation at the new sites.

There are several problems with these traditional models of scale-up. Cumulative evidence has shown that they are not effective in many situations, and that they are wholly ineffective in education—particularly in the K–12 context, where many such models have been applied. Without modification or adaptation, innovations are not easily transferred to other settings. School reform efforts, for example, are much more successful when they are modified to fit the particular school setting (Datnow et al. 1998).

Moreover, researchers now recognize that scale-up is more likely to succeed if the innovation was developed organically within a school or setting, rather than created at a lab or off-site location and imposed externally. For example, Healey and Destefano (1997) have noted that teachers, parents, and students should be involved in the design, development, and implementation of innovations intended to solve problems related to their own situations. Also, traditional models of scale-up are often rooted in an understanding of innovation as static and, therefore, readily applicable to different contexts, even as circumstances change over time. Yet, scholars in the development field have come to realize that communities are dynamic, and that the beneficial changes they bring to scale need to be organic and to change with circumstances (Samoff, Sebante, and Dembele 2003).

Another problem with traditional scale-up models concerns incentive or motivation. Many efforts at educational reform ignore whether or not there is interest within the community. Generic definitions of scale do not examine motivation or the interests of particular actors, and, as Elmore (1996) has noted, efforts rooted in such definitions are unlikely to be successful. Also, scale-up works better when individuals or groups working in local settings are connected to a network of
others who are also involved in similar efforts. Through such networks, innovators can support one another and help resolve issues of implementation, motivation, and ownership. Networks can also provide the leadership needed to create and sustain change in particular settings.

These problems with traditional models of scale-up are powerfully demonstrated in Elmore’s (1996) evaluation of NSF school reform and scale-up efforts over twenty years. Elmore concluded that the incentive structure in schools works against any attempt to change core activities, and that reform efforts will never reach scale so long as the model of scale continues to ignore the need to alter basic organizational structures—i.e., the implementation context. He also concluded that the problem of scale will not be solved so long as incentives remain limited and innovation is viewed as an individual trait of charismatic innovators, rather than as a normative requirement of good teaching. Good practices should be openly and publicly debated on a regular basis, and educational institutions need to build structures that promote ongoing learning. In the end, Elmore noted, we need to recognize that the issue of scale is an issue of cultural norms and incentives that cannot be fixed with simple policy shifts, grant money, or pilot-tested innovations imposed through traditional scale-up models.

In a similar critique, Coburn (2003) demonstrated that innovations in schools usually falter because they do not achieve depth or alter the norms of teachers. Even schools that successfully implement reforms have difficulty sustaining them in the face of competing priorities, changing demands, and teacher and administrative turnover. Too often, practices change, but underlying beliefs do not. Hence, once pressures to use the new practices have lessened or disappeared, people tend to return to old habits. Bringing deep, systemic changes to scale requires a thoughtful and systemic approach—and one that addresses the critiques of traditional scale-up models.

**Models for scaling up change in higher education**

Both mutual adaptation and social movement models address all the critiques of traditional scale-up models, and they have the potential to bring marginal pedagogical innovations to scale in higher education. Mutual adaptation involves a flexible process that is negotiated between developers and educators, and its design reflects local needs while still holding true to the original nature of the innovation (Datnow et. al. 1998). Because external groups are in place to provide the infrastructure, the mutual adaptation model can make available incentives and structures to support the improved practice at a relatively early stage.
One way to achieve mutual adaptation is by creating learning communities through which educators deliberate on an innovation and work together to customize it for their particular setting (Senge 1990). Mutual adaptation enables external groups to champion an idea that they regard as beneficial to student learning but that might not have many internal champions.

The social movement model of change suggests that when people across varying sites decide to embrace a reform or innovation, they form networks, deliberate and discuss the innovation, work collectively, and ultimately create rewards and institutional structures to make it part of the system (Palmer 1992). This type of process works best when the implementation must confront an entrenched status quo, despite the presence of many internal champions. As flexible, context-based models for achieving broad implementation, mutual adaptation and social movement both create ownership, respond to local cultures and structures, and foster deliberation and network creation. Leaders seeking to scale up pedagogical innovations should focus on three key components of both mutual adaptation and social movement models: (1) deliberation and discussion, (2) networks, and (3) external support and incentives. (Table 1 summarizes these three key components of mutual adaptation and social movement models, and indicates whether they respond to the critiques of traditional scale-up models.)

Studies have shown that deliberation and discussion among professionals commonly lead to authentic change. Several of these studies have also shown that one of the main reasons change does not occur is that people fundamentally do not understand either the reason for a proposed change or the content of it. Therefore, it is essential that people be given opportunities to engage in ongoing discussion within the context of a deliberative learning process that helps them understand the necessity for change. Through such discussion, underlying norms and values can be changed, and people can come to accept new ways of doing things (Senge 1990). Deliberation and discussion can be used to address many of the challenges of scale-up. Those who undergo a deliberative learning process are likely to develop a sense of ownership, for example, and ongoing discussion can foster internal motivation. Organizations are not static, and organizational cultures can differ widely. One benefit of deliberation and discussion is that their inherent flexibility allows for adaptation during the implementation process in response to the changing needs of particular organizational contexts.

Networks connect people with similar ideas and provide change agents with the information and moral support they need to help move the change process along and sustain it over time. Moreover, the incentives provided by external networks can help compensate for a lack of internal incentives and support for innovation. Isolated individuals or groups are often unable to sustain change in the face of the status quo. By relieving isolation through connection with others engaged in similar efforts, networks offer a way to overcome this challenge. And discussions within such networks can help change agents adapt their strategies to context issues as they emerge.

Networks can be created both on and off campus. In seeking to change pedagogical

<table>
<thead>
<tr>
<th>Areas of critique of scale-up</th>
<th>Deliberation</th>
<th>Networks</th>
<th>External support and incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentives</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Implementation context/flexibility</td>
<td>✓</td>
<td></td>
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<tr>
<td>Depth</td>
<td>✓</td>
<td></td>
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<tr>
<td>Ownership</td>
<td></td>
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<tr>
<td>Underlying norms</td>
<td>✓</td>
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<tr>
<td>Sustainability</td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>Spread</td>
<td>✓</td>
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<td></td>
</tr>
<tr>
<td>Static nature</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Motivation</td>
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</table>
practices, it is especially important to link up the individuals on campus who share an interest in the new pedagogical approach. Bringing people together across campus by establishing a center related to a particular change—a center on integrated technology, for example—is a strategy common to most successful mutual adaptation and social movement processes. Alternatively, an existing center on campus—a center for teaching and learning, for example—can be used to host events that bring together individuals with similar interests. An internal campus network can serve a variety of purposes: creating a coalition to support a change effort, helping people respond to local changes by fostering awareness of changes on campus, providing incentives for change, developing a communication system for spreading information necessary to implement a change, helping sustain the change over the long term as whole sets of people are connected to the initiative, providing expertise to brainstorm problems, and supplying human resources where they are needed.

External supports and incentives help motivate and sustain change agents in the face of entropy and even negative dynamics by providing funding, awards, and recognition. Endorsements and other forms of support from government agencies, foundations, and other influential organizations—e.g., accreditors, disciplinary societies, community organizations—can facilitate change and help achieve scale. Endorsements can also make it easier to move beyond the true believers, to reach other faculty and staff who may need additional external motivation before fully embracing change. The innovation gains legitimacy through endorsements and support. In addition, some external levers can be used to contribute directly to sustainability by incorporating the change into a larger system of accountability.

One way to provide more systemic support and incentives is to establish a dedicated intermediary organization—i.e., an organization whose singular mission is to support and advance a particular reform or innovation. Such an organization is able to dedicate the bulk of its efforts to the priorities of the change, something a campus alone may not be able to do. Although charismatic leaders do occasionally emerge to champion a change on campus, colleges have multiple priorities and typically cannot provide the leadership needed to scale up a change. A more systematic approach that leads to the broad and successful implementation of an innovation is to obtain support from an external organization that is dedicated to advancing the particular reform. Intermediary organizations can provide vision, rationale, access to networks and communities of practice, technical support, established awards, and other resources. They can also provide legitimacy and credibility to campus initiatives, enabling leaders on campus to point to a national organization that supports their innovation.

**This new approach exemplified**

Rather than focusing on the development, testing, and dissemination of innovations—areas of focus that are inherent in traditional...
scale-up models—we need greater attention to professional dialogues and networks, incentive schemes, funding and seed money, professional norms, and the infrastructure of support. This new approach is exemplified in the most recent initiative of Project Kaleidoscope (PKAL), a national intermediary organization that has been dedicated since 1989 to supporting and advancing reform and innovation in undergraduate programs in the fields of science, technology, engineering, and mathematics. In this initiative, called Facilitating Interdisciplinary Learning, PKAL brought together twenty-eight campuses over three years in roundtables, conferences, webinars, and conference calls in order to encourage deliberation and networking.

The campuses exchanged ideas about strategies to advance interdisciplinary learning, wrestled with and vented about barriers, grappled with developing a common language for interdisciplinarity, and shared ideas for advancing campus change. PKAL’s facilitation of deliberation enabled conversations that would not naturally occur on campuses, and it afforded time for reflection—a rarity as people get caught up in their day-to-day work. Participants in the network discovered new ideas that would not have occurred to them in isolation on their own campuses. They also borrowed guidelines for interdisciplinary hiring and curriculum committee formation. Campus teams learned to frame their work in ways that are more acceptable to faculty with a strong disciplinary background. Through participation in PKAL’s annual leadership institute and a project-specific leadership conference, faculty explored their role as leaders and change agents on campus, and developed strategies to foster change by creating new professional norms and on-campus coalitions for change. PKAL provided external incentives and support by reviewing campus grant proposals, by communicating directly with each campus president and various senior administrators about the importance of the project and the need for administrative support, and by connecting project campuses to other PKAL initiatives, networks, and dissemination mechanisms (national publications and conferences). Through these types of interactions and activities, PKAL facilitated mutual adaptation and social movement, which is difficult for a campus to do on its own without support.

In conclusion, campus leaders should think more systemically about change—not just about which intervention to adopt—and they should look beyond their own campus structures to intermediary organizations like PKAL for support.

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REFERENCES
America’s Service Academies,

DANA H. BORN, ANDREW T. PHILLIPS, AND TIMOTHY E. TRAINOR

We are America’s three largest service academies: Air Force, Navy, and Army. For each of our respective services, we are the primary undergraduate institutions and commissioning sources that educate and develop the officers who are expected to lead this nation’s armed forces. We are special places that have special “missions”—to develop leaders of character who will serve our country, with honor and with courage, and who upon conclusion of their military service will continue to lead the nation in whatever occupation they choose to follow. We all focus on leadership development and service; we all insist upon honor and integrity; we all stress courage and commitment, both mental and physical. We have much in common. And one of the things that we have in common is the ever present challenge to explain what it is that we do, and why we do it.

When you work at a military service academy, everyone is your constituent. Literally everyone has expectations of and interest in the service academies; many know someone who’s been a cadet or midshipman at an academy, or someone who has served there; everyone feels like they “own” part of each academy—and in some respects that’s true, because our funding comes from Congress. Every time a service academy makes news—good or bad—everyone takes an interest. For us, public advocacy is a high-stakes discussion; everyone has an opinion, everyone wants a say. The Naval Academy, by virtue of its close proximity to Washington, DC, is cited in the Washington Post nearly every week. The same can be said for West Point and the New York Times. And most people read the articles about us precisely because it is Navy, West Point, or Air Force that’s being reported upon; there isn’t typically the same level of interest concerning most other educational institutions. Perhaps the bottom line is this: in answer to the question, whom do you serve? or what is your purpose? the three major service academies share a common and special answer. We serve the defense of our nation by educating, training, inspiring, and aspiring to develop America’s sons and daughters into the leaders who will be charged with that effort. In this way, we serve every American citizen.

The three major service academies have much in common, and much that is different as well. The similarities between us tend to be obvious (and are just as obvious as the differences between us and most civilian universities). As military service academies, we are full immersion programs. We significantly control most aspects of our students’ lives, from their first day in late June/early July to commissioning day in late May nearly forty-seven months later. Everyone knows about our required uniforms, parades and formations, challenging physical demands, and honor and conduct systems. As you might guess, we also require various forms of professional military training, including the use of weapons and weapon systems, and provide significant exposure to and immersion in leadership principles for military officers. We also control and closely monitor the many facets of academic life, from class attendance and course selection to semester credit loads and mandatory study hours. We are institutions that foster good order and discipline, and we develop that in young men and women ranging in age from about eighteen to twenty-six. It’s an understatement to say that we live and work in a structured environment! This we each have in common.

Your service academies have had great success with using the integrative and applied learning concepts of the LEAP initiative

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academies. Our aim here, however, is to discuss the similarities we have with the vast majority of higher education institutions. In fact, in many of the most fundamental respects, we are not so different from a typical civilian college or university.

Liberal education at the service academies

While each of our service academies uses different words to express our desired educational student learning outcomes, we think there is commonality in what we expect of all our graduates. We emphasize the creation of scholar-warriors, and we take to heart the words attributed to Thucydides: “The nation that makes a great distinction between its scholars and its warriors will have its thinking done by cowards and its fighting done by fools.” Accordingly, we seek to develop leaders of character, selfless leaders who think first of others (exemplified, for example, in the Navy ethos of “ship . . . shipmate . . . self”); who value diversity and inclusion and the quality inherent in surrounding yourself with differing opinions, perspectives, and experiences; and who create a respectful, ethical, and professional command climate through their own personal integrity and moral courage. We value inspirational leadership, the concept that great leaders inspire their teams to accomplish the most challenging missions, and do so by example through mental and physical toughness and by demonstrating resilience. Our graduates are expected to be consummate professionals,
role models for those whom they lead, and most importantly to project to the world the values, the understanding, and the humanity that define our nation. We know that in many cases the first and perhaps only American that an individual from a foreign country will ever encounter will be one of our graduates. In that moment of first impression, we take a big step toward either gaining a friend or ally, or toward creating a lifelong enemy. Our graduates must represent our very best and be dedicated to the values of our services and to the Constitution of the United States.

Moreover, we seek graduates who are technically proficient in the basics of science, technology, and engineering, and who have developed a commitment to lifelong learning. We develop critical thinkers and creative problem solvers who are innovative decision makers and have a bias for action. They must be articulate, both orally and in writing; they must be adaptable to their circumstances and environments; and they must understand and appreciate global and cross-cultural dynamics, the history of regions and peoples, and the social dynamics of interpersonal relations.

At first glance, this description of our institutional educational learning outcomes may seem quite different from the typical educational learning outcomes of other four-year colleges and universities. But we don’t think they are. We think they satisfy the essence of a liberal education as defined by the Association of American Colleges and Universities (AAC&U): “Liberal Education is an approach to learning that empowers individuals and prepares them to deal with complexity, diversity, and change. It provides students with broad knowledge of the wider world (e.g., science, culture, and society) as well as in-depth study in a specific area of interest. A liberal education helps students develop a sense of personal and social responsibility, as well as strong and transferable intellectual and practical skills such as communication, analytical, and problem-solving skills, and a demonstrated ability to apply knowledge and skills in real-world settings.”

In fact, the work associated with AAC&U’s Liberal Education and America’s Promise (LEAP) initiative has been quite useful to the service academies (see www.aacu.org/leap). The LEAP essential learning outcomes align well with the institutional goals and varied curricular frameworks at each of the service academies. Consider an example from the Air Force Academy.

In 2006, an Air Force Academy team attending the AAC&U Greater Expectations Summer Institute first learned of the LEAP initiative and its corresponding learning outcomes. These LEAP outcomes, combined with an emerging set of parallel Air Force “core competencies,” served as important top-down guidance to supplement the educational learning outcomes the Air Force Academy already had developed through its previous bottom-up processes. The result was a major revision of the prior educational outcomes, with a focus on making the new institutional outcomes concise, memorable, and consistent with both Air Force doctrine and best practices in higher education (see fig. 1). These institutional outcomes embody the intent and spirit of the Air Force Academy mission and are, today, the focal point of everyone’s efforts at the Air Force Academy, regardless of whether they teach in the core curriculum, in a major program, in military training, in athletics, or in the Air Force Academy’s signature airmanship programs. This has helped the Academy work in a much more integrated way than it had in the past—better supporting this “both Athens and Sparta” institution. Indeed, at the Air Force Academy, all of the mission partners of the Academy curriculum and course of instruction (academic, military, athletic, and airmanship) now work together toward these shared educational learning outcomes. Aligning the new outcomes with the LEAP essential learning outcomes was a key step in making this so.

More generally, the academic programs at each of our service academies are structured in similar ways, with all cadets and midshipmen required to take a large number of required “core” courses (approximately 60–75 percent of their total credits) in addition to courses leading to a major. Our students also complete a significant number of credit hours in physical education and military science or military strategic studies classes, typically at least eight...
Figure 1. Comparison of the LEAP essential learning outcomes with all three service academy mission statements and their respective educational learning outcomes

<table>
<thead>
<tr>
<th>AAC&amp;U LEAP Mission Statement</th>
<th>U.S. Air Force Academy (USAF)</th>
<th>U.S. Military Academy (USMA)</th>
<th>U.S. Naval Academy (USNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THE ESSENTIAL LEARNING OUTCOMES</strong></td>
<td><strong>To educate, train, and inspire men and women to become officers of character motivated to lead the United States Air Force in service to our nation</strong></td>
<td><strong>To educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country and prepared for a career of professional excellence and service to the Nation as an officer in the United States Army</strong></td>
<td><strong>To develop Midshipmen morally, mentally, and physically and to imbue them with the highest ideals of duty, honor, and loyalty in order to graduate leaders who are dedicated to a career of naval service and have potential for future development in mind and character to assume the highest responsibilities of command, citizenship and government</strong></td>
</tr>
<tr>
<td><strong>Knowledge of Human Cultures and the Physical and Natural World</strong></td>
<td><strong>Empowered by integrated Intellectual and Warrior Skills</strong></td>
<td><strong>Committed to Societal, Professional, and Individual Responsibilities</strong></td>
<td><strong>Attributes of Graduates</strong></td>
</tr>
<tr>
<td>• Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts</td>
<td>• Quantitative literacy</td>
<td>• Ethical reasoning and action</td>
<td><strong>We accomplish our mission by graduating midshipmen who are warriors ready to meet the demands of a country at war or at peace. Our graduates are:</strong></td>
</tr>
<tr>
<td><strong>Focused by engagement with big questions, both contemporary and enduring Intellectual and Practical Skills, including</strong></td>
<td>• Information literacy</td>
<td>• Respect for human dignity</td>
<td><strong>Selfless:</strong> Selfless leaders who value diversity and create an ethical command climate through their example of personal integrity and moral courage</td>
</tr>
<tr>
<td>• Inquiry and analysis</td>
<td>• Teamwork and problem solving</td>
<td>• Service to the nation</td>
<td><strong>Inspirational:</strong> Mentally resilient and physically fit officers who inspire their team to accomplish the most challenging missions and are prepared to lead in combat</td>
</tr>
<tr>
<td>• Critical and creative thinking</td>
<td>Practiced extensively across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance</td>
<td>• Lifelong development and contributions</td>
<td><strong>Proficient:</strong> Technically and academically proficient professionals with a commitment to continual learning</td>
</tr>
<tr>
<td>• Written and oral communication</td>
<td><strong>Grounded in essential Knowledge of the Profession of Arms and the Human &amp; Physical Worlds</strong></td>
<td>• Intercultural competence and involvement</td>
<td><strong>Innovative:</strong> Critical thinkers and creative decision makers with a bias for action</td>
</tr>
<tr>
<td>• Quantitative literacy</td>
<td>• Intellectual and Warrior Skills</td>
<td>Empowered by integrated Intellectual and Warrior Skills</td>
<td><strong>Articulate:</strong> Effective communicators, both orally and in writing</td>
</tr>
<tr>
<td>• Teamwork and problem solving</td>
<td>• Written and oral communication</td>
<td>Intellectual and Warrior Skills</td>
<td><strong>Adaptable:</strong> Adaptable individuals who understand and appreciate global and cross-cultural dynamics</td>
</tr>
<tr>
<td><strong>Personal and Social Responsibility, including</strong></td>
<td>• Critical thinking</td>
<td>Critical thinkers and Innovative:</td>
<td><strong>Professional:</strong> Role models dedicated to the profession of arms, the traditions and values of the Naval Service, and the constitutional foundation of the United States</td>
</tr>
<tr>
<td>• Civic knowledge and engagement—local and global</td>
<td>• Decision making</td>
<td>Critical thinkers and Innovative:</td>
<td><strong>Personal and Social Responsibility, including</strong></td>
</tr>
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</table>
credit hours of physical education and another twenty or so of military science/military strategic studies and leadership. Concepts supporting each academy's institutional learning outcomes are progressively developed and reinforced throughout the curriculum, and integrated in various courses. Each academy places a strong emphasis on practical applications in its program and course learning models, and also provides educational enrichment activities such as semester abroad programs, research work, and internships, typically with governmental agencies so students can practice what they learn. Throughout the forty-seven-month experience, character and leadership development is emphasized through both experiential learning opportunities and structured Socratic exchanges. But, regardless of the details of our programs, the educational structure at each of our service academies emphasizes the essential learning outcomes of LEAP.

The LEAP essential learning outcomes

The LEAP framework categorizes essential learning outcomes into four overarching categories: (1) knowledge of human cultures and the physical and natural world (2) intellectual and practical skills, (3) personal and social responsibility, and (4) integrative and applied learning. While all three service academies stress intellectual and practical skills, the precise details vary from one to another. But there are several themes in common among all three, the most significant being the concept of providing an intellectually challenging program of study that emphasizes practical applications and projects with an expectation of high standards of excellence. As the academic deans of our academies, we like to remind people that no one chooses to attend a service academy because it is easy. Our students are looking for a challenge! And that challenge is based in a strong core program—consisting of over half of the semester hours of the general education program—requiring a proficiency in technical disciplines, such as mathematics, computing, chemistry, and physics; humanities disciplines, such as history and English; social science disciplines, such as political science; and, in some cases, one of several foreign languages. But not one of our graduates is enrolled with the goal of becoming a mathematician, chemist, historian, writer, etc. Our graduates are learning to lead and to do so in a wartime environment. So in each of our core disciplines, we emphasize critical thinking, inquiry and analysis, problem solving, and communication. Throughout these core disciplines, we foster teamwork, decision making (often under stress), and commitment and discipline. These are the enduring skills that will enable our graduates to be successful leaders, regardless of their individual academic interests.

Every institution of higher learning is presented with social and cultural challenges associated with transitioning young adults into educated and responsible citizens. In keeping with our shared service academy mission “to produce leaders of character,” our shared goal is to create a culture where dignity and respect for self and others is the foundation for all aspects of life at our respective service academies. We all emphasize in our educational learning outcomes intentional efforts to develop in our graduates personal and social responsibility, specifically civic knowledge and engagement; local and global intercultural knowledge and competence; ethical reasoning and action; and foundations and skills for lifelong learning. These are anchored through active involvement with diverse communities and real-world challenges.

At each of the academies, courses in foreign language are not just about language as a technical competency, but also about learning how to interact in and understand a culture different from one's own. Ethical reasoning is not an academic concept studied only in a core philosophy course, but something applied very personally in many settings including day-long character enrichment seminars, for example, wherein volunteer adult facilitators engage cadets in personal small group discussions about how the cadets might handle real-world moral dilemmas that these facilitators themselves experienced personally. At the Air Force Academy, in the required senior course in English, all cadets prepare a capstone speech and essay addressing the moral and ethical dilemmas inherent in service as a military professional and warrior. They wrestle with the reality that the commission as officers they are about to accept requires them to respect, uphold, and protect the dignity and worth of individual human beings, even as they might be called to fight and kill others.

One of the many nice things about serving at our military academies is that faculty understand
it is essential to provide our cadets and midshipmen with integrated and applied learning opportunities in order to prepare them for military service in the twenty-first century. Each of our academies provides multiple, progressive learning opportunities across our key curricular areas and through educational enrichment activities. Our faculty composition directly contributes to this integrative and applied learning environment; many of our faculty and staff members are military officers who have recently served in the environments our graduates will encounter, so they easily provide context and demonstrate relevant application to classroom and other learning opportunities. The military faculty and staff are partnered with our civilian faculty who infuse the depth of disciplinary expertise and pedagogy for teaching and learning into our classrooms. In the academic arena, following the LEAP framework, the curriculum is designed to build an essential knowledge foundation, provide focused application of knowledge in specific disciplinary areas, and then integrate knowledge and application across disciplines through the medium of senior research design or thesis projects in the student’s major. Each academy has robust relationships with their service and other governmental organizations that provide problem domains for such work, and in return these organizations receive highly valued, creative solutions to difficult, real-world issues.

By the very nature of our institutions, much integration and applied learning naturally occurs outside of our academic programs. Militarily, our cadets and midshipmen are required to complete training that progressively develops them from being a good team member to being a good team leader. They are put into positions of increasing responsibility in which they have to understand and synthesize lessons learned from previous experiences in order to lead successfully. Each academy also has specific curricula designed to teach and reinforce personal and social responsibility, and ethical conduct. Lessons are typically taught within the context of applied situations typically encountered at the academy or in military service. Cadets and midshipmen have to understand these lessons and apply them within the context of their leadership positions and in being a good citizen of the academy. Educational enrichment activities such as research, internships, study abroad opportunities, competitive athletics, and academic and social student clubs also provide significant applied learning opportunities for integrating knowledge and experiences across our key curricular areas (academic, military, physical, moral-ethical). Your service academies have had great success with using the integrative and applied learning concepts of the LEAP initiative.

Conclusion
Military service academies are unique in many respects. We certainly have our own culture and, in many ways, a different approach to educating our students because of our mission to develop leaders for the nation’s defense. Lessons from Iraq and Afghanistan demonstrate that our military needs scholar-warriors who can seamlessly and successfully operate in the context of both “Athens and Sparta.” But, while our approach may be different, we remain committed to providing the very best of what a liberal education represents. The educational learning outcomes differ somewhat between each of the service academies due to the needs of our respective services, but each of us develops our graduates using the powerful educational framework advanced by AAC&U’s LEAP initiative. We learn and grow together, and we challenge each other to continue to raise the bar of excellence. General Douglas MacArthur said it best: “On the fields of friendly strife are sown the seeds that on other days and other fields will bear the fruits of victory.”

This makes serving at America’s service academies—your service academies—a truly rewarding and fulfilling experience, an honor, a privilege, and an important responsibility in service to our nation.

To respond to this article, e-mail liberaled@aacu.org, with the authors’ names on the subject line.
Using Program Evaluation to
DAVID FAIRRIS

Several years ago, when I was associate dean in the College of Humanities, Arts, and Social Sciences, a new senior administrator on campus expressed the view that one of our premier first-year experience programs in the college was too expensive and that a different model, based on an approach taken at the administrator’s previous institution, was cheaper and far superior. It was only after I engaged in a careful analysis of the program’s impact, and distributed the results to the administration and larger campus community, that the program was saved from likely extinction. I learned an important lesson from this experience, one that I carried with me as vice provost for undergraduate education, a position that placed me in charge of a number of academic support and cocurricular programs on campus. In this article, I describe the approach we take to program evaluation at the University of California–Riverside (UCR), and recount some of the ways in which we have utilized evaluation results to enhance student success.

Identifying factors that affect attainment of program goals

The starting point for an evaluation study is a clear statement of program goals. Increasing retention rates or boosting graduation rates are two commonly-cited goals of academic support and cocurricular programs. However, many student support programs have less lofty goals—such as fostering student-faculty interaction or creating awareness of the support services available to students on campus—which may align with the larger objective of improving retention or graduation rates, or may be viewed as important contributors to campus-level learning outcomes. Whatever the goals of a program, it is imperative that they be clearly articulated (and enthusiastically embraced) by program providers.

Once the desired outcomes or goals of a program have been identified, it is useful to begin with an exploration of the various factors that influence these outcomes. For outcomes such as grades, retention rates, or time to degree, most institutions of higher education possess electronic student records that contain this information, along with student attributes such as high school grade point average, SAT score, and first-generation status that might be expected to influence these outcomes. Additional possible correlates—such as paid work hours or plans to attend graduate school—may be gleaned from student surveys and linked, via student identification numbers, to student records data to discover their impact on program goals.

To discern the most important factors influencing student attainment of a program goal, one might begin by exploring simple associations or correlations. Are first-generation students, for example, less likely to be retained than non-first-generation students? This constitutes little more than comparing mean retention rates for the two populations, and asking whether these means are statistically significantly different. A more sophisticated approach would relate outcomes such as retention to an array of possible determinative characteristics in a multivariate framework that allows the analyst to isolate the specific contribution of each characteristic as a distinct factor. One might find in simple correlations, for instance, that Hispanic students are less likely to be retained than Caucasian students and that low-income students are similarly at risk compared to non-low-income students. However, because Hispanic students are also more likely to be low-income, it is unclear which of these two characteristics is dominant. The multivariate framework helps answer this question.

While developing an understanding of the various factors that influence program goals is only a building block in a good program evaluation study, the results of such an analysis may be of value in and of themselves. For example, at UCR, we have discovered the following:

- For our student population, high school grade point average is a far more important determinant of student success—including, for example, first-year college grade point...
average, retention, and likelihood of graduating—than SAT score, a discovery that has caused us to rethink the relative weight we give to these two criteria in recruitment and admissions decisions. (One of the historical reasons for introducing the SAT is that high school grades were unreliable predictors of student success. But, with the large population of traditionally underserved students at UCR, it is the SAT that appears to be unreliable.)

- Living in student housing as a freshman has a positive and statistically significant impact on first-year retention. This insight has led us to initiate special programs for commuter students in hopes of lowering attrition rates for that population.
- Students in different majors progress at very different rates toward graduation, a finding that has fostered a deeper analysis of the causes of these differences in time to degree and spurred us to add courses to summer school offerings that reduce some of the bottlenecks in progression toward degree for students in the most highly impacted majors.

**Evaluating program effectiveness**

Having explored the determinants of specific markers of student success, it is relatively straightforward to embark upon an analysis of program effectiveness. To begin, it must be possible to identify the participants in a particular program from among the larger student body, and then to link participation status to information on individual outcome measures, such as retention, and to determinative characteristics, such as high school grade point averages and SAT scores. Program evaluation entails a comparison of outcomes across participant (i.e., “treated”) and nonparticipant (i.e., “control”) groups of students who are similar in every relevant respect. If the two groups are indeed similar with respect to all important determinative characteristics, then the difference in mean outcome measures across the two groups constitutes an estimate of the impact of the program.

The chief challenge in program evaluation is ensuring that the treated and control populations are indeed “similar in every relevant respect.” A straightforward way of both adjusting for observed differences across the two groups and testing for program impact is to utilize the multivariate model of outcome determinants discussed above, and to add to the list of determinative variables a variable indicating whether the students participated in the specific program in question. The association
between this dichotomous variable and the outcome measure in the multivariate framework constitutes an estimate of the mean difference in the outcome variable due to the program, holding all other observed determinative factors constant. In this way, by including student demographic and behavioral characteristics among the group of determinative variables, the estimated program impact is for treatment and control groups that are observationally equivalent.

However, just because two groups are equivalent with regard to “observable” characteristics does not mean that they are “similar in every relevant respect”; “unobservable” characteristics may interact with both program participation and outcome measures to confound the multivariate evaluation results. Suppose, for example, that students who are more motivated to succeed are also drawn disproportionately to an academic intervention program. Even if the treated and control comparison groups are equivalent with regard to observable characteristics such as high school grade point average and first-generation status, because we are rarely able to observe student “motivation,” the estimated association between program participation and the outcome measure will capture both program effects and the fact that program participants are simply more motivated to succeed. Of course, the latter is not a causal result of the program, and so it represents a confounding influence on the estimated program impact that is difficult to disentangle from the true program effect. In one case at UCR, we addressed this problem by randomly assigning students to one of our first-year experience programs. This ensured that the treated and control groups were indeed similar in every relevant respect (both observable and unobservable) and thus rendered a more accurate assessment of program impact.

Insights from program evaluation at UCR
At UCR we have utilized multivariate program evaluation analysis to study the effectiveness of a variety of programs, including the impact of our supplemental instruction program on grade in the course, our first-year learning communities on first-year retention, and our summer bridge program on freshman year grades and retention. (Supplemental instruction utilizes upper-division undergraduate students to provide additional academic support in courses with high D/F rates. Learning communities take a variety of forms on the UCR campus, but in every case they are freshman transition programs that offer an intimate learning environment to first-year students. Summer bridge is a prematriculation transition program for freshmen in which students take preparatory writing or mathematics courses that put them on track to succeed in college-level coursework as they begin their freshman year in the fall.) These analyses have yielded a number of important insights.

Program evaluation results can guide resource allocation decisions, providing campus units with information on how best to spend their limited resources to get “the biggest bang for the buck.” For example, after assessing the overall impact of the supplemental instruction program on grades, we proceeded to break out the results by course and found enormous variation in estimated impacts across courses. Armed with this knowledge, we reallocated the program budget toward those courses with the highest estimated impact on course grade.

Program evaluation results may be used to establish and then spread best-practice program features. For example, having analyzed the overall impact of our first-year learning communities on student retention, we then estimated the separate impacts by college. Historically, different colleges on campus have adopted different features for their learning communities, and our program evaluation findings suggested that certain features had more significant impacts on retention than did others. These findings led to conversations across the colleges, followed by experimentation and convergence around best-practice features, with the end result being improved overall effectiveness.

Program evaluation results that are disappointing may spur further research, followed by program tinkering or even radical reform in an effort to establish improvements. For example, early evaluation results suggested that our summer bridge program was not as effective as we had hoped. Grades in subsequent math and writing courses were worse for students who had taken summer bridge coursework than for students who took these same preparatory courses in the fall quarter of their freshman year. Further analysis suggested that the length of the summer courses might be at fault. After expanding the length of the summer program from five to seven weeks, summer bridge students are now doing at least
as well in subsequent courses as their counterparts who begin coursework in the fall.

Program evaluation results that are positive may spare programs from budget cuts. This is illustrated by the example I offered in the opening paragraph of this article. In this case, program evaluation results suggested that the first-year learning community program was in fact enormously successful, not just in enhancing student retention, but in promoting early declaration of a major by undeclared students and improving student writing skills. The program is now warmly embraced on campus, well funded, and widely advertised in recruiting events for the college in which it resides.

Additional benefits of program assessment

There are additional benefits from engaging in program assessment, quite apart from improving budgetary efficiency and enhancing overall program effectiveness. Possessing both a commitment to program evaluation and the capacity to engage in the analysis of program effectiveness significantly enhances the chances of attaining outside funding to support student services. Whether they be private foundations or federal agencies, funding organizations want to be assured that a careful assessment of funded programs will take place. Being able to write effectively about the history of program evaluation in your unit, and thereby to signal your capacity and commitment to similar evaluations of the new programs for which you are seeking funding, can convince agencies that their money would be well spent on your campus.

Moreover, program evaluation is part of a larger "culture of evidence" approach to decision making and quality assurance that regional accrediting agencies find attractive. Thus, engaging in careful program evaluation enhances the chances that campus accreditation or reaccreditation proceedings will be successful. Program evaluation is the student support services counterpart to learning outcomes assessment in the curricular realm. Both require that clear goals are annunciated and that there is careful assessment of whether those goals are achieved.

Assessing programs should become part of the cultural fabric of a unit and campus, altering the way every decision maker thinks about the work he or she does. Key program providers should be at the table when evaluation results are discussed, and should be encouraged to comment freely on possible explanations for the findings. If the evaluation results suggest that a program is not as successful as desired, all should be involved in brainstorming solutions. This is not a time for performance appraisal or criticism of program staff. Such an approach to program evaluation yields several additional benefits.

Familiarity with the practice of program evaluation in one area may lead staff to question program effectiveness in other areas. For example, having had some experience with program evaluation in several cocurricular activities, staff involved with math and writing placement exams began to question whether these exams were adequate placement mechanisms at UCR, and especially whether additional information, such as high school grades in math and English courses or SAT scores in these subject areas, could be used to bolster the information gleaned from placement exams alone.

An understanding of the methodological features of program evaluation—such as the need, when making causal inferences, to compare groups that are "similar in every relevant respect"—affects the way staff come to understand and interpret data. For example, when it was pointed out by system-wide administrators that UCR possesses a lower student participation rate in education abroad activities compared to other campuses in the University of California system, some staff wondered whether this reflected poor marketing and staff inefficacy (as some alleged) or, rather, the fact that UCR students disproportionately come from low-income families and find it difficult to afford the added expense of an educational experience abroad.

Evaluating the effectiveness of cocurricular programs and academic support services is the next frontier in the effort to ensure educational quality and student success in higher education. Institutions ahead of the curve in this regard can benefit enormously.

To respond to this article, e-mail liberaled@aacu.org, with the author’s name on the subject line.
What is global literacy, and how do we teach it?

Within higher education in the United States and Canada, calls to promote global awareness and global literacy among undergraduate students have become increasingly urgent (Clark and Clark 2003; Hooker 2003; Burnouf 2004). Yet, there are multiple challenges in achieving these outcomes. One challenge lies in making this “literacy” authentic and relevant for diverse students aspiring to be professionals in different fields. A second challenge is reconciling the tension between teaching for deep mastery of knowledge in a subject area, on the one hand, and teaching for broader global awareness through a collection of courses or experiences, on the other. A third challenge is developing in students the tacit understanding that enables them to link the global and the local in ways that are meaningful and useful in their work and their lives. This is particularly relevant in science, technology, engineering, and mathematics, where the problems students see in the classroom are usually decontextualized, and where solutions are developed as if the broader (e.g., social, environmental, political) context were irrelevant. Perhaps the greatest challenge of all is supporting faculty as they wade into the necessarily interdisciplinary nature of such teaching and learning.

The primary question, however, is: What is global literacy, and how do we teach it? In this article, we describe our attempt at Carnegie Mellon University to approach this question in a semi-empirical way by gathering the outcomes faculty members see as most salient for global literacy.

What is global literacy?
The Association of American Colleges and Universities (AAC&U) has proposed that colleges and universities “create settings that foster students’ understanding of the intersection between their lives and global issues and their sense of responsibility as local and global citizens” (2011a). In its Greater Expectations report, AAC&U recommended that “students should have sustained opportunities to learn about: the human imagination, expression, and the products of many cultures; the interrelations within and among global and cross-cultural communities; means of modeling the natural, social, and technical worlds; and the values and histories underlying US democracy” (AAC&U 2002, xii). But how do we make this advice concrete within our learning and teaching?

In this context, it is worthwhile to consider the definition of “literacy.” The term implies

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mastery of a particular vocabulary, of particular concepts and definitions, as well as a working knowledge of particular systems and a fluency in getting quickly to the core knowledge or skills needed to exercise this literacy in a specific context. Literacy is a means to being competent in society. Setting the goal of universal literacy, the United Nations (UN) proclaimed a “United Nations Literacy Decade” (2003–12) under the motto “Literacy as Freedom.” In doing so, the UN acknowledged an expansive understanding of “literacy”: “This motto reflects the fact that over the past few decades, the conception of literacy has moved beyond its simple notion as the set of technical skills of reading, writing and calculating—the so-called ‘three Rs’—to a plural notion encompassing the manifold meanings and dimensions of these undeniably vital competencies. Such a view, attending recent economic, political and social transformations, including globalization, and the advancement of information and communication technologies (ICTs), recognizes that there are many practices of literacy embedded in different cultural processes, personal circumstances and collective structures” (UNESCO 2004, 6). This definition emphasizes that “literacy” no longer signifies a narrowly defined set of “technical skills,” but rather encompasses a more complex notion of “vital competencies” that an individual should possess in order to function in today’s world as a participant in decision making. In this sense, then, the expectations of global literacy overlap significantly with the aims of contemporary liberal education.

Especially since the 1960s, American colleges and universities have been largely successful in producing educational models that balance pragmatism and idealism. These models provide students with the means to pursue free inquiry with open minds and to make informed, autonomous decisions. The contemporary challenge for American higher education is to ensure that a liberal education continues to serve graduates well in today’s “global world.”

Leaders in engineering education began early to examine and articulate what it means to be “globally competent” within their discipline. When ABET—the organization that accredits college and university programs in the disciplines of applied science, computing, engineering, and engineering technology—revised its accreditation criteria in 2000, it added the following criterion: “the broad education necessary to understand the impact of engineering solutions in a global and societal context” (ABET 2011). Reviewing the need for globally competent engineers, Downey et al. propose the following learning criterion for engineering students: “through course instruction and interactions, students will acquire the knowledge, ability, and predisposition to work effectively with people who define problems differently than they do” (2006, 110). In a different vein,
Langran, Langran, and Ozment (2009) describe the competencies required of global citizens in legal, psychological, and political terms.

The challenge of global literacy for students—especially those in technical and scientific fields, who spend most of their time thinking in context-independent domains—is knowing when to invoke the required global knowledge, and recognizing which questions are appropriate. For this to happen, global awareness needs to be thoroughly integrated into a student’s framework for problem solving and decision making. Students need to be able to think about relevant global issues and questions as automatically and fluently as they of global issues and disciplinary problem solving often develop in separate spheres and fail to coalesce in ways that are meaningful for students.

For this reason, embedding a global dimension in subject-matter courses across the disciplines—the approach we have taken at Carnegie Mellon—may have special promise. In what follows, we describe how we went about articulating a mission for global education, embedding global content in the subject areas, and developing a preliminary set of global literacy objectives to inform assessment and pedagogy. It should be understood that this is a work in progress, so we end by describing the steps we intend to take next. Moreover, this is only one piece of a broader program of global education at our university (see www.cmu.edu/global/education).

**Figure 1. Vision and mission statements for global education**

**Vision**
Carnegie Mellon students will be aware, socially responsible leaders and citizens of the global society of the 21st century. They will develop an appreciation for the diverse perspectives and historical contexts of the cultures of the world and for the range of ways of working, learning, and living. This is our context for a “global education.” Such an education, fully realized in the Carnegie Mellon environment, will assist our students to become engaged citizens of the world, reflective, informed and compassionate in their actions and decisions. They will have a positive impact on the world through the cultural awareness and competence they bring to their professions and through their participation in their communities.

**Mission**
We strive to create a community—faculty, staff, and students—that is dynamically engaged with other peoples and other cultures through their interactions abroad, at Carnegie Mellon, and within the curricula of their various specializations. Central to such an engagement is an understanding of history, culture, and worldviews; the mastery of the relevant systems of knowledge; an exploration of the interaction and transformation of the world through technology and the full ramifications of the modern technological systems in the global context; the critical thinking and knowledge of analysis about the great intellectual debates in history and in the contemporary world; as well as an ability to work with people of diverse cultures and in diverse countries.

Indeed, their very “mental models”—those deeply held models of the world that we summon automatically—have to be both global and local, as befits the context. This level of fluency requires the kind of expertise that develops over time. Yet, students often encounter global issues only through intermittent exposure in select courses, or through experiences of living and working abroad that are separated, geographically and intellectually, from their growing disciplinary competence. Thus, knowledge...
in consultation with the deans of each of the university’s seven colleges (see fig. 1). In addition to the specified knowledge and skills, we included “an ability to work with people of diverse cultures and in diverse countries.”

**Developing global content in the subject areas**

To realize our vision, we invited committed faculty members to incorporate global learning into their disciplinary courses. That is, rather than dictate the desired outcomes for global literacy, we shared the mission and vision statements with faculty members and, in a request for proposals, invited them to design “global content” within or as the main theme of their courses. The university president provided competitively selected faculty members with seed grants to support course development. The funding lasted for three cycles, with the understanding that the courses would then become institutionalized; that is, they would continue to be offered following the cessation of funding. Faculty members were able to use these grant funds at their own discretion to design, teach, and refine their courses. Some faculty members used the funding to bring in expert speakers for module development, to purchase telecommunication equipment, or to cover travel expenses; some used it to support course content preparation during the summer.

The seven courses selected for funding are shown in figure 2. The only condition of the award was that the faculty members had to agree to teach and refine their courses over the three cycles during the three years of the project. The project participants met once per semester to report on the progress of their courses and to share lessons learned.

At Carnegie Mellon, global courses are offered in a range of disciplinary contexts and employ diverse strategies to incorporate a global dimension. In Technology for Global Development, for example, faculty from computer science, public policy, and history examine various dimensions of development and their contexts for technology. After completing a final project on a particular case, students have the option of applying for Technology Consulting in the Global Community, a summer experience in a developing country where they help a governmental agency with projects needing expertise either in computer science or design or in information systems.

In both Global Project Management and International Collaborative Course Management, students from several different countries work collaboratively on a problem in one of six countries. Working in teams, the students are connected through video technology for group meetings and consultation. As they try to bring their technical expertise to new contexts, the students see how local context shapes what they had thought of as universal technical knowledge and practices. The cognitive dissonance they experience in these situations provides a deep and lasting learning experience. In one extreme situation, two American engineering students who were dubious about the technical building practices suggested by their Turkish counterparts raised money to visit Turkey and found to their surprise that these practices really did work.

Through a few of the global courses, students on Carnegie Mellon’s campus in Pittsburgh, Pennsylvania, have been connected with students on our campus in Doha, Qatar. This classroom-level connection between the campuses has resulted in especially rich discussion among students from more than

| Figure 2. Educating for Global Awareness courses |
|-----------------|-----------------|-----------------|
| **Course**      | **Core Discipline** | **Location**   |
| Disastrous Encounters | History          | Pittsburgh, Doha |
| Technology for Global Development | Computer Science    | Pittsburgh |
| Mapping Urbanism | Architecture      | Pittsburgh, Doha |
| Global Project Management | Information Systems | Pittsburgh, Doha, Singapore |
| Health, Development & Human Rights | Philosophy       | Pittsburgh |
| International Collaborative Course Management | Civil Engineering | Pittsburgh, Brazil, Turkey, Israel |
| Biotechnology Impacting Our Selves, Society, and the Sphere | Biology | Pittsburgh |
twenty countries. In the global faculty working group discussions, faculty members often cited the interactions among different worldviews as the most significant learning experience for their students.

Defining global literacy outcomes
In order to extract the set of global learning outcomes that faculty members implicitly had built into the courses, we interviewed fourteen of the instructors of global courses. These instructors represented a range of disciplines, and their courses included some from the president’s project and some from the approximately forty-five other global courses offered across the university. The instructors were asked what “global literacy” meant to them in the context of their particular courses, and how they assess whether students have, in fact, achieved this literacy. Based on these interviews, we identified an overarching set of global literacy outcomes that we believe encompass the specific goals of these instructors. Perhaps not surprisingly, and despite the different disciplines embodied in the courses, there was a high degree of convergence among the goals. We then organized the outcomes into three general categories: knowledge and intellectual skills, social/cultural competencies, and ethical dispositions (see fig. 3). While we recognize that no single course would or should seek to meet all these goals, our hope is that by refining this list with feedback from a wider group of faculty, we can identify global literacy outcomes that are both broadly conceived and disciplinarily meaningful.

While skills such as critical analysis and obtaining and analyzing information are part of all higher education objectives, there is an expansion of the scope of such analysis when faculty members articulate these as objectives for global learning. In the knowledge and skills category, the context and system dependence of solutions are novel aspects introduced by the global-literacy requirement—especially for faculty in science, technology, engineering, and mathematics. The sets we called “social/cultural competencies” and “ethical dispositions” emerged quite clearly from discussions with faculty as essential elements of global literacy, yet many of those same faculty members said they were surprised to see these competencies identified as distinct learning objectives.

**Figure 3. Components of global literacy**

**Intellectual Skills and Knowledge**
Students will be able to
- analyze global issues in political, economic, socio-cultural, historical, and environmental context;
- describe global systems—their characteristics, components, dynamics, evolution and implications;
- trace global connections historically and in the contemporary world, linking the global and the local in meaningful ways;
- apply appropriate models to explain and predict global trends and evaluate policies with global implications;
- explore diverse cultural perspectives before framing problems or proposing solutions;
- challenge assumptions based on particular cultural and historical backgrounds;
- critically analyze the nature and merit of claims about global events and relationships.

**Social/Cultural Competencies**
Students will be able to
- observe carefully and analytically in unfamiliar contexts to identify meaningful patterns of interaction;
- listen respectfully, recognizing differences in communication style and etiquette across cultures;
- communicate effectively in various media (from face-to-face interactions through remote technology) with people from different backgrounds;
- utilize local resources and knowledge appropriately to answer questions and solve problems;
- work productively in teams across time, distance, and cultural/disciplinary differences;
- adapt flexibly to diverse cultural contexts, uncertain circumstances, and unanticipated obstacles.

**Ethical Dispositions**
Students will
- recognize shared interests—how the lives and fates of people in other parts of the world intersect with their own;
- develop ethical positions about global issues that are informed, thoughtful, and nuanced;
- engage in actions and behaviors that demonstrate a sense of global responsibility.
Next steps
Having identified a set of preliminary global literacy outcomes, our next step will be to seek feedback on them from a wider group of faculty in order to identify gaps, determine whether some objectives envelop others, and refine the list. Our goal is to construct a core set of global literacy outcomes that grow directly out of disciplinary applications of global knowledge and skills. This set of outcomes can then serve as the baseline for developing appropriate course-level or university-wide assessments of global literacy, as well as appropriate pedagogies for developing global dispositions and competencies. In addition to informing assessment and instruction, we believe that the simple identification of a robust set of global literacy objectives will prompt faculty members to think about how to foster global knowledge and skills in their own courses.

Conclusions
In an overarching way, attaining global literacy involves developing a broader perspective and the ability to bring considerations of a larger than immediate and local context to examining issues, gaining understanding, and solving problems. The kind of learning experiences that accompany linguistic and cultural immersion, and that lead to the development of deep knowledge about a set of environments that are very different from one’s own, can provide the scaffolding for a globally literate way of knowing, thinking, and acting. With fifty years of experience in international education as part of general education, American educators have reached the point where integrating global learning across all we teach is an imperative.

Culling from the experiences of various faculty and global education projects, we may be able to come to a well-defined set of competencies that comprise global literacy from the perspective of the disciplines. In this article, we have described our first foray into a systematic study of these elements. The convergence of the set of skills defined by faculty members in diverse disciplines points to the feasibility. Integration of global literacy skills into the content areas of a major begins to address the various challenges we discussed at the beginning of the article. The literacy skills students gain are authentic to the individual disciplines and contribute to deep learning, rather than being in tension with it. And faculty members are in the comfort zones of their expertise. The advantages of embedding global literacy skills into courses in the majors are that students are given opportunities to practice and hone these skills at advanced levels, and that they can learn to use them within the context of their future professional work.

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Starting in School... 

Through its signature initiative, Liberal Education and America’s Promise (LEAP), the Association of American Colleges and Universities (AAC&U) is promoting a vision for learning that begins in school:

- Rigorous and rich curriculum focused on the essential learning outcomes
- Comprehensive, individualized, and learning-centered advising
- Participation in service learning and civic engagement activities
- Substantive culminating projects assessed for achievement of essential learning outcomes

The LEAP initiative is devoted to the well-being of colleges and universities—but not in isolation. It also advances a fundamentally democratic vision for school-to-college alignment. The concept is grounded in the belief that all students—no matter their socioeconomic position, no matter their race or ethnicity, no matter what grounds for difference—should benefit from the best that a liberal education can provide. The future well-being of our democracy demands no less.

Now, a period of crisis in public education, is a critical time to renew and develop that commitment—not despite the crisis, but through and because of it. As funding for public education declines and the need for higher-quality learning makes ever stronger claims on our attention, AAC&U sees renewed investment in P16 (pre-kindergarten through college alignment) as a matter of urgency. Amid the rush to increase productivity—outputs such as numbers of degrees and certificates—we know we must provide robust leadership for high-quality learning for everyone. As the learning outcomes movement continues to gain strength in postsecondary education, it is high time to think again about continuity and collaboration with schools.

A new perspective on school to college alignment

In 2009 AAC&U invited Achieve, Inc., a bipartisan nonprofit organization devoted to school reform, to join an experimental convening on P16 issues. Invited participants came together to discuss school-to-college alignment, focusing attention on student learning outcomes and student work. The leaders of the project were thinking of grades nine to sixteen as a continuum. By imagining continuity across that span of grade levels, we supposed it might be easier to think of shared assessment of learning across what has persisted as a big divide between grades twelve and thirteen.

In 2009, this approach—focusing on aligned student work, assessment of that work, and shared expectations for achievement—was not the typical way to address the topic of school-to-college alignment. The effects of the No Child Left Behind Act have not been conducive to such an approach. No Child
Left Behind brought long-overdue attention to an ideal of educational opportunity for students from all racial/ethnic and socio-economic groups. But it also ushered in a new era of standardized high-stakes testing. It focused this testing on skills along a narrow band of learning within the much broader expanse of human cognition. As any parent of public school children can attest, standardized testing in English Language Arts (ELA) and mathematics now dominates the school experience, eclipsing much that school used to do. Children now spend not days but weeks on preparation and testing. They “bubble in” answers to multiple-choice questions, and they produce endless BCRs (brief constructed responses). The seventh grader in my family cheerfully reported this spring that he knew why: “We take tests to make sure the school has money. We take tests to earn money for the schools.” My fifth grader: “This is our year to take the science test. They told us to learn science from the test. It isn’t the same as the MSAs [the Maryland School Assessments], but really, I think it is about math. They gave us compasses and protractors.”

The focus on testing in ELA and mathematics likewise makes meaningful shared attention to classroom-based student work much more difficult to achieve when school and college faculty get together. It makes shared attention to out-of-classroom learning—in the library, in the arts, and on the playing field—more difficult to value. It prevents teachers from fostering creativity and innovation—the very characteristics of American education that educators and employers around the world now want to emulate. These long-valued priorities for education in the United States have been relentlessly and effectively pushed aside. The attention to testing overshadows discussions of the curriculum and classroom-based assessment. It disrupts what could be a continuum of learning across the curriculum between school and college, a continuum that a modern democracy ought to provide for all students.

AAC&U and Achieve agreed to talk about alignment from a new perspective in 2009 because they thought new insights might emerge. They hoped to foster new connections and find new collaborative pathways that might be brought to scale. The idea to focus on learning outcomes flowed naturally from work both organizations had been doing separately for years.

In 2005, the American Diploma Project (ADP), an initiative sponsored by Achieve, opened work in a number of states. The project produced a set of benchmarks in ELA and mathematics, which cross-functional teams of school and college educators reviewed together. The goal was to reach agreement on a set of college-ready high-school completion benchmarks that could be made available nationally, and that could be used to guide schools in individual states to work with expectations for performance that colleges and universities in those states could endorse. The ADP also produced a set of cross-disciplinary proficiencies that emerged through the combined work in the states (see fig. 1). Achieve published these proficiencies in 2008. The proficiencies had a much wider curricular reach than did the specific work in ELA and math from which they arose. They were related to the more discipline-specific work in ELA and mathematics, but also identified broad and integrative goals across all disciplines.

The cross-disciplinary proficiencies have not had much staying power or impact on school reform. But it is worth noting that the proficiencies share characteristics with the desirable

Figure 1.

ADP cross-disciplinary proficiencies

**Research and Evidence Gathering**
- Conduct research and utilize the research process to describe, summarize, and synthesize information or to solve problems.

**Critical Thinking and Decision Making**
- Employ abstract and concrete reasoning to make and assess logical inferences, conclusions, and predictions.

**Communication and Teamwork**
- Articulate and translate ideas and information with precision and coherence.
- Understand different perspectives and approaches, and work productively in teams.

**Media and Technology**
- Utilize technology efficiently and effectively.
- Assess and employ a variety of media and formats to evaluate, create, and distribute information.
outcomes of undergraduate education, which, coincidentally, AAC&U had been gathering since the late 1990s from faculty and other educational leaders across the country. AAC&U’s work culminated in the identification of the LEAP essential learning outcomes (see fig. 2).

The convening sought possibility, beginning with the convergence of LEAP and the ADP. Participants imagined ways they could use learning outcomes and attention to classroom-based student work as the basis for collaboration. If the outcomes and proficiencies could be aligned, then it would be possible to construct assignments and assessments that would also be aligned. Imagine an inquiry assignment—an assignment that “conducts research and utilizes the research process,” as the ADP proficiencies recommend. Such an assignment could be designed for grades eleven and twelve, and could be portable to grade thirteen for placement and assessment—or for further development of learning. If such work were done in states or other localities, then it would be possible to design purposeful pathways for students and faculty.

Promising developments
Since that meeting in the spring of 2009, the world of education has changed dramatically. Secondary and postsecondary education still face enormous challenges to collaboration. But opportunities now exist that were not in place two years ago.

As a society, we appear to be reaching a moment of doubt as to the value of standardized testing in ELA and mathematics as the major emphasis and driver of school reform. No Child Left Behind is not producing the intended results.

The current development of the Common Core State Standards Initiative (see www.core standards.org) thus presents us with an opportunity not to be missed. The Common Core is a step forward as a matter of articulation. It is aspirational, detailed, complex, and explicit. Its expectations for student performance are developed beyond one-dimensional approaches to skills or content. It may not do all that many of us in postsecondary education would like to see it do—in science, humanities, or the arts, for example—but it reaches for higher levels of proficiency for all students in ELA, communication, and quantitative reasoning.

Further potential exists in the Race to the Top initiative. As part of the Race to the Top

Figure 2. LEAP essential learning outcomes
Beginning in school, and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining:

Knowledge of Human Cultures and the Physical and Natural World
• Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

Intellectual and Practical Skills, including
• Inquiry and analysis
• Critical and creative thinking
• Written and oral communication
• Quantitative literacy
• Information literacy
• Teamwork and problem solving

Practice extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

Personal and Social Responsibility, including
• Civic knowledge and engagement—local and global
• Intercultural knowledge and competence
• Ethical reasoning and action
• Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

Integrative Learning, including
• Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

reforms, two multi-state assessment projects are in progress to support the implementation of the Common Core. The consortia, the Smarter Balanced Assessment Consortium and the Partnership for Assessment of Readiness for College and Careers, do include development of traditional high-stakes tests. But these projects place a heavy emphasis on examining the work of students in a formative process encompassing many of the components of portfolios. The attention to student work means assessment of learning may be grounded in the classroom.

P16 or P20 councils have soldiered on over the years. Perhaps their moment has come. There is, in fact, significant activity going on right now in locales around the nation. Alignment is happening on the ground when faculty come together to discuss student work. Research conducted to support this claim is finding continuous or continual activity for school-college partnership in California, Florida, Kentucky, Massachusetts, New York, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, Washington State—to mention but a few easily identified examples. The activities are more numerous and varied than I can describe here, but a few examples make the point. The National Science Foundation Math and Science Partnership Program has been supporting P16 partnerships since 2002. Achieve’s American Diploma Project is actively under way in thirty-five states. Early college high schools and faculty development programs sponsored by the Woodrow Wilson Foundation have brought school and college educators together to share assessment of student work and to promote faculty development in many locations across the country. For many years, the National Writing Project has brought school and college faculty and students together for richly interconnected work. A promising initiative sponsored by the League for Innovation in Community Colleges, titled Significant Discussions, offers a blueprint and tools for creating collaboration anchored in community colleges and reaching back to schools and ahead to four-year institutions.

Relationships prompted by these projects do not dissolve as quickly as external funding, in its two- or three-year cycles, will typically disappear. The human side of the work, the satisfaction and reward of collective endeavor for the benefit of all students, tends to endure. Now is an especially good time to take advantage of large-scale national projects and the diverse local activities that already exist in order to build durable structures and pathways on these foundations.

What now is different in higher education that makes such an endeavor imaginable? Faculty are taking seriously and engaging with learning outcomes and assessment. A 2009 AAC&U member survey found that about 80 percent of campuses have identified learning outcomes for their students. Nearly all colleges and universities are working to improve their assessment of those outcomes. It is possible to align school and college benchmark expectations and to share assessments—and to attract faculty use and engagement of them, especially by general education leaders. Many willing partners on college campuses can now enter a conversation about learning outcomes and assessments, and find common ground with colleagues in schools. New information technology tools can connect learning activities and analyze student information from school to college in ways that protect individual rights to privacy and provide valuable information about learning. Think of this: we no longer need to rely only on high-stakes standardized tests to assess learning and set expectations for the smooth transition between school and college. If we share expectations—share benchmarks and learning goals or outcomes—and can document performance through valid and reliable assessment, we can embed assessments in the curriculum in ways that will improve learning at the same time as providing data about student progress.

The sheer popularity of the rubrics developed through AAC&U’s Valid Assessment of Learning in Undergraduate Education (VALUE) project makes the point. More than two thousand institutions, including high schools, have downloaded one or more of the fifteen VALUE rubrics. Faculty across the country—and in a number of other countries—are now developing robust practices using rubrics. E-portfolios are likewise proliferating; many e-portfolio installations use the VALUE rubrics for sampling assessments, for classroom-based assessment, for continuous assessment. It is easy now to share assignments and assessments electronically, through e-portfolios. We have the means to work together, using these tools and learning-centered practices across the divide between school and college.
And there is more. Recent experiments in disciplinary “tuning” converge readily with the work of the Common Core and LEAP, and can connect within multifaceted and intentional plans to improve education for everyone. Prompted by the Bologna Process in Europe, tuning activities are bringing faculty together within their disciplines to align expectations for learning and performance at specified degree levels. This work to clarify expected reference points for learning in selected majors has begun to address both general education and the knowledge and skill bases of disciplines. The work of tuning flows naturally from work to transform the curriculum using learning outcomes. Just as the LEAP essential learning outcomes are to be sought in a developmental, progressive, and intentional way in the whole of liberal education—in general education, in major and minor programs, and in the core curriculum—so tuning activities merge with learning expectations within disciplines.

AAC&U has, therefore, welcomed with enthusiasm the opportunity presented by the recent release of the Lumina Foundation for Education’s proposed Degree Qualifications Profile (DQP). The DQP offers for reference and testing a set of expectations for learning at the associate’s, bachelor’s, and master’s degree levels. Lumina is joining with the higher education community in experimental efforts to both strengthen and demonstrate students’ achievement of key learning outcomes or competencies, across all the many pathways today’s students follow to and through college. The work toward the goals of the DQP aligns with AAC&U’s LEAP initiative and is encouraging highly generative activity. Imagine the possibilities of connected learning prompted by the Common Core State Standards Initiative joined to the learning outcomes movement in the postsecondary sector, developing with reference to expected levels of knowledge and performance through the master’s degree.

Conclusion
The values and benefits of a liberal education are within everyone’s grasp and appropriate to no less than everyone, including members of all racial/ethnic and socio-economic groups. As educators, we can share the effort to focus on our own performance and lead for learning as a matter of policy and practice. We can do this by continuing to focus on values held in common—which is to say, our shared belief that mass education can achieve its democratic goals; it can be more coherent and more effective, and student success and student learning can be far more robust than they are now. If we listen, we hear that faculty believe it is possible to design more efficient and effective learning for all students in our nation’s hugely diverse population. To address these realities, educators and educational leadership should consider ways to work top down and bottom up on policy, top down and bottom up on practice. The educational community, from pre-kindergarten through college, has the means to do that work now, beyond any opportunity we have had before.

To respond to this article, e-mail liberaled@aacu.org, with the author’s name on the subject line.

NOTES
2. The author wishes to acknowledge her co-leaders of the 2009 convening, “To Align Learning Outcomes,” held in Chicago on May 12: Nevin C. Brown, senior fellow at Siena Italian Studies and former senior fellow for postsecondary initiatives at Achieve, Inc.; and Terrel Rhodes, vice president for quality, curriculum, and assessment at the Association of American Colleges and Universities. We thank Carnegie Corporation of New York for helping to make the convening possible.
3. Su Jin Jez of Sacramento State University has produced an annotated bibliography, “P-20 Curricular Collaboration, Annotated Bibliography” (unpublished) that lists publications and websites reporting on faculty work across the divide between school and college. The goal was to find shared investigation of student work and student success and to discover projects that intended to make curricular changes as a result.
4. See www.aacu.org/value.
It is perhaps too early to proclaim the death of the laptop, but the proliferation of mobile devices such as iPads, iPhones, and Android-powered tablets and smartphones cannot be denied. A recent Educause report revealed a stunning increase in mobile technology use by college-age students over the past five years: from 1.2 percent in 2005 to 62.7 percent in 2010 (Smith and Caruso 2010). The Pew Internet and American Life Project reports similar trends, particularly among eighteen- to twenty-nine-year-olds (Smith 2010). Current projections suggest that within the next three years, the use of mobile tablets will overtake desktop usage. The fervor over mobile technology has penetrated learning environments nationwide. For example, in the fall of 2010, Seton Hill University, Abilene Christian University, and Hood College launched programs that provided iPads to incoming students. Stanford Medical School offered iPads to its incoming class in 2010. The Hawaii Preparatory Academy (a high school) designed an entire computer lab for the iPad: rather than fixed desktop computers, students grab an iPad for check-out.

In this article, I offer reflections on the impact of mobile technology for liberal education. These reflections are based on my own experience of incorporating iPads in my communication courses during the 2010–11 academic year. As a member of an interdisciplinary faculty learning community on the use of mobile tablets, I explored the opportunities and limitations of iPads for classroom learning. Each member of the faculty learning community received an iPad and had access to a set of iPads for in-class activities. The Center for Teaching and Learning and University Information Technology Services at Indiana University Purdue University-Indianapolis (IUPUI) selected and sponsored this faculty work group. Based on my experience, observations, and discussions with other participants in the learning community, I encourage an enthusiastic yet tempered embrace of mobile technology, and I offer suggestions for capitalizing on mobile technology to advance liberal education.

How might mobile technology promote the values and outcomes of liberal education?

The “message” of mobile technology for liberal education

Almost every technological innovation promises access, innovation, creativity, and the opportunity to create new connections that promote responsibility and civic-mindedness. Mobile technology has been hailed as an educational miracle worker that can perform a variety of feats, from curing educational apathy to guaranteeing student engagement and learning outcomes. Consider the following account:

Can you imagine telling a kid to stop spending so much time on algebra? Or not to go overboard on researching historical sources? Sounds like pure fantasy, but that could become the new reality if we have the courage to discard an outdated teaching methodology that doesn’t reach today’s students, and instead embrace their bustling, burgeoning digital world. Mobile devices applied in the context of education will engage students, foster deep and meaningful learning, and result in today’s kids reaching frontiers that...
generations before them could never hope to glimpse. (McCaffrey 2011)

Such grandiose success narratives present an incomplete picture, however. Some faculty and administrators resist the incorporation of technology for good reasons. To be sure, social networking, shopping, gaming, and other personal uses distract from and interfere with student learning. In my experience over the past year, almost every student eagerly used iPads for focused, educational purposes early in the semester. Yet by the end of the semester, the novelty had waned. Students became more readily distracted, playing online and exploring other iPad applications. New technology also creates a hidden curriculum for students who are unfamiliar with such devices. Lack of access and exposure can create trepidation for some students, and forcing these students to transition to mobile technology may actually hinder their learning. One student in my course explained, “I honestly spent more time trying to figure out the technology than I did considering the assignment.”

Mobile technology is ineluctable, and faculty and administrators would be remiss if they were to ignore it. However, foolhardy implementation of mobile technology can jeopardize learning outcomes. Mobile technology in education “will fall far short of its potential if it merely repackages our current educational models in digital format. Instead, it should enable students to become more proficient learners” (Weigel 2002, 2). Faculty and administrators must direct the use of mobile technology on college campuses toward liberal education outcomes. How, then, might mobile technology promote the values and outcomes of liberal education? Perhaps the medium itself provides some clues.

Marshall McLuhan (1994) provocatively argued that “the medium is the message.” He warned that people often become distracted by the content of any new medium and, therefore, fail to consider carefully the changes wrought by the medium itself—the ways new technologies alter human interaction, behaviors, and ways of knowing. Indeed much of the buzz about mobile technology focuses on the seemingly endless content: apps, music, videos, news, reference materials, and much more. Although this ready access to information certainly benefits education, I wish to direct attention to the message of the mobile technology medium itself: collaboration.

Mobile devices appear to alter the way students interact, because the devices themselves promote cooperation and invite collaboration. During the first class sessions in which I introduced iPads, almost every student who owned an iPhone attempted to share information, such as websites and pictures, between their personal devices and the loaned iPads. The students’ impulse to send information back and forth between devices suggests that the technology has already changed the way people think about knowledge sharing. Students who grow up with these devices are conditioned to think and create collaboratively. Moreover, the size and design of mobile tablets invite increased collaboration. Computer labs often restrict students to individual stations with screens and towers that prevent easy information sharing. Laptops still create physical barriers in the form...
of screens. While laptops are more easily twisted and passed, they hinder a more communal and synergistic interaction. Mobile devices diminish some of these physical barriers; they can be passed among students as simply as a book. The hands-on device encourages easy sharing of work, and requires a physical closeness that fosters greater interactivity.

In my classes, the medium seemed to have enabled a heightened level of collaboration. The physical closeness and lack of barriers allowed students to see their peers’ work immediately and encouraged real-time critical questions: What does this concept mean? Why did you say those theories had something in common? Student feedback highlighted this collaborative potential. According to one student, “linking [the iPads] together really helped move the pace along and allowed us to get more stuff done at one time.” Another student explained that “the amount and quality of information” improved because students could work interactively on the devices. That is, students could quickly share files and resources and build on one another’s work using applications that allow them to synchronize their work across multiple iPads and to see updates to shared documents. “Working together,” the student continued, “and focusing on the same idea allows the iPad to become very productive.” In short, the design and functionality of the mobile tablets enabled greater co-construction of knowledge and testing of ideas.

Mobile technology uniquely invites collaboration while also providing more opportunities for students to apply their knowledge. Students readily access research materials and information through the web and other applications. A medium that both encourages collaboration and provides unparalleled access to information has great potential to foster a learning environment where students can gain confidence in their ability to discuss, understand, and apply new concepts. The dual benefit of collaboration and information access also has the potential to enhance problem-solving activities. As one student noted, the technology “helps to stimulate and engage the individual in the learning process better than just sitting and taking notes. When you feel that you can apply the concepts you are learning in a hands-on entertaining format, it can be more enjoyable to learn while also making it easier to comprehend the material.”

Recommendations for incorporating mobile technology

The incorporation of mobile technology in higher education appears to be both inevitable and beneficial, so proponents of liberal education should actively and prudently direct it. On the one hand, futile resistance to new technologies disadvantages educators and students alike. On the other hand, plunging with abandon into the waters of new technology unwisely jeopardizes student learning outcomes. How, then, can liberal educators incorporate mobile technology responsibly and with healthy skepticism?

Interrogate technology as more than a tool. Liberal educators must guide students not only to use mobile technology as an educational tool, but also to study the technology itself and to reflect carefully on the implications and consequences of its various uses. How do mobile devices alter our communication, business, and educational practices? How do they affect political interaction and personal relationships? How do the form and structure of the iPad affect our ways of knowing? What insights does mobile technology give us about our culture? Critical inquiry of the medium itself, from multiple perspectives, promotes the development of broadly applicable analytical and interpretive skills. By inviting students to consider the stakes of new technologies, we create opportunities for them to grapple with the ethical, societal, environmental, and global consequences of choice and action.

Promoting inquiry among our students means little unless faculty and administrators model this expected behavior. My interdisciplinary faculty learning community, for example, fostered communication between technology and educational support staff and liberal arts and sciences faculty members dedicated to exploring the educational impact of mobile technology. Such working groups allow faculty to engage in problem solving that transcends individual disciplines and enhances our ability to facilitate similar modes of inquiry in the classroom.

Identify new and shifting learning outcomes. Liberal educators must interrogate the impact of mobile technology on the entire program of liberal education, remembering that the immediate areas of integration, such as the classroom, may not be the most affected. What new literacies must liberal educators incorporate
By inviting students to consider the stakes of new technologies, we create opportunities for them to grapple with the ethical, societal, environmental, and global consequences of choice and action.

Adapt to new literacies.
Interrogating the ways mobile technology reshapes the outcomes of liberal education requires careful consideration of our practices and traditions. We must be forward-thinking in altering our educational approaches. For example, University Library at IUPUI is the first, and currently only, library in the Indiana University system with a mobile website that allows students to search databases and conduct research from their smartphones or mobile tablets. Libraries must recognize that today's card catalogues are increasingly carried in students' pockets.

Likewise, familiar pedagogical practices require innovative adaptation to mobile technology. New practices could be developed in performance-based, problem-solving educational settings where immediate review and feedback is essential by including mobile technology with video recording capability (i.e., the public speaking classroom, theater, or health care provider communication). Consider also how every shift in medium alters conventions of written and oral communication. Students require new skills and sensibilities to persuade and connect in a digital culture of tweeting, face-timing, status-updating, and 140-characters-or-less. Writing-intensive classes could encourage students to develop skills both in composing a standard written argument and in transforming that argument into a series of short, attention-grabbing tweets.

Balance liberal education and technological literacy. The proliferation of mobile technology emphasizes the development of technological skills, to be sure (Goldin and Katz 2008). Students without technological literacy face economic and professional disadvantages, diminished cultural and civic participation, and limited problem-solving capacity. Digital-divide disparities augment these already high stakes. Nevertheless, it would be a mistake to privilege technological literacy or to allow technological skills to constitute the central focus of liberal education. Such a narrow focus would risk creating “graduates who have learned only the technical skills and who arrive in the workplace deep but narrow” (AAC&U 2007, 16–17).
Instead of skills associated with specific technologies, students need to develop adaptable performance skills and artful, critical thinking that will prove valuable for future technological contexts and transformations. The Modern Language Association has argued that “those who learn to read slowly and carefully and to write clearly and precisely will also acquire the nimbleness and visual perceptions associated with working in an electronic environment” (2009, 32–33). Thus, the primary objective should be to incorporate mobile technology and reflect on its use, but not to teach mobile technology skills for job readiness. Moreover, emphasis on technical skills may thwart the natural emergence of peer teaching. In my classes, I witnessed students with expertise in mobile technology readily helping their peers with tasks as simple as turning on the device or functions like copying and pasting or saving images from the web. Significantly, some tech-savvy students seemed to be empowered as learners when they tapped into skills in which they had confidence. They built on the success of teaching technology to others and appeared more receptive to collaborative learning of the course material.

Mobile tablets are not magical harbingers of liberal education outcomes. Devices such as the iPad are born out of skills associated with liberal education, such as problem solving and innovative application of knowledge, but they do not naturally foster those skills. We cannot distribute mobile technology and expect critical thinking and communication skills to follow any more than we could give students a violin and expect them to be virtuoso violinists. Faculty and administrators must actively strive to direct the use of mobile technology toward liberal education outcomes. Neither avoiding mobile technology nor prematurely saturating our campuses with it will foster meaningful relationships to and understandings of technology. Only through thoughtful incorporation of mobile technology and ongoing inquiry as to its consequences and opportunities will faculty and administrators successfully harness this new technology for liberal education outcomes.

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Vera Zdravkovich
CyberWATCH Center
AAC&U’s 2012 Summer Institutes

Institute on General Education and Assessment
June 2–6, 2012
The Hotel at Turf Valley
Ellicott City, Maryland
Deadline for application: February 17, 2012

Institute on High-Impact Practices and Student Success
June 19–23, 2012
Portland State University
Portland, Oregon
Deadline for application: March 1, 2012

Institute on Integrative Learning and the Departments
July 11–15, 2012
The University of Vermont
Burlington, Vermont
Deadline for application: March 16, 2012

PKAL Summer Leadership Institutes for STEM Faculty
July 17–22/July 31–August 5, 2012
Baca Campus of Colorado College
Crestone, Colorado
Deadline for application: April 6, 2012

For more information: www.aacu.org/summerinstitutes