What Do Employers Want From College Graduates?

Success after College  page 6
Education for Life and Work in the Twenty-First Century  page 14
Employer Priorities for College Learning and Student Success  page 22
The LEAP Employer-Educator Compact  page 30

ALSO INSIDE:
American Education Second to None?  page 32
How Students Define Success in College  page 40
Transparency in Teaching  page 48
WHY DO EMPLOYERS WANT FROM COLLEGE GRADUATES?

The learning outcomes that best prepare students for success in the workplace are those that also help students become responsible citizens.
—Debra Humphreys

2 President's Message
Losing Our Way on the Meanings of Student Success
By Carol Geary Schneider
While taking part in Elmhurst College’s annual graduation ceremonies, I was struck by the profound disconnect between the assumptions that now dominate student success policies, on the one hand, and the larger meanings of success so beautifully embodied and expressed by Elmhurst students and alumni, on the other.

4 From the Editor

5 News and Information

FEATURED TOPIC

6 Success after College: What Students, Parents, and Educators Need to Know and Do
By Debra Humphreys
A college education is expensive. While it is clearly worth the investment—and even worth going into at least some debt to achieve—students need to know that not all college degree programs are equal; not all are designed to prepare them for long-term success.

14 One Cannot Live by Equations Alone: Education for Life and Work in the Twenty-First Century
By Norman R. Augustine
Our higher education system, arguably the mightiest arrow in America’s competitiveness quiver, is facing a perfect storm. Government support is declining, and tuition is rising; international competition for student and faculty talent is intensifying; and a technological revolution in pedagogy is gathering momentum. Academia, government, and business must work together to address these challenges.

22 It Takes More Than a Major: Employer Priorities for College Learning and Student Success
By Hart Research Associates
This report provides a detailed analysis of employers’ priorities for the kinds of learning college students need to succeed in today’s economy. It also reports on changes in educational and assessment practices that employers recommend.

30 The LEAP Employer-Educator Compact: Making Quality a Priority as Americans Go to College
Leaders of higher education institutions and of companies and organizations that employ college graduates have come together in a compact to put the quality of college learning at the top of national, regional, state, and institutional agendas—for the benefit of our students, our economy, and our democracy.

COVER:
Wake Forest University
32 American Education Second to None? How We Must Change to Meet Twenty-First-Century Imperatives
By Paul E. Lingenfelter
Considering the heritage we've been given, we have both the resources and the responsibility to meet the challenges we face as the United States struggles to regain—or sustain—its world leadership in postsecondary education.

40 “What Would Make This a Successful Year for You?” How Students Define Success in College
By Nancy Jennings, Suzanne Lovett, Lee Cuba, Joe Swingle, and Heather Lindkvist
How do students define success over their four years of college, and how do their definitions compare to the loftier aspirations voiced in college and university mission statements?

48 Transparency in Teaching: Faculty Share Data and Improve Students’ Learning
By Mary-Ann Winkelmes
The Illinois Initiative on Transparency in Learning and Teaching is a grassroots assessment project designed to promote students’ conscious understanding of how they learn and to enable faculty to gather, share, and promptly benefit from data about students’ learning by coordinating their efforts across disciplines, institutions, and countries.

56 Think about Your Thinking: Reclaiming a Foundation of Liberal Education at the Evergreen State College
By Nancy Koppelman
By writing and periodically revising individual academic statements about their college education, students will, by graduation, have created transcript-ready statements that demonstrate how they think about the shape and significance of their college education.

60 The Decline of Empathy and the Future of Liberal Education
By Nadine Dolby
By nurturing empathy through a liberal education, we can help our students understand their connections to other humans, animals, and the planet—and perhaps, eventually, find their way back to themselves.
Losing Our Way on the Meanings of Student Success

In June, I had the pleasure of taking part in Elmhurst College’s annual graduation ceremonies. Witnessing the speeches and dialogues, I found a welcome congruence between the educational vision AAC&U seeks to advance through our Liberal Education and America’s Promise (LEAP) initiative and what both alumni and students had to say about their liberal education at this “hybrid campus” where many of the students major in professional programs. But the experience, inspiring though it was, also reinforced my sense of the widening disconnect between a data-driven obsession with “student success” and the values and experiences that graduates themselves report as transforming.

Elmhurst’s graduation speaker, Linda Marshall, is an alumna who worked her way through college and then went on to be a pioneering leader in the development of the telecommunications industry. The students listened with rapt attention as she shared her views on what she looks for in new employees and what it takes to achieve long-term success in career and life. Ms. Marshall had never heard either of the Employer-Educator Compact described in this issue of Liberal Education, or of the Hart research on employer priorities for college learning presented here. And yet, she might have been sent from LEAP central casting. What she looks for in young graduates, she said, is the passion for learning, the driving intellectual curiosity, that shows her they are ready to hit the ground running in industries

and organizations that are in the midst of dynamic growth and constant change.

She gave a good speech, one that would be well worth recounting in more detail. But my point here is that this exemplar of career success touted values, love of learning, the importance of the humanities—whose worth she recognized only after she left college—and the kind of intellectual hunger we traditionally associate with a liberal arts education. Yet, like most of her student audience, Ms. Marshall majored in a professional field.

In a separate baccalaureate service, students themselves took center stage to think and talk together about their own educational journeys. Selected presenters, reflecting a diverse array of ethnicities and backgrounds, held a colloquy on the specific “core values” Elmhurst espouses as a context for all aspects of student learning and experience: intellectual excellence; community; social responsibility; stewardship; and faith, meaning, and values. Using their own stories and their own vocabularies, the graduating seniors questioned one another about the meaning of these values in their own experience and their own imagined futures. And, by the very format they chose—queries back and forth to one another—they modeled the idea that the meaning of a complex value is always in the making, always being negotiated, not just through the prisms of our own experience, but rather and perhaps especially in encounters and dialogue with people whose perspectives and histories can be very different from our own.

What particularly caught my attention in these colloquies was the students’ assumption that, no matter what the subject of their majors, values like striving for deeper understanding, taking social responsibility for the increase of social justice, and learning with and from their myriad differences were key components of their entire educational journey at Elmhurst. Policy analysts like to contend that the “liberal arts mission” requires that the majority of an institution’s students complete majors in one of the liberal arts and sciences disciplines. These students knew, from their lived experience, that Elmhurst’s core values permeated every aspect of their educational journey, not just a subset of the academic curriculum. Whether they majored in business, accounting, nursing, or philosophy, they believed that the “Elmhurst Experience” had led them to think in important ways about their responsibilities to themselves and to other people. Crucially, they recognized that the values-based challenges their institution placed before them were, in truth, standards for both reflection and action in all aspects of their lives.

Between them, the students and the employer at this event gave life and voice to the central idea in the LEAP vision for liberal learning and long-term success: big-picture thinking, values-framed
questions, deep analytical inquiry, and collaborative dialogue should be blended together in all students’ educational journeys. Whether we call these liberal education outcomes, or, as New York Times columnist Thomas Friedman puts it, America’s “secret sauce,” these are the keys to lives lived well—and to long-term economic success.

Yet none of this is reflected in the national priorities for student success or in the metrics with which pundits propose to measure how well we’re doing in promoting student success. Indeed, there is a profound and persistent disconnect between the assumptions that now dominate student success policies, on the one hand, and the larger meanings of success that both students and alumna so beautifully embodied in the Elmhurst graduation, on the other.

The first of these is the assumption that college-level knowledge and skills are highly field-specific and, therefore, that the “right” major—meaning one that is closely tied to labor market openings—is all that really counts, both for the future of the individual student and in terms of the value added to the economy. Across all four of the AAC&U-commissioned employer surveys, four out of five responding employers strongly disagree with that assumption. “It takes more than a major,” as you’ll read in these pages, and as Ms. Marshall explained to a field full of new graduates and their families. But policy leaders, quite literally thrilled that they can wield a new metric drawn from correlations between major field and early career income data, don’t want to hear it. Market returns can stand in as a proxy for quality, one economist has assured me. But in fact, those particular market data hide literally all of the “secret sauce” that a good education provides—optimally across all majors. The key point is that every major should be infused with those larger values of rigorous inquiry, evidence-based reasoning, and deep engagement with ethical and social responsibilities that characterize liberal learning at its best. When this blend is achieved, the value added is the sum of all those parts. The content of the major certainly matters; but no single field of study, by itself, can make for a successful career or a worthwhile life.

The second assumption is that the economy is all that matters and, therefore, career preparation is the sole reason for going to college. The “greatest generation” knew better. In 1947, the President’s Commission on Higher Education spelled out a far more ambitious and inspiring set of principal goals for the nation: “education for a fuller realization of democracy in every phase of living; education directly and explicitly for international understanding and cooperation; and education for the application of creative imagination and trained intelligence to the solution of social problems and to the administration of public affairs.” How long has it been since we heard anyone of national stature articulate such a vision for college learning? And yet, the Elmhurst students who spoke at the baccalaureate service got these key points fully. Their education had underscored a larger sense of purpose, and they had taken this set of expectations to heart.

The third assumption, inscribed in the almost unbearably stupid conversation we’re currently having about MOOCs and cost economies, is that the whole point of college is knowledge transmission: great lecturers transmit, and automated “recognize and repeat” assessments are used to discern whether students have grasped the key concepts. Let’s be clear. The real goal of high-quality learning is the student’s mastery of the capacities fundamental to evidence-based inquiry and reasoning: identifying and framing a significant question, organizing the analysis, generating and evaluating evidence, developing an argument, taking into account the likely objections, and then subjecting one’s own judgment to the verdict of others. These capacities—so central both to the knowledge economy and to a complex democracy—are developed through guided practice. No one can simply deliver them to students.

We have entered an era of far-reaching innovation in which we’ll make crucial decisions about what matters in learning and about how to foster it. Elmhurst shows that community matters. Context matters. Values matter. Integrative learning matters. Yet the vast majority of college students matriculate at public institutions where leaders are under pressure to save money by focusing only on completion metrics and asking no questions about educational quality at any level, much less about qualities of heart and mind. So long as policy is focused primarily on aggregated course credits and on majors, our metrics will remain deeply disconnected from our core strengths.—CAROL GEARY SCHNEIDER
Since launching the Liberal Education and America’s Promise (LEAP) initiative in 2005, AAC&U has been advocating for, and providing research to support, the importance of liberal education for the individual student, for the US economy, and for our democracy. In addition to AAC&U member campuses, from whose innovative work LEAP’s twenty-first-century vision of liberal education emerged, an increasing number of employers from all sectors of the US economy are joining the effort to promote liberal education. To this end, more than 130 business and nonprofit leaders and more than 100 college, community college, and university presidents have so far signed on to the LEAP Employer-Educator Compact, pledging to work together in order to ensure that all college students have access to a high-quality liberal education that fully prepares them for life, work, and citizenship. The Compact was released in April at an employer-educator forum held in Washington, DC; the full text is printed in this issue.

To provide some context for this promising alliance between employers and educators, this issue of Liberal Education focuses on the question of what employers want from colleges. The most obvious way to approach this question is by asking employers themselves, which is something AAC&U has been doing for several years through public opinion research commissioned by the association and conducted by Hart Research Associates. The report on the latest employer survey is included in this issue.

Also included are two articles that explore in some depth the relationship between educational quality and student’s long-term success—including, but not limited to, their economic success. The first of these is the lead article, in which Debra Humphreys, AAC&U vice president for policy and public engagement, invites students and parents to become more discerning about their investment in college education; not all degree programs will necessarily contribute to a graduate’s success over the long term, she explains. Humphreys calls on educators, too, to be more discerning, to pursue—and make more transparent to students and prospective students—those educational practices and curricular pathways that are most effective in preparing students for long-term success. In the second article, Norm Augustine, the former CEO of Lockheed Martin, draws on his experience as an accomplished business leader and on his own personal story to raise concerns about the state of education in America and to make connections between educational quality and our nation’s future prospects for economic and civic flourishing.

So, what do employers want from colleges? As this issue makes clear, they want colleges to provide all students with the broad knowledge and high-level capacities that they will need to navigate a fast-paced economy and to contribute to the future of our democracy. In other words, employers want more liberal education.—DAVID TRITELLI
Broad Participation in AAC&U’s 2013 Summer Institutes

Teams from 120 colleges, universities, and state systems in 37 states and 3 countries will participate in AAC&U’s 2013 summer institutes: the Institute on General Education and Assessment, to be held at the University of Vermont; the Institute on High-Impact Practices and Student Success, to be held at the University of Wisconsin–Madison; and the Institute on Integrative Learning and the Departments, to be held at Portland State University. All AAC&U institutes offer participating teams a time and place for sustained collaborative work on a project of importance to their campuses.

Two New AAC&U Publications

This spring, AAC&U is releasing two new publications. The first, Ensuring Quality and Taking High-Impact Practices to Scale by George D. Kuh and Ken O’Donnell, presents research on specific educational practices that are correlated with high levels of academic challenge, student engagement, and achievement.

The authors also explore the effects of these practices on retention and graduation rates, and provide advice on ways to ensure that practices labeled “high-impact” actually include key “quality” components and that all students have access to multiple high-impact practices. Also included are case studies from five campuses where select high-impact practices are pervasive.

The second new publication, Using the VALUE Rubrics for Improvement of Learning and Authentic Assessment by Terrel L. Rhodes and Ashley Finley, addresses common practical questions about rubrics developed through AAC&U’s Valid Assessment of Learning in Undergraduate Education (VALUE) project. The authors provide information about rubric-based assessment approaches—including validity, reliability, and rubric modification—and faculty training in the use of rubrics. Specific examples of how campuses are using the VALUE rubrics to improve student learning are also provided.

Additional information about both publications is available on the AAC&U website, www.aacu.org.

Upcoming Meetings

- October 3–5, 2013
  Global Learning in College: Asking Big Questions, Engaging Urgent Challenges
  Providence, Rhode Island

- October 31–November 2, 2013
  Transforming STEM Education: Inquiry, Innovation, Inclusion and Evidence
  San Diego, California

- January 22–25, 2014
  AAC&U Annual Meeting
  Washington, DC

- February 27–March 1, 2014
  General Education and Assessment
  Portland, Oregon

- March 27–29, 2014
  Student Success
  Chicago, Illinois

In Memoriam: Sherry Levy-Reiner

AAC&U notes with deep sadness and regret the death on May 17, 2013, of Sherry Levy-Reiner, who served as the association’s director of public information and publications from 1985 to 1992. AAC&U member institutions were well served by Sherry’s leadership and hard work, and extend condolences to her family and friends.
DEBRA HUMPHREYS

Success after College

What Students, Parents, and Educators Need to Know and Do

In the most recent American Freshman survey conducted by the Cooperative Institutional Research Program at the University of California–Los Angeles, 85.9 percent of entering students said that “to be able to get a better job” was the number one reason they were pursuing college degrees (Pryor et al. 2011, 9; emphasis mine). Nothing surprising there. Nearly 83 percent in this same survey reported, however, that they also went to college “to learn more about things that interest me,” and 72.4 percent said they pursued a college degree “to gain a general education and appreciation of ideas” (10). While the lingering effects of the recession have spurred many policy leaders, reporters, and commentators to focus narrowly on the “job training” outcomes of college and to question whether one really needs a college degree at all, students seem to understand three important things: a college education has multiple positive outcomes for those who pursue the degree with purpose, good guidance, and hard work; a college degree is essential for success in today’s competitive global economy; and a college education is an investment in future success.

Nonetheless, students—and their parents—are justifiably concerned about how to ensure that their investment in postsecondary credentials really does result in positive outcomes in both the short and long terms. A college education is expensive. While it is clearly worth the investment—and even worth going into at least some debt to achieve—students need to know that not all college degree programs are equal; not all are designed to prepare them for long-term success. For this reason, students need to know more about what it actually takes to “make the most” of their investment. For their part, college educators need to know which educational practices and curricular pathways are most effective in preparing students for success over the long term, and those pathways must be made much clearer to students and prospective students.

DEBRA HUMPHREYS is vice president for policy and public engagement at the Association of American Colleges and Universities.
The good news is that the learning outcomes that best prepare students for success in the workplace are those that also help students become responsible citizens and help them navigate their way through a challenging world. The bad news is that while some students achieve these outcomes at very high levels, others do not—and yet still obtain degrees or certificates. Moreover, many graduates have what it takes to succeed, but stumble in how they conduct their job searches or are inadequately skilled in presenting what they know and can do as a result of their college experience. This is one of the reasons why, even in a period of relatively high unemployment, over half of employers report having difficulty finding qualified candidates for job openings, and one-third say that recent graduates are very unprepared for their job searches (Marketplace and Chronicle of Higher Education 2013, 10–11).

**Bridging the awareness and communications gaps**

Through its Liberal Education and America’s Promise (LEAP) initiative, the Association of American Colleges and Universities (AAC&U) has since 2005 been working to expand understanding of what postcollege success requires and to build a coherent body of knowledge about what really works to prepare students with the knowledge, skills, and responsibilities they need to achieve that success.

Much work still needs to be done, however, to help students and parents understand what a high-quality undergraduate education consists of in twenty-first century contexts and to ensure that every student actually receives such an education. A recent survey commissioned by *Inside Higher Ed* found, for example, that while 40 percent of parents of high school students strongly agreed that “a vocational, professional, or technical certificate or degree program could lead my child to a good job,” only 26 percent strongly agreed that “a liberal arts education could lead my child to a good job” (*Inside Higher Ed* and Gallup 2013, 19–20). It is, of course, the case that some, but not all, technical or professional degrees or certificates lead to good jobs and that some, but not all, liberal arts degrees lead to good jobs. Some degrees also are likely to prepare graduates for success in the short term, but not in the long term, while other degrees position graduates for long-term success—but only if the degree holder goes on to pursue further study. As with most complex issues with multiple dimensions—like the many ingredients that go into success in life and work—the devil is in the details.

One explanation for the divergence in parents’ responses to the *Inside Higher Ed* survey cited above may be that they do not fully understand the differences among the kinds of degree programs on whose relative value they were asked to comment. By and large, the general public does not understand what a liberal education is or that it is possible to become a “liberally educated professional” in some, but not all, professional or technical programs. Many leading institutions are working to ensure that a commitment to both broad liberal education outcomes and field-specific job skills is embedded in all their degree programs, even in professional fields.

In a recent interview, the editors of the new book *Shaping the Future of Business Education* argue, for instance, that “business education, alone and by itself, is not enough. . . . In fact, without the arts and sciences, modern business education is stunted and incomplete” (Jaschik 2013). Unfortunately, too many policy makers fail to recognize the importance of this “both-and” approach and, as a
result, are making short-sighted proposals to scale back liberal arts programs in favor of a more or less exclusive focus on the STEM fields (science, technology, engineering, and mathematics) or on narrowly focused professional training programs. Obviously, liberal arts and sciences fields are still valuable in and of themselves; but they are also urgently needed to help prepare liberally educated graduates in a wide array of other fields. Clearly, higher education must become better at communicating more widely about these issues.

To assist in that effort, AAC&U has prepared a brief guide for use by campus leaders and practitioners who seek to educate students, parents, and colleagues about the meaning of various terms related to liberal education (see sidebar). In addition, AAC&U has commissioned a series of national surveys of business and nonprofit leaders at companies and organizations that hire college graduates in order to paint a more nuanced picture of what success in the workplace really requires. These employer surveys reveal a need for companies and colleges alike to communicate these requirements more effectively and accurately, and the findings have clear implications for students and parents, for college educators, and for employers themselves.¹

**Implications for students and parents**

The findings from the AAC&U employer surveys suggest that the most important thing students and parents need to know is that the undergraduate major isn’t all that matters in determining long-term career success. What employers clearly want and need are liberally educated professionals. They seek to hire graduates with either field-specific training gained through college study or concrete experience gained through work or internship experiences, but they also seek graduates with high levels of skill and knowledge—that is, graduates who possess the cross-cutting capacities that a good liberal education provides, no matter what major field of study a student chooses. As the report on the most recent survey notes, nearly all the employers agreed that “a job candidate’s demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major” (Hart Research Associates 2013, 1). When evaluating colleges, prospective students and their parents should spend at least as much time investigating whether every student at a particular college has access to educational experiences that build these cross-cutting capacities as they spend researching the fields of study in which students can major. A majority of employers believe that “having both

**Liberal Education**: An approach to college learning that empowers individuals and prepares them to deal with complexity, diversity, and change. This approach emphasizes broad knowledge of the wider world (e.g., science, culture, and society) as well as in-depth achievement in a specific field of interest. It helps students develop a sense of social responsibility; strong intellectual and practical skills that span all major fields of study, such as communication, analytical, and problem-solving skills; and the demonstrated ability to apply knowledge and skills in real-world settings.

**Liberal Arts**: Specific disciplines (i.e., the humanities, sciences, and social sciences).

**Liberal Arts College**: A particular type of institution—often small, often residential—that facilitates close interaction between faculty and students, and whose curriculum is grounded in the liberal arts disciplines.

**Artes Liberales**: The historical basis for the modern liberal arts, consisting of the trivium (grammar, logic, and rhetoric) and the quadrivium (arithmetic, geometry, astronomy, and music).

**General Education**: That part of a liberal education curriculum that is shared by all students. It provides broad exposure to multiple disciplines and forms the basis for developing essential intellectual, civic, and practical capacities. General education can take many forms, and increasingly includes introductory, advanced, and integrative forms of learning.

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field-specific knowledge and skills and a broad range of skills and knowledge” is most important for graduates who “want to pursue advancement and long-term career success” (5).

Reading carefully the answers to several questions posed in the survey, it is also clear that employers seek graduates with ethical integrity and with practice in thinking through the ethical dimensions of problems, including problems that originate in their fields of study as well as those that originate in the broader society. Nearly 90 percent of employers agreed, for example, that “all students should learn about ethical issues and public debates important in their field” (9).

Students and parents can help ensure that the college experience actually contributes to the development of these kinds of learning outcomes by asking hard questions of educators. They should ask about the requirements of a major before choosing it, for example. How much writing, research, and project-based learning activities are built into the program? For professional fields, in particular, is there a required course in ethics? Beyond any individual field of study, are the general education requirements designed to develop cross-cutting capacities and breadth of knowledge? Once students learn a body of knowledge or hone a particular skill, what opportunities exist for them to apply their learning in hands-on settings, on or off campus? These are important questions, but it can be difficult to get answers to them during a typical college visit or by searching college websites. Therefore, the burden must surely be shared by educators.

The answers to these and similar questions about the quality of the undergraduate experience should be readily available from college catalogs, websites, and admissions materials.

Implications for college educators

The new employer survey provides important information that students and parents need to know in order to ensure that their investment in college education will have real value over the course of a lifetime. However, it also provides educators with valuable insights into educational and advising practices that can help ensure that every college student is well prepared for future success.

Survey participants were asked about ten existing or emerging educational practices. Several of these practices are clearly seen by employers as having potential for improving the quality of college learning. Several, in particular, emerge as “winners” in the eyes of employers. The top practice they endorse is research. Employers believe that students who are challenged to “develop research questions in their field” and who can conduct “evidence-based analysis” will be well positioned to succeed in the workplace. Employers also believe that students’ courses should help them “develop the skills to conduct research collaboratively,” and they endorse the requirement that students “complete a project prior to graduation that demonstrates their acquired knowledge and skills” (Hart Research Associates 2013, 10). Moreover, employers have for years urged students to complete internships while they are in college, and the 2013 survey indicates that many business and nonprofit leaders continue to endorse that practice. Yet, unfortunately, only about half of all college students currently do internships (Kuh, O’Donnell, and Reed 2013, 5). Again, these findings are not particularly surprising, nor do they indicate a need for radical changes. Nonetheless, the survey
findings do strongly suggest that students’ curricular pathways should be more intentionally designed to ensure that no student can avoid doing collaborative research, learning how to conduct evidence-based analysis, and experiencing either a well-planned and supervised internship or some other hands-on learning experience.

It won’t be enough, however, to revisit curricular maps or to continue to expand faculty development efforts in order to incorporate more active learning experiences. Educators have to take two additional steps. First, these experiences need to be integrated into a coherent whole for each and every student. And this integration needs to occur as a result of enhanced collaboration among faculty across departments as well as closer collaboration between faculty and student affairs professionals—including academic advisors, career counselors, and other campus educators who work every day to help students make sense of their educational experiences. Second, opportunities for students to demonstrate what they are learning must be embedded within the educational program, along with opportunities for students to present themselves as well-educated people with a wide array of skills and with practice in putting those skills to practical use. This cannot be the sole responsibility of career counselors, and it cannot be left until the student’s last semester.

One especially promising vehicle for accomplishing these two steps is the electronic portfolio, or “e-portfolio,” which allows the individual student to present his or her work and to reflect over time on his or her educational accomplishments. Here, too, integration across departments is essential. Moreover, many career offices now work with students early in their college years to set up
LinkedIn pages where they can post their resumes. Linking students’ e-portfolios to those pages would allow prospective employers to see more than just a resume. Indeed, in the new employer survey, four of every five employers said that an electronic portfolio of a student’s accomplishments would be either very or fairly useful to them as they assess a job applicant’s abilities (Hart Research Associates 2013, 3).

**Employers and educators in partnership**

Clearly, educators can do more to ensure that the college experience positions every student for long-term success, regardless of chosen field of study. But change isn’t only needed within colleges. Employers may need to alter their recruiting and hiring practices in order to discover talent wherever it can be found in colleges and universities. While AAC&U respects the opinions of the business and nonprofit leaders who have participated in our surveys, we do not presume that their recruiting and hiring practices are fully aligned with what is needed for the long-term success of either their employees or their businesses or organizations. We also know that by making common cause, employers and educators can more effectively communicate their shared understanding of what makes for a high-quality college experience. Additionally, by working with their boards of trustees and their business partners, individual college leaders can more effectively push back against potentially destructive policy proposals and emerging practices—such as
the use of simplistic computer software to screen job applicants, which works against the effort to find the best educated and most talented graduates.

To help facilitate this promising partnership between employers and educators, AAC&U has launched the LEAP Employer-Educator Compact. Beginning with more than one hundred college, community college, and university presidents and more than one hundred fifty business and nonprofit leaders, AAC&U is bringing together a cadre of leaders committed to building our nation’s educational capital. Over the course of the coming year, AAC&U will continue to seek and welcome supporters across many sectors in order to strengthen this new advocacy and action effort. Forward-thinking business and nonprofit leaders know that their future success—and the future success of our nation—depends on whether our colleges and universities graduate liberally educated professionals who are prepared to fuel innovation and effective problem solving in fast-paced global environments. These leaders are committed to working together in order to provide more opportunities for internships and experiential learning. They are also working internally to ensure that frontline recruiters understand the broad knowledge and job-specific skills that are needed in new hires. In the coming year, AAC&U will work with this cadre of leaders to sponsor regional forums and to develop tools educators and hiring managers can use to convey to students and the general public what it really takes to succeed in today’s workplace.

As regular readers of Liberal Education know, AAC&U has a capacious vision of liberal education, and its membership remains steadfast in its commitment to providing an education that prepares students not only for success in the workplace, but also for responsible citizenship and a life well lived. We can—and must—meet this challenge not only for the most privileged students, but for all students who understand that a college education is, as noted in the LEAP report, “a route, perhaps the only possible route, to a better future” for individual students and for our nation (AAC&U 2007, 1).

REFERENCES


NOTES
1. It Takes More Than a Major: Employer Priorities for College Learning, the full report of the latest employer survey conducted for AAC&U by Hart Research Associates, is published in this issue of Liberal Education (see p. 22). The full report, along with PowerPoint slides summarizing the latest findings, is also available online at www.aacu.org/leap/public_opinion_research.cfm. Reports on previous surveys are also available there.

2. The full text of the LEAP Employer-Educator Compact is published in this issue of Liberal Education (see p. 30). Additional information about the compact, including an up-to-date listing of signatories, is available online at www.aacu.org/leap/presidentstrust/compact/index.cfm.

To respond to this article, e-mail liberaled@aacu.org, with the author’s name on the subject line.
Our higher education system, arguably the mightiest arrow in America’s competitiveness quiver, is facing a perfect storm.

One might ask why a fellow approaching seventy-eight years of age would elect to devote most of his retirement to promoting education and science rather than playing golf. The reason is actually fairly straightforward and, frankly, rather pragmatic. I was the first in my family to attend college and the second to go to high school. This has made all the difference in my life. Furthermore, people whom I never met had, over the years, established scholarships that made it possible. I owe them a great debt, just as I do the teacher at my high school in Colorado who encouraged me to apply to Princeton University.

While in college, my summer job was spreading tar on roofs. Years later, I was asked by a reporter from the New York Times what I had learned from the experience. I answered that I had learned not one but three things: that there are a lot of fine people who make a living spreading tar on roofs; that you have to spread an awful lot of tar to cover a roof; and that the secret to getting off the roof is to get an education. Actually, my parents had already sought to teach me the latter lesson, and in doing so they sacrificed a great deal on my behalf.

Why do I mention all this? The reason is that I am worried about the future quality of life of America’s children and whether they will have the opportunities that I enjoyed. And I am worried about the very underpinnings of our democracy. The principal reason for these two worries is that I am worried about education in America.

It is my opinion that our systems of democracy and free enterprise form the foundation of the remarkable success our nation has enjoyed throughout its history. The beauty of our democracy is, of course, that each one of us gets one vote—no matter how much land we own, how big a house we live in, or how much money we have accumulated. Furthermore, it is a vote that matters. We all recall the “hanging chads” episode, and there have been other elections that were also narrowly decided. So if each vote counts, should not each vote be cast in an informed fashion? That question brings me to a little quiz I once presented in an op-ed for the Wall Street Journal, where I asked “in which of the following subjects is the performance of America’s twelfth graders the worst: science, economics, history, or mathematics?” The answer is history. Indeed, a survey of historical literacy revealed that very few American adults were aware that Madison played a role in creating the Constitution, although nearly everyone knew who Snoop Dogg was (Neal and Martin 2000). Exactly what this portends for the future of democracy in America is left for others more versed in the subject of government than I, but I do believe you can appreciate why I am worried.

To a not inconsiderable degree, quality of life in America depends upon Americans having good jobs and being able to pay the taxes needed to support services such as healthcare,
Equations Alone
social security, and physical security that we have come to expect from our government. It is noteworthy that 40 percent of US employers now report they have difficulty filling entry-level jobs because candidates have inadequate skills (Mourshed, Farrell, and Barton 2012). Ironically, today there are nearly four million job openings in the United States, at the same time that over twelve million people are unemployed largely due to skills gaps (US Department of Labor 2013a, 2013b).

Particularly worrisome to me are surveys indicating that undergraduates devote less than fifteen hours a week outside of class to studying and related activity (Babcock and Marks 2010), yet the number of “A” grades they receive is near an all-time high (Rojstaczer and Healy 2012). This Lake Woebegone combination is unlikely to produce the sort of work ethic that will permit US-based companies to compete with foreign firms that are staffed with increasingly well educated, highly motivated young people willing to work for a mere fraction of the compensation sought by US workers. Over half of America’s employers consider the people they actually hire to be inadequately prepared to enter the workforce (Mourshed, Farrell, and Barton 2012).

Globalization
One of the consequences of the globalization that is now engulfing nearly all societies is that one no longer simply competes with neighbors down the street for a job. In Tom Friedman’s (2005) words, globalization has “accidentally made Beijing, Bangalore, and Bethesda next door neighbors.” The title of Francis Cairncross’s bestselling book on the effects of the communications revolution, The Death of Distance (1997), eloquently encapsulates this phenomenon. Yes, distance is dead. It was killed by modern commercial aircraft and advanced information systems—the former transporting objects around the world at nearly the speed of sound, and the latter transmitting knowledge around the world literally at the speed of light. The impact of this development is indeed profound, particularly with regard to the globalization of the employment market.

In my career, I have participated in more than five hundred board meetings of Fortune 100 companies. In more than a few of these we were confronted with a decision whether to locate a new research and development facility, manufacturing plant, logistics center, or administrative office in the United States—or somewhere else. It should be of great concern that 77 percent of the boards facing such decisions have been casting their ballots for somewhere else (Defense Science Board 1996). There are of course many reasons for this outcome, but leading the list, at least as viewed by the National Academy of Sciences committee that wrote what is popularly referred to as the “Gathering Storm” report, is our K-12 educational system (National Research Council 2007). Further, the United States now ranks in fourteenth place in its fraction of young adults who hold baccalaureate degrees. For the first time in our nation’s history, young males are less well educated than their fathers—and are very likely to be less healthy as well. As the saying goes, what a time for the roof to leak—just when it is raining. The demands on our educational system are increasing. A recent Georgetown University study found that by 2018, merely 37 percent of US jobs will be available to workers who have only a high school diploma or no diploma at all—down from 72 percent in 1973, and 44 percent as recently as 1992 (Carnevale, Smith, and Strohl 2010).

Standardized tests have shown only a slight improvement in scores among students in America’s public schools over several decades, in spite of the second highest rate of spending per student in the world. Further, the improvement that has occurred is largely concentrated at the fourth-grade level—and few US firms employ fourth-graders. Worse yet, the longer our children are exposed to our public schools, the more poorly they perform. This is particularly true in math and science. Yet various studies have shown that, in recent decades, between 50 and 85 percent of the growth in the nation’s gross domestic product can be attributed to advances in science and technology, as can two-thirds of the improvement in productivity—this in a society where less than 5 percent of the workforce is composed of scientists and engineers. So if science and engineering are so important to our companies and our nation, how are we doing?

Well, our fifteen-year-olds now rank twenty-second in science and twenty-fifth in mathematics among the thirty-four member nations of the Organization for Economic
Cooperation and Development (2010). In terms of the fraction of baccalaureate degrees awarded that reside in the field of engineering, the United States ranks seventy-ninth among the ninety-three nations considered in a recent study (National Science Board 2012). The only countries behind us are Bangladesh, Brunei, Burundi, Cambodia, Cameroon, Cuba, Zambia, Guyana, Lesotho, Luxembourg, Madagascar, Namibia, Saudi Arabia, and Swaziland.

But, one might ask, if we have been doing so poorly at providing a K-12 education to many—correction: most—of our children, why has our economy over the long term performed so well? A major reason is that we have been importing a significant portion of our finest scientific and technical brains. About two-thirds of the engineers receiving doctorates from US universities have been foreign born. Increasingly, these students are saying they will return home upon completing their education and, presumably, compete against us; inexplicably, our government clings to its aversion to granting H1-B visas and green cards to individuals possessing critically needed skills.

The invention of the iPad, the Blackberry, GPS, and the iPhone—all rooted in much earlier fundamental research performed in such fields as solid state physics and quantum mechanics—created jobs not only for scientists and engineers but also for factory workers, salespersons, advertisers, and musicians. One recent study reported in the *Journal of International Commerce and Economics* stated that, in 2006, the seven hundred engineers working on Apple’s iPod were accompanied by fourteen thousand other workers in the United States and nearly twenty-seven thousand overseas (Linden, Dedrick, and Kraemer 2011). Steve Jobs told the president of the United States that the reason Apple employs seven hundred thousand workers abroad is because it can’t find thirty thousand engineers in the United States (Crovitz 2011).

So what does business need from our educational system? One answer is that it needs more employees who excel in science and engineering and, more generally, a workforce that is exposed to enough science and mathematics to function in the rapidly evolving, high-tech world. But that is only the beginning; one cannot live by equations alone. The need is increasing for workers with greater foreign-language skills and an expanded knowledge of economics, history, and geography. And who wants a technology-driven economy if those who drive it are not grounded in such fields as ethics?

**Ethics**

During my teaching years—well before Enron, Arthur Andersen, and Bernie Madoff made headlines—I included passages about ethics in the courses I taught in Princeton’s engineering school. To my amazement, in their year-end assessments, the students invariably indicated that they would like to have had more material devoted to the topic of ethics! In this regard it is worth recalling that when Johnson & Johnson and Enron, firms strongly grounded in technology, were confronted with ethical crises, they took precisely opposite directions and encountered precisely opposite outcomes. The difference wasn’t because the leaders of the two firms had an inadequate understanding of thermodynamics, chemistry, or differential equations. Rather, it was because the tone at the top evidenced starkly different values of the type one derives from exposure to the humanities.

I found my students to be fascinated by real-world ethical dilemmas—some profound, others rather trivial. As an example of the latter, I would describe a situation that occurred when my wife and I were traveling in Nepal and observed that some of the locals had formed enterprises wherein they would trap small birds, hold them captive in tiny cages made of sticks, and offer to release one of the birds if a tourist paid a dollar. The evening we arrived in Kathmandu, one of my traveling companions became an instant celebrity when he agreed to release all the birds being held prisoner outside the entrance to our hotel. The next morning, it somehow evolved that I should be that day’s benefactor. I refused, however, reasoning that if no one paid ransom, the locals would stop treating birds so cruelly.

The question for the students was, who was the more ethical, my friend or I?

A more profound example of an ethical dilemma is the canonical case where the
mayor of a small town, having but a single fire truck, receives an urgent telephone call from the fire chief. The chief hurriedly explains that the local grade school with twenty children trapped inside it is on fire and so is the old-age home with one hundred senior citizens. The chief wants to know where to send the fire truck. I do not believe the answer to that dilemma can be found in technology.

Certainly when it comes to life’s major decisions, would it not be well for the leaders and employees of our government and our nation’s firms to have knowledge of the thoughts of the world’s great philosophers and the provocative dilemmas found in the works of great authors and playwrights? I believe the answer is a resounding “yes.” And were that the case, I believe many individuals and institutions (read: Wall Street banks, oil companies, and more) would have better reputations.

The written word
A topic in which our educational system at all levels does not seem to be receiving a passing grade is communications—particularly, but not only, written communication. The firm I led at the end of my formal business career employed some one hundred eighty thousand people, mostly college graduates, of whom over eighty thousand were engineers or scientists. I have concluded that one of the stronger correlations with advancement through the management ranks was the ability of an individual to express clearly his or her thoughts in writing.

In this regard I am speaking only of the barest fundamentals. If you happen to see someone running toward the edge of a cliff, for example, there is a difference between shouting “don’t, stop” and “don’t stop.” Or if the person happens to be running because he or she is being chased by a lion, it is probably
counterproductive to call out, “There is a lion chasing George, shoot him.” This is not rocket science—and I know, I am a rocket scientist! We are amused by such linguistic transgressions, but I assure you that I have seen far worse in formal business correspondence. The most flagrant violators are my fellow slide-rule-bearing colleagues, many of whom have never really accepted the notion that every sentence deserves a verb! Then there were the letters General Electric once sent to thousands of its suppliers concerning GE’s quality-control program—printed under an embossed letterhead that had the word “Electric” misspelled! When I called this to their attention, they insisted that I was the only one who had noticed it . . . and that they still had two hundred thousand more sheets of that stationery in stock!

The liberal arts

Then there is the question whether a life can be truly fulfilling with only knowledge of magnetohydrodynamics, quantum mechanics, and matrix algebra and no exposure to the beauty and utility of Beethoven, van Gogh, and Shakespeare. Did I say utility? Indeed I did. While the learned study of such works “merely” for their inherent beauty would seem to be sufficient reward, there is more—much more—to be gained. Consider the broad reach of literature. Some years ago, a friend of mine and I wrote a book on Shakespeare that was published by the firm that produced the motion picture Shakespeare in Love. They titled our book Shakespeare in Charge (Augustine and Adelman 1999). The thesis of the book is that by understanding Shakespeare one can better understand business. That is true because business is about people, and no one ever understood people better than Shakespeare did.

Another friend of mine, the actor Michael York, and I have gained a great deal of pleasure from putting on little skits wherein I describe a business dilemma I have actually encountered and he then acts out—from memory, I might add—what Shakespeare would have advised under the prevailing circumstances. Be assured that I will remember those passages far longer than any book I have ever read, or written, on the abstract theory of management.

For example, when faced with the question whether to sell a business that had been a loss-leader for four straight years or to hold out for a better offer, I was swayed by Shakespeare’s advice to a, shall we say, not overly endowed Portia, who has finally received an offer of marriage and is debating whether to accept. “For I must tell you friendly in your ear,” her friend Rosalind advises, “sell when you can: you are not for all markets!” (We sold!) Or, as I listen to a poorly prepared briefer struggle to answer a question posed at a board meeting about the merits of the project that he or she has just been extolling, I am put on alert by having read the passage from Shakespeare wherein Antony is asked to describe the crocodile he has just bragged about seeing in Egypt. Antony’s only problem is that he has never seen a crocodile—not has he ever been to Egypt! The resulting conversation goes like this:

Lepidus: What manner ’o thing is your crocodile?

Antony: It is shaped, sir, like itself; and it is as broad as it has breadth: it is just so high as it is, and moves with its own organs: it lives by that which nourisheth it; and the elements once out of it, it transmigrates.

Lepidus: What color is it of?

Antony: Of its own color, too.

Lepidus: ’tis a strange serpent!

And chances are, the proposal before the board of directors is also a strange serpent!

There are of course the so-called more practicable liberal arts disciplines, such as history, geography, and economics—not to mention psychology, languages, and political science. Each of these offers important subject-matter content, but even more important is what one learns about critical thinking, logic, and expression. And how can one operate a business that has many employees and customers around the world without possessing sensitivity to historical events?

A major competitor of the firm where I worked once hosted a lavish dinner in Paris for a delegation of prospective customers from the People’s Republic of China. Happily—for us—the small flag placed in the center of the dinner table was that of the Chinese People’s Republic! But in the spirit of full disclosure, the firm I led once included in an advertising brochure an image of the British flag—upside down! (Actually, that is fairly easy to do.)

But where does that leave such fields as, say, music and art? When I worked at Lockheed Martin, we did not have a music
department—though we did have a graphics department. And as a one-time aerodynamicist I have noted over and over that aircraft that are attractive to the eye more often than not fly better than ones that are ugly. Science, given its association with nature, is replete with examples of artistic magnificence, be it the patterns generated in bubble chambers or the color images of microscopic stress patterns in solids.

A few years ago I took the railroad across the Old Silk Route—even today a twenty-three-day adventure. On the train was a college student who had brought along a guitar. During the periodic stops at villages along the way, the passengers would get off and mill around the station platform where the locals were selling food to hungry travelers. The student would take out his guitar and begin playing American folk music, and a crowd would gather and begin singing along with him—perhaps it was more like humming, given the language mismatch. After some twenty minutes, the train would prepare to depart, and everyone, passengers and locals alike, would run around shaking hands, laughing, and patting each other on the back. I have since remarked to several secretaries of state that that young man did more for America’s image than all our diplomats since Thomas Jefferson. Interestingly, none has challenged my assertion!

**Facing a perfect storm**

As you have no doubt surmised, I am not a Luddite. I am a firm believer in the constructive effect properly managed technology can have, with its potential impact in the field of education being no exception. But probably no pursuit other than religion has more successfully resisted change over the centuries than higher education. The student, teacher, blackboard, book, and piece of chalk have been the coin of the realm. In fact, a highly regarded Princeton professor once stated that the objective of education is to transfer knowledge from the professor’s notebook to the student’s notebook without it passing through the student’s head!

But I view what I see as a trend in the application of technology to pedagogy with both a degree of optimism and a degree of trepidation. How will the humanities fare in the university of the future, with its emphasis on computerized and distance learning? It would seem that our higher education system, arguably the mightiest arrow in America’s competitiveness quiver, is facing a perfect storm. Government support is declining, and tuition is rising; international competition for student and faculty talent is intensifying; and a technological revolution in pedagogy is gathering momentum.

It is easy to articulate the case for investing in science and engineering, because the results are largely tangible: CAT Scans, vaccines, GPS. It is more difficult, but no less important, to make the case for the humanities, where one learns critical thinking, values, teamwork, and the art of expression. Think, for example, how you, as an innocent person accused of a crime, would like to be on trial before a jury that had no familiarity with civics, logic, psychology, or philosophy.

The good news is that America is still blessed with the finest university system the world has ever seen. According to the most recent ranking of world universities, five of the top six universities in the world and twenty of the top twenty-five are located in the United States (Times Higher Education 2013). But if they are to maintain those positions, change will be inevitable. Pan American Airways, Sears, Kodak, and the Penn Central were also once at the top of the heap.

Community colleges, for example, in addition to performing their all-important college preparation function, will need to rebuild programs that enable individuals to learn trades as apprentices. More exposure to the liberal arts will need to be provided to engineers—and, yes, the master’s degree should replace the bachelor’s degree as the entry degree into the field of engineering. Liberal arts graduates will need to have at least a rudimentary understanding of science and engineering. You will recall that British novelist C. P. Snow used to ask acquaintances whether they could describe the Second Law of Thermodynamics. When they failed, as they almost invariably did, he would delight in pointing out that his question was the technological equivalent of asking, “Have you ever read any Shakespeare?” Much greater emphasis will need to be placed on lifelong learning,
particularly in the technical fields where it takes no effort to become professionally middle-aged by the time one is thirty-five years old.

Academia, government, and business must work together. This will not be accomplished without its challenges, because of the fundamental differences that exist between business and higher education. In academia the aphorism “publish or perish” is widely accepted, whereas in industry “publish and perish” might be better advice. In academia loyalty often tends to be more closely associated with one’s field than with one’s institution, whereas in industry the opposite is clearly true. Even the basic cadence of the two differs, with academia marching to a nominal four-year beat, and industry, sadly responding to the short-term pressures of the financial markets, is increasingly marching to a next-quarter drum. Academia is accustomed to potential customers beating down the doors to be admitted; industry seldom suffers from this problem. Government makes its own rules, interprets the rules, and enforces the rules—all while owning a printing press for money. In my experience, the best way to overcome such barriers is to make it easy for people to move across the barriers—something we do not do particularly well today.

Whatever the case, change is in the wind, and to prosper in the global village will require a balance of education in technology and humanities. I had the opportunity to study engineering in what was principally a liberal arts institution, and believe that served me well in my career, in my extracurricular activities, and in my personal life.

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HART RESEARCH ASSOCIATES

It Takes More Than a Major
Employer Priorities for College Learning

From January 9 to 13, 2013, Hart Research Associates conducted an online survey among 318 employers whose organizations have at least 25 employees and report that 25 percent or more of their new hires hold either an associate’s degree from a two-year college or a bachelor’s degree from a four-year college. Respondents are executives at private sector and nonprofit organizations, including owners, CEOs, presidents, c-suite level executives, and vice presidents.

This report provides a detailed analysis of employers’ priorities for the kinds of learning today’s college students need to succeed in today’s economy. It also reports on changes in educational and assessment practices that employers recommend.

Overview
Innovation is a priority for employers today. Nearly all employers surveyed (95 percent) say they give hiring preference to college graduates with skills that will enable them to contribute to innovation in the workplace. More than nine in ten agree that “innovation is essential” to their organization’s continued success.

Employers recognize capacities that cut across majors as critical to a candidate’s potential for career success, and they view these skills as more important than a student’s choice of undergraduate major. Nearly all those surveyed (93 percent) agree that “a candidate’s demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than their undergraduate major.” More than nine in ten of those surveyed say it is important that those they hire demonstrate ethical judgment and integrity, intercultural skills, and the capacity for continued new learning. More than three in four employers say they want colleges to place more emphasis on helping students develop five key learning outcomes, including critical thinking, complex problem solving, written and oral communication, and applied knowledge in real-world settings. Employers endorse several educational practices as potentially helpful in preparing college students for workplace success. These include practices that require students to conduct research and use evidence-based analysis; gain in-depth knowledge in the major and analytic, problem-solving, and communication skills; and apply their learning in real-world settings.

Employers recognize the importance of liberal education and the liberal arts. The majority of employers agree that having both field-specific knowledge and skills and a broad range of skills and knowledge is most important for recent college graduates to achieve long-term career success. Few think that having field-specific knowledge and skills alone is what is most needed for individuals’ career success. Eighty percent of employers agree that, regardless of their major, every college student should acquire broad knowledge in the liberal arts and sciences. When read a description of a twenty-first-century liberal education, a large majority of employers recognize its importance; 74 percent would recommend this kind of education to a young person they know as the best way to prepare for success in today’s global economy.

Employers endorse a blended model of liberal and applied learning. Across many areas tested, employers strongly endorse educational practices that involve students in active, effortful work—practices including collaborative problem solving, internships, research, senior projects, and community engagements.
It Takes More Than a Major
Employer Priorities for College Learning and Student Success

Washington and Lee University
Employers consistently rank outcomes and practices that involve application of skills over acquisition of discrete bodies of knowledge. They also strongly endorse practices that require students to demonstrate both acquisition of knowledge and its application.

Employers think that more college graduates have the skills and preparation needed for entry-level positions than for advancement. A majority of employers (56 percent) express satisfaction with the job colleges and universities are doing to prepare graduates for success in the workplace, but more than two in five indicate room for improvement. Two in three employers (67 percent) believe most college graduates have the skills and knowledge they need to succeed in entry-level positions, but only 44 percent think they have what is required for advancement and promotion to higher levels.

Employers express interest in e-portfolios and partnerships with colleges to ensure college graduates’ successful transition to the workplace. In addition to a resume or college transcript, more than four in five employers say an electronic portfolio would be useful to them in ensuring that job applicants have the knowledge and skills they need to succeed in their company or organization. Notable proportions of business and nonprofit leaders say they are already partnering with two-year and four-year colleges to advance the success of college students after graduation, and those who are not express interest in doing so to provide more hands-on learning opportunities and to help college students successfully make the transition from college into the workplace.

Eleven Key findings
1. Employers are highly focused on innovation as critical to the success of their companies, and they report that the challenges their employees face today are more complex and require a broader skill set than in the past. Notably, employers indicate that they prioritize critical thinking, communication, and complex problem-solving skills over a job candidate’s major field of study when making hiring decisions.

Employers point out that both the expectations and challenges their employees face are greater today than in the past. Majorities say their company or organization is asking employees to take on greater responsibilities and to use a broader set of skills (93 percent total agree; 52 percent strongly agree) while facing challenges today that are more complex than in the past (91 percent total agree; 50 percent strongly agree).

Employers today are highly focused on innovation and are giving priority to hiring employees who can help in this advancement. Fully 92 percent agree that innovation is essential to their company’s continued success, including 51 percent who strongly agree. Additionally, 95 percent of employers agree (57 percent strongly) that their company “puts a priority on hiring people with the intellectual and interpersonal skills that will help them contribute to innovation in the workplace.”

To achieve success at their companies in today’s more complex environment, employers are in broad agreement that a candidate’s demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than his or her undergraduate field of study (93 percent total agree; 59 percent strongly agree).

2. While they may prioritize key skills over a job candidate’s field of study, the majority of employers agree that having both field-specific knowledge and skills and a broad range of skills and knowledge is most important for recent college graduates to achieve long-term career success. When asked whether having field-specific knowledge, a broad range of skills, or both is most important to achieving long-term career success, over half (55 percent) of employers say it is most important to have both. Among employers who chose just one category, more say having a broad range of skills and knowledge is important for career advancement (29 percent) than say having knowledge and skills that apply to a specific field or position is most important for college graduates’ long-term success (16 percent).

3. Employers’ evaluation of two-year and four-year colleges and universities for the job they are doing preparing graduates to succeed and contribute to today’s economy suggests that many see room for improvement. They register a greater sense of confidence in college graduates having the skills and knowledge to succeed in entry-level positions than to advance or be promoted within their companies or organizations.

A 56 percent majority of employers think that higher education is doing an excellent
(9 percent) or good job (47 percent) in preparing students for success in today's economy, compared with 44 percent who say the system is doing a fair (40 percent) or poor job (4 percent). It is notable that few employers give postsecondary institutions marks of either excellent or poor; most fall somewhere in the middle.

When asked to think about college graduates from both two-year and four-year colleges and universities, two-thirds of employers say that all (14 percent) or most (53 percent) graduates who apply to positions within their company or organization have the skills to succeed in entry-level positions, compared with one in three (33 percent) who say about half or fewer are qualified for entry-level positions.

Thinking specifically about the skills and knowledge needed to advance or be promoted within their company or organization, 44 percent of employers say that all (7 percent) or most (37 percent) graduates have what it takes to move beyond the entry level. Fifty-six percent of employers say that about half or fewer applicants who apply to positions within their company or organization have the skills and knowledge for advancement.

Employers point to a variety of types of knowledge and skills as important considerations when hiring, placing the greatest priority on ethics, intercultural skills, and capacity for professional development. While majorities of employers say that all skill and knowledge areas tested are important, they differentiate between those that are very important to the hiring decisions of their company or organization.

Employers place the greatest degree of importance on the following areas:

- **Ethics**: “Demonstrate ethical judgment and integrity” (96 percent important, including 76 percent very important)
- **Intercultural Skills**: “Comfortable working with colleagues, customers, and/or clients from diverse cultural backgrounds” (96 percent important, including 63 percent very important)
- **Professional Development**: “Demonstrate the capacity for professional development and continued new learning” (94 percent important, including 61 percent very important)

While deemed important by majorities of employers, they place a lesser degree of emphasis on the following areas when it comes to hiring:

- **Community Involvement**: “Show an interest in giving back to the communities in which our company or organization is
located or those that it serves" (71 percent important, including 26 percent very important; 29 percent just somewhat/not important)

- **Global Knowledge:** "Know about global cultures, histories, values, religions, and social systems" (55 percent important, including 16 percent very important; 45 percent just somewhat/not important)

5. **Majorities of employers believe two-year and four-year colleges and universities should place more emphasis on a variety of key learning outcomes in order to increase graduates’ success in today’s global economy. Few say less emphasis should be placed on any of the learning outcomes tested, but employers overall are most likely to believe there is a need to increase the focus on active skills such as critical thinking, complex problem solving, communication, and applying knowledge to real-world settings.**

Employers were asked whether colleges and universities should place more, less, or the same emphasis on seventeen different learning outcomes in order to help students succeed in today’s global economy. Large majorities believe colleges and universities should place at least the same or greater emphasis on all these learning outcomes. Of the seventeen learning outcomes tested, majorities believe that colleges should place more emphasis on eleven of them, including seven for which more than seven in ten employers say colleges should increase their focus.

Employers say the most emphasis should be placed on the following areas:

- critical thinking and analytical reasoning (82 percent more emphasis, 7 percent less)
- complex problem solving and analysis (81 percent more emphasis, 6 percent less)
- written and oral communication (80 percent more emphasis, 8 percent less)
- the application of knowledge and skills in real-world settings (78 percent more emphasis, 6 percent less)
- the location, organization, and evaluation of information from multiple sources (72 percent more emphasis, 9 percent less)
- innovation and creativity (71 percent more emphasis, 9 percent less)

Employers say less need for colleges to heighten their focus on ensuring graduates demonstrate (1) proficiency in a foreign language, (2) knowledge about global issues/developments, (3) knowledge about cultural diversity/the role of the United States in the world, (4) civic knowledge/participation, and (5) an understanding of democratic institutions and values. Rather, majorities of employers would like higher education institutions to maintain their current level of emphasis in these areas.

6. **There is broad agreement among employers that all students, regardless of their chosen field of study, should have educational experiences that teach them how to solve problems with people whose views are different from their own, including 57 percent who strongly agree with this statement.** Other aims of college learning that earn high levels of agreement include teaching students about ethical issues and public debates important to their field (87 percent total agree; 43 percent strongly) and ensuring college students gain experience working with others to solve important problems in their community (86 percent total agree; 41 percent strongly).

While employers may not be clamoring for colleges to increase their emphasis on civic learning or on teaching about global issues,
they widely agree that all students should receive civic education and learn about cultures outside the United States. Fully 82 percent agree (27 percent strongly) that every student should take classes that build civic capacity, and learning about societies and cultures outside the United States (78 percent total agree; 26 percent strongly) is widely valued for all students. Additionally, four in five agree (32 percent strongly) that all students should acquire broad knowledge in the liberal arts and sciences, regardless of a student’s chosen field of study.

The variation in the proportion of employers who say they strongly agree with these goals for college do reveal some distinctions, however, suggesting the deepest commitment to the top goal of all students learning how to solve problems with people with different views.

7. Among the ten existing and emerging educational practices tested, employers believe several have the potential to improve the education of today’s college students and prepare graduates to succeed beyond graduation.

Employers express the greatest confidence in the following practices to help students succeed beyond graduation. Large majorities believe that colleges that set expectations for students to achieve these learning outcomes will do the most to prepare them for success:

- work through ethical issues and debates to form their own judgments about the issues at stake (66 percent say “will help a lot/fair amount”)
- acquire hands-on or direct experience with the methods of science (69 percent say “will help a lot/fair amount”)
- develop the skills to conduct research collaboratively (74 percent say “will help a lot/fair amount”)
- complete an internship or community-based field project (78 percent say “will help a lot/fair amount”)
- complete a project prior to graduation that demonstrates their acquired knowledge and skills (79 percent say “will help a lot/fair amount”)
- develop research questions in their field and evidence-based analyses (83 percent say “will help a lot/fair amount”)

A flipped classroom approach to learning also has broad appeal among employers. Three in five (59 percent) say an approach that deemphasizes lectures and devotes classroom time to dialogue, debate, and problem solving in groups or alone with the guidance of the instructor will help prepare students a lot or a fair amount for success beyond graduation.

Employers anticipate that other emerging educational practices would have a more muted impact in preparing students for success: expecting students to learn about points of view of people in societies outside of North America and Western Europe (47 percent a lot or fair amount), expecting them to learn about cultural and ethnic diversity in the context of the United States (44 percent a lot or fair amount), and expecting them to explore various challenges facing society (42 percent a lot or fair amount).

8. In addition to a resume and college transcript, a large majority of employers say an electronic portfolio demonstrating a student’s work and key skill and knowledge areas would be useful in evaluating potential candidates for hire. Four in five (83 percent) employers say an electronic portfolio of student accomplishments would be very (43 percent) or fairly (40 percent) useful to them in ensuring applicants have the skills and knowledge to succeed in their company or organization. Just 17 percent say the portfolio would be only somewhat useful or less.

9. A notable proportion of employers say their company or organization currently partners with a nearby college or university to offer internships to college students. Smaller proportions of employers report partnering with higher education institutions
in other ways, but express interest in partnering to offer internships in the future.

When it comes to partnering with two-year and four-year colleges to advance the success of college students after graduation, employers are most likely to say their company or organization offers internships and/or apprenticeships to students at nearby institutions (47 percent currently do this). An additional 42 percent of employers say they have a high (21 percent) or medium (21 percent) level of interest in developing this type of program in the future. Only 11 percent say they would have a low level of interest.

Other collaborative efforts between colleges and companies or organizations are less common among employers today; nevertheless, majorities of employers express interest in these initiatives:

- working closely with the career services office of a nearby college to help students successfully make the transition from college into the workplace (26 percent currently do this; 51 percent do not currently do this, but would have a high/medium level of interest in doing so in the future)
- partnering with colleges in the area to better align the curriculum and learning outcomes they teach to the skills and knowledge our company looks for in new hires (22 percent currently do this; 54 percent do not currently do this, but would have a high/medium level of interest in doing so in the future)
- sponsoring a program at a nearby college to get students involved in more “real-world” or hands-on learning while they are still in college (18 percent currently do this; 53 percent do not currently do this, but would have a high/medium level of interest in doing so in the future)

10. Across several areas tested, employers strongly endorse educational practices that involve students in active, effortful work—practices that involve such things as collaborative problem solving, research, senior projects, community engagement, and internships.

Questions that ask employers about specific areas of “knowledge” with no reference to active learning or skill development receive lower scores than questions that address cross-cutting skills, or questions that address a combination of knowledge and skills. Even where employers considered particular kinds of knowledge very important or somewhat important (e.g., global knowledge, science and technology), they still place a higher priority on forms of learning that emphasize students’ active development and application of intellectual and practical skills.

More than nine in ten of those surveyed say it is important that those they hire demonstrate ethical judgment and integrity, intercultural skills, and the capacity for continued
new learning. More than 75 percent of employers say they want colleges to place more emphasis on helping students develop five key learning outcomes, including critical thinking, complex problem solving, written and oral communication, and applied knowledge in real-world settings.

In contrast, no more than 40 percent of employers indicate a desire for colleges to place more emphasis on helping students gain knowledge in areas including global issues, the role of the United States in the world, cultural diversity in America, civics, or democratic institutions and values. (Majorities would rather that colleges maintain their current level of emphasis on these knowledge areas.) The only knowledge area in which more than half of employers would like to see colleges place more emphasis is on knowledge about science and technology (56 percent would like to see more emphasis), but it is still a lower priority than active, effortful learning and skills development.

Employers endorse several educational practices as potentially helpful in preparing college students for workplace success. These include practices that require students to conduct research and use evidence-based analysis; gain in-depth knowledge in the major and analytic, problem-solving, and communication skills; and apply their learning in real-world settings.

11. Employers recognize the importance of today’s colleges and universities providing a liberal education—one that focuses on both broad knowledge in a variety of areas and knowledge in a specific field of interest, as well as intellectual and practical skills that span all areas of study and a sense of social responsibility. When given a description of the component elements of a liberal education, nearly all consider this kind of learning very or fairly important for colleges to provide, and a large majority would recommend this approach to young people they know.

When presented with a description of liberal education, fully 94 percent of employers say it is important for today’s colleges to provide this type of education, including half (51 percent) who say it is very important to do so (see fig. 2).

Moreover, nearly three in four employers (74 percent) say they would recommend that their own child or a young person they know pursue this type of education in order to achieve professional and career success in today’s global economy (see fig. 2). Just 7 percent would not recommend this approach, and 19 percent say it depends. When forced to choose one way or the other (and without the “depends” option), fully 89 percent would recommend the described approach to a young person seeking advice on the type of college education they should pursue, and only 11 percent would not.

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In the twenty-first century, the hallmark capacities of a liberally educated graduate are important in every area of endeavor and indispensable to success in the economy.

EDITOR’S NOTE: Through the Liberal Education and America’s Promise (LEAP) initiative, the Association of American Colleges and Universities seeks to engage employers with the value, goals, and best practices of a twenty-first-century liberal education; to publicize employers’ support for liberal education; and to encourage employer-educator partnerships that provide applied learning experiences for undergraduate students. In 2012, the LEAP Presidents’ Trust, a leadership group consisting of presidents from all sectors of higher education, initiated the LEAP Employer-Educator Compact, an effort to bring together college presidents and leading employers of college graduates in order to support the goals of the LEAP initiative. At a forum held in Washington, DC, on April 10, 2013, more than two hundred distinguished leaders in business, higher education, and the nonprofit sector came together to endorse the Employer-Educator Compact printed below.

As leaders of higher education institutions and of companies and organizations that employ college graduates, we are coming together in a compact to put the quality of college learning at the top of national, regional, state, and institutional agendas—for the benefit of our students, our economy, and our democracy. We are launching this LEAP Employer-Educator Compact because we are alarmed that, even as the world around us is changing dramatically, the United States is falling short in providing today’s students with the broad knowledge and high-level capacities that they will need both to navigate a fast-paced economy and to contribute to the future of our democracy.

Recently, public policy at all levels has focused with new intensity on college preparation, access, completion, and cost reduction—and we strongly support those commitments. But, as employers and educators, we know that too many students leave college still lacking crucial capacities that they—and society—urgently need.

The quality of student learning in college is fundamental to America’s future—and ensuring high-quality learning is the goal of this Employer-Educator Compact. Through this Compact, we are determined to focus with new intensity on

1. the learning college students most need, both for the economy and for democracy;
2. twenty-first-century designs for high-quality, hands-on learning that prepare students to deal with complexity, diversity, and change;
3. the development of meaningful evidence about students’ actual achievement in college.

High-quality learning involves more than a major

Above and beyond what students learn in their major fields—chemists must know chemistry and engineers must know engineering—a high-quality college education for the twenty-first century also should emphasize

- broad learning about science, society, technology, human diversity, and global cultures and interdependence;
- intellectual skills that support evidence-based reasoning and innovation—including analysis, communication, critical and creative thinking, quantitative fluency, information literacy, and collaborative problem solving;
- personal and social responsibility, including ethical reasoning, civic and democratic knowledge and engagement, global acumen, and the capacity to work productively with diverse people and perspectives;
- integrative and adaptive learning, including the demonstrated ability to apply knowledge, skills, and responsibilities to complex problems and new settings.
Preparing all students for success

The high-quality learning we seek is best described as a liberal—and liberating—education. In the twenty-first century, the hallmark capacities of a liberally educated graduate are important in every area of endeavor and indispensable to success in the economy. These forms of learning can and should be fostered in all colleges, universities, and community colleges, and across all areas of study, including career and technical fields, professional fields, and the liberal arts and sciences. Combined with strong in-depth study in a major field, high-level achievement in these cross-cutting areas of knowledge and skill is the best possible preparation both for the economy and for democracy.

Our shared commitments

We pledge to

1. help Americans understand that the rising demands of a global workplace require that every college student acquire the hallmark outcomes of a twenty-first-century liberal education;
2. ensure that all college students—whatever their chosen field of study or ambitions—have access to educational experiences that lead to achievement of the broad learning and intellectual skills they need for success;
3. highlight, support, and expand twenty-first-century designs for high-quality, hands-on learning, including senior projects, undergraduate research, internships, global and community-based projects and experiences, and other experiential learning programs;
4. prioritize and advance the dual mission for higher education to prepare students both for successful careers and for civic responsibility—providing them with the knowledge and skills required in a great democracy and as responsible employees;
5. document national and institutional progress in helping all students achieve the learning they need—with particular attention to their ability to integrate and apply their learning to complex problems and projects.

Pursuing these shared goals together, we pledge to support programs that prepare students to deal with complexity and to speak out in one voice about making the quality of student learning the touchstone priority for public policy and institutional practice. We urge other college and university presidents and leaders in business, industry, and nonprofit organizations to join us in this Compact.

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

MORE ABOUT THE COMPACT

On April 10, 2013, the Association of American Colleges and Universities (AAC&U) launched the Employer-Educator Compact during a forum held in Washington, DC. Several of the signatories to the compact spoke at the forum, and US Undersecretary of Education Martha Kanter contributed her perspective on national priorities for higher education. In addition, AAC&U provided an overview of the findings from a new national survey of business and nonprofit leaders (see p. 22).

Additional information about the compact, including an up-to-date list of signatories and the recorded webcast of the forum, is available online at www.aacu.org/leap/presidentstrust/compact/index.cfm.
Forty years ago higher education was vitally important, but it was still optional. In the Midwest where I lived, we were losing a lot of low-skill manufacturing jobs, but most of them were just moving south. Seventy percent of the workforce had a high school diploma or less, and you could still achieve a middle-class lifestyle working in low-knowledge jobs. Now those jobs have moved offshore, and higher education is essential. Manufacturing jobs and most service jobs now require more sophisticated knowledge and problem-solving skills. Virtually all the job growth in the past forty years in the United States has been in jobs held by people with some college or a postsecondary degree.

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

Obviously, the economic value of education is important, but that is just part of the story. We have a more crowded planet; increasing standards of living and energy consumption threaten the ecosystem; disease still plagues human life; and scarce resources and weak intercultural understanding and tolerance continue to generate wars and threats of war. These challenges—economic, health, environmental, social, and political—make widespread educational attainment more essential in the twenty-first century than it has ever been before. Averting poverty, famine, war, and pestilence might be enough. But one member of an audience recently asked me, “What about happiness?” Happiness, too. Having a PhD doesn’t guarantee happiness, but ignorance is not bliss. To me the essence of happiness is self-expression. Human beings are clearly driven to acquire and to use knowledge in personal relationships, work, language, inventions, art, and music. In the Declaration of Independence, Thomas Jefferson wrote that
“life, liberty, and the pursuit of happiness” are inalienable human rights. I’m comfortable asserting that the opportunity to become well-educated is a human right.

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

Low-SES students of high academic ability participate in higher education at essentially the same rate as low-academic-ability, high-SES students. The college graduation rate is even more dramatically influenced by socio-economic status. The most worrisome differences are for the large number of average students, those with an SAT score between 1000 and 1100. Roughly 65 percent of high-SES students in the average-ability group obtain a BA or higher degree by age twenty-eight. About 40 percent of students in the second quartile of SES with average academic ability obtain a BA or higher, and fewer than 20 percent of average-ability students in the lowest quartile of SES obtain a BA or better (Carnevale 2008).

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

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

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

**The standards and assessment movements**
In the 1990s, while working in philanthropy, I was introduced to the K-12 New Standards Project. Its theory of change, perhaps a little oversimplified, was straightforward. Standards and assessments shape the behavior of teachers and students. Therefore, we need high standards and excellent, authentic assessments. Finally, if we insist that students meet the standards (by employing high-stakes, high-quality tests), students and teachers will do what is needed to meet them.
The New Standards theory of change, like all reform strategies, contains what Paul Hill and Mary Beth Celio (1998) call “the zone of wishful thinking.” The zone of wishful thinking includes all the essential components of genuine educational achievement not directly addressed by the reform strategy. In attempting to implement the New Standards Project, we learned more about the difficulty of constructing comprehensive, authentic assessments; the importance of curricula and teaching skill; and the necessity of student engagement driven by aspiration and interest, not fear.

We have come a long way since the 1990s. The Common Core State Standards Initiative, a state-led effort to establish a common set of educational standards for kindergarten through twelfth grade in English language arts and mathematics, responds to nearly two decades of failed “standards-based reform.” The initiative recognizes that useful “standards” (I prefer the term “learning objectives”) must be focused, clear, meaningful, and based on a community consensus. Efforts to implement the standards show that we also have learned that different approaches to assessment and instruction are needed. The criteria used to develop the common core standards (“fewer, clearer, higher, evidence-based, and internationally benchmarked”) are intuitively compelling. Like most people who have been around awhile, I was stunned by the number of states that quickly decided to adopt them.

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

• Clear instructional objectives and intentions help both teachers and students.
• It is difficult to improve something one does not measure.
• Students, faculty, and others must find assessments authentic and credible.

• Our most cherished learning objectives—creativity, critical thinking, the ability to solve unscripted problems—are not easily measured, especially by standardized tests. So despite genuine progress, we have work to do. The Organization for Economic Cooperation and Development’s soon-to-be-concluded feasibility study, Assessing Higher Education Learning Outcomes (AHELO), has demonstrated the challenges and the inevitability of learning assessments. We have to learn how to do this well—the alternative is to live with it being done poorly.

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

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

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

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

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

Disruptive Innovation

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

One of the key ideas in Christensen’s analysis is that successful “high-end” industries (such as the minicomputer firms Digital and Wang) become increasingly expensive and specialized, addicted to costly habits and standards and to the limited number of customers who can afford their products. The Commodore 64, for which I paid $1,000 in 1983 while using Wang in the office, is an example of a cheap, low-quality product entering the marketplace to serve different customers. Suddenly, many more people had the benefit of computers.

Soon the “disruptive” personal computer business was able to improve the quality and value of its products (still at a cost low enough to serve its many customers), and eventually it also captured the customers of the higher-end minicomputer industry. Wang and Digital are no more.

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

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

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

Christensen’s ideas deserve the attention they have received. But if the analogy between

Now that the objective is helping each student realize his or her potential, the main event must become teaching and learning.
higher education and the computer industry is extended too far, I think it breaks.

First, education is a collaboration, a joint product of the customer (the student) and the educator. When a consumer product is used in essentially the same way by most or all customers, it is easier to “disrupt” an existing market and create a new one. In education, the student’s contribution to the “product” often varies considerably according to abilities, motivation, goals, and previously obtained knowledge. This makes it more difficult for an educator (or an educational technology) to achieve the level of standardization needed to reduce costs and improve quality on a massive scale.

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

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

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

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

**Reinventing instruction**

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

- providing online access to top quality lectures and other course materials
- leading real-time, online seminar discussion sections with students in geographically dispersed locations
- collaborating on the curriculum for large-enrollment courses and using the computer to deliver content and provide practice opportunities for students (Center for Academic Transformation, Carnegie-Mellon Open-Learning Initiative)
- collaborating on the curriculum of entire degree programs and delivering it both traditionally and online to distance learners (University of Southern California MSW and MAT programs)
- developing databases of learning objectives, assessing student knowledge and skill in the context of those objectives, and providing instruction tailored to the student’s needs and goals
- analyzing the interactions of students with computer-based instructional programs to improve the effectiveness of the programs and to increase the speed and scope of student learning
- employing “high-impact” instructional practices, with or without technology, that more deeply engage students in creative work to develop the skills they will need as professionals and citizens
Although the speed and power of information technology is essential, the most critical resource is the way we use faculty talent in designing curricula and delivering instruction. The foundation for widespread educational attainment consists of coherent, explicit educational objectives and well-designed curricula to achieve them. One cannot construct a coherent curriculum or employ educational technology effectively without teamwork. Learning how to work in teams more effectively is the challenge and opportunity facing the academic community. There will still be a place for soloists, but solo practitioners can no longer be the standard way of doing academic work.

**Turning education upside down**

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

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

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

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

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

**REFERENCES**

“What Would Make This a Successful Year for You?”

How Students Define Success in College

NANCY JENNINGS, SUZANNE LOVETT, LEE CUBA, JOE SWINGLE, AND HEATHER LINDKVIST

Our institutions, like most others in the country, make grand claims about the educational experiences we seek to provide our students. We invoke these claims routinely—in admissions materials, at commencement ceremonies, at trustee meetings, in mission statements—and it is not uncommon for students, faculty, staff, and alumni to be able to recount, at least in part, the specific language of these claims. They provide a sort of moral compass that orients us toward the core values of our colleges.

These claims may also be viewed as standards against which we measure our success in educating students. We will have done our job if our graduates lose themselves “in generous enthusiasms,” in “intellectual discovery,” or “make a difference in the world.” No doubt many of our students hope they will indeed graduate with these abilities. But our students are also exposed to numerous other perspectives on the college experience. And no perspective is more prominent, particularly in these tough economic times, than the one that defines college success as landing a good (i.e., high-paying) job or gaining admission to a top-ranked graduate or professional school. From this vantage point, the question “will a liberal arts degree be worth it?” means “will it pay off financially?” With this understandable concern vying for students’ attention, how well do the life aspirations expressed in our colleges’ mission statements shape the way students define their own success?

In this article, we look at students’ definitions of success over their four years of college. We find that themes related to academic achievement—primarily “getting good grades”—predominate over themes related to academic engagement—the loftier aspirations voiced in our mission statements, such as developing a love of learning or a breadth of knowledge. Reflecting on the stories told by our students, we are not surprised by their preoccupation with grades.

Nor do we find ourselves dismissing their views of success as less worthy than our colleges’ loftier and noble principles. Instead, we are encouraged to observe many students finding inspiration in our institutions’ professed values and becoming engaged learners, while at the same time defining success in terms of good grades.

The NECASL data

Our institutions are members of a group of liberal arts colleges in New England (Bates, Bowdoin, Colby, Middlebury, Smith, Trinity,
and Wellesley) that, in 2005, joined with our regional accreditor (New England Association of Schools and Colleges) to form the New England Consortium on Assessment and Student Learning (NECASL). This collaboration seeks to understand how students make important decisions during college, assess the extent to which institutional policies and practices foster student learning, and modify those policies and practices accordingly.

Here we analyze interviews with a subsample of sixty-six students who entered NECASL colleges in 2006 and graduated four years later. The gender and racial composition in this smaller sample mirrors that found for the full sample of NECASL students. Two of the NECASL schools are single sex, which accounts for the large number of women (73 percent); the racial composition of the sample—65 percent are students of color or international students—reflects our over-sampling of these two groups.

Each student was interviewed three times in the first year of college and once each semester thereafter. Although these interviews covered many aspects of college life, this article focuses on a question we asked at the beginning of each academic year: “Thinking ahead to the end of the year, what would make this a successful year for you?”

<table>
<thead>
<tr>
<th>Themes</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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<td>Make new friends</td>
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<td>Find romance</td>
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<td>3%</td>
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<td>53%</td>
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<td>5%</td>
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<tr>
<td>Honors</td>
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<td>2%</td>
<td>3%</td>
<td>12%</td>
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How do students define success, and how do these definitions change over time?

Using a grounded theory approach (Glaser and Strauss 1967; Jones, Torres, and Arminio 2006) to analyze responses to this question about success, we identified four thematic categories: academic achievement, social and residential, life management, and academic engagement themes (see table 1.) Academic achievement themes included such things as getting good grades or improving one’s grades, achieving college milestones (e.g., declaring a major, planning for off-campus study), and engaging in career-oriented activities. The vast majority of students (over 80 percent each year) defined success using one or more of these academic achievement themes, the most common of which was achieving good grades.

A second group of responses dealing with social and residential life was also quite common: making new friends, maintaining and strengthening friendships, or pursuing extracurricular activities. As expected, the desire to make new friends was most pronounced in the first year, when social and residential themes peaked in frequency of mention at 71 percent. Students often talked about wanting to maintain their friendships as graduation approached.

Life management themes included maintaining psychological and physical well-being, work-ethic issues (e.g., better time management, developing effective study skills), and balancing academics with one’s social or personal life. Defining success in terms of life management was relatively common (44–82 percent each year).

Our fourth category of success themes focused on academic engagement: expressing a desire to learn, to take interesting classes or explore new subject areas, or to engage in independent research. We were surprised that more students did not define success in these terms. Those who did (30–53 percent each year) mostly talked about wanting to learn—until the senior year, when students linked their definitions of success to independent research or honors projects.

As seen in figure 1, academic achievement themes (especially getting good grades) were most important to defining success throughout college. Social and residential themes were most common in the first year, but continued to be mentioned through the senior year. Life management themes increased through the junior year, and then receded in the senior year. And although academic engagement themes
increased from first year to senior year, they never became a predominant way to define success in college.

When students are asked to define success in college, why do they talk so much about grades (a measure of academic achievement) and so little about academic engagement (e.g., a desire to learn)? Before we suggest answers to this question, we briefly examine how individual students’ definitions of success vary in accordance with these two themes as they move through college. For example, how does a student who focuses on grades in defining success each year compare to one who starts out doing so but then stops somewhere along the way?

Grades, engagement, and definitions of success: three case studies

Figure 2 shows how the success themes of grades and academic engagement varied across the four years of college. Because over three-quarters of the students in our sample expressed a grade-related success theme in their first year, the tree diagram begins with this group. Each node in the tree displays how many students mentioned (or failed to mention) a grade-related success theme, as well as how many within each of these groups also mentioned an academic engagement success theme. For example, in the first year, of the fifty-one students who included some form of “making good grades” in their definition of a successful first year, thirteen (25 percent) also included an academic engagement theme in their definition.

By the fourth year, nearly half (twenty-three of fifty-one) continued to use grades to define success, and the majority of this group (fourteen of twenty-three) never mentioned an academic engagement theme.

Rita is one of the twenty-three students who always mentioned something about grades as a marker of a successful year. She is focused on becoming a physician and in many ways views college as a stepping stone to medical school. A successful first year for Rita means “successful grades”: “Grades have always been a big part of defining my success. . . . It’s been kind of drilled into me.” In her second year, Rita takes a psychology class that she really enjoys but then “kind of stopped” when she got Bs on two papers instead of As. Her “best” class is biology because she is doing well, although her “favorite” class is organic chemistry. She defines a successful second year as “acing organic chemistry” and “raising her GPA” from last year. As Rita heads into her junior year, she wants to complete her major, “do well grade-wise,” and score highly on her MCATs. As a senior, Rita defines success as “getting an interview at a medical school of choice and graduating from college knowing that I will be attending medical school.” Rita graduates with a high GPA and gets into a top medical school.

Rita is clearly not “academically adrift” (Arum and Roksa 2010); she is more like a character in a sequel to the 2010 documentary...
film *Race to Nowhere* for whom the end point of über-achievement is getting into a good graduate program. She never defines success using the language of engagement, but elsewhere in her interviews talks about behaviors that we’d characterize as academically engaging. Rita develops deep relationships with her professors and cites these as one of the things she misses most after graduation. She also says the most valuable part of her college experience was that it helped her try new things: “I was a science major, and I took art history just to fulfill a requirement, and I was surprised how much I liked it.” These engaging experiences do not find their way into Rita’s narrative of college success.

Like Rita, Tina begins college focused on achieving good grades as a measure of success, in part because she too wants to get into medical school. In her first two years, she only cites grades as her measure of success. By her junior year, however, even as she continues to worry that she won’t have good enough grades to get into medical school, Tina talks about her “passion” for science when asked to describe a successful year. During her junior year, Tina travels to Central America on a study-away program to conduct biology experiments and gets her “hands down in the dirty with lots and lots of biology all day.” She then realizes that she can “actually do science on my own. . . . I’m really curious about a lot of things, and biology allows me to ask all these different questions and then try to find a way to answer the questions.” Her engagement with science spills over to classes outside of her major in her junior year: “I’ve never taken anything with philosophy, and every day I walk into class and it blows my mind.” But even though academic engagement themes surface during Tina’s junior year, she still mentions the importance of getting good grades.

In her senior year, Tina’s love of learning continues, and she looks forward to all of her courses. She says, “A successful senior year? To feel satisfied with my classes in that I’ve learned as much as I can from those classes or at least that I’ve made the best effort I can to learn from all of them.” As Tina looks back on her four years, she realizes that her college experience has shown her “that I am more than my grades.”

Although he shares Rita’s and Tina’s interest in science, Michael arrives at college with minimal concerns about grades. When asked what would make his first year successful, he responds: “I think I need to enjoy myself. I think that’s the main key to having a successful year . . . [and] not getting kicked out of school.” The summer after his first year, Michael takes linear algebra to prepare for more physics courses. When asked why more physics, Michael says, “You know, all the things they talk about, I find really interesting

<table>
<thead>
<tr>
<th>Year</th>
<th>Rita</th>
<th>Tina</th>
<th>Michael</th>
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<td>G=37 (E=10)</td>
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</tr>
<tr>
<td>G=2 (E=1)</td>
<td>not G=3 (E=2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key to abbreviations:  
G = mention of good grades in definition of successful year  
not G = no mention of good grades in definition of successful year  
E = mention of at least one academic engagement theme in definition of successful year
so I decided to kind of go with it. And the more I do, the more interesting things there are that I want to study.” Despite this expression of engagement at the beginning of his sophomore year, Michael still defines success in other ways—“seeing more places outside of the college” and “getting out into the wilderness.”

The summer before his junior year, Michael does research on campus with a chemistry professor. While some of the work is tedious, he enjoys the investigative part. When asked what would make his junior year successful, Michael says, “probably just knowing that I got the most out of my classes. Just to be able to take what I learned in class and then extend it into something in the real world.” Michael now includes academic engagement in his narrative of success. As a senior, Michael is excited about doing an honors project, as it affords him the opportunity to do “the whole process of research and not just do an experiment. But plan the experiment, and do it, and . . . get it published—seeing what it takes to do all that.” His definition of a successful year? “Getting good clean data” for his project, and keeping up with his sport.

**Achievement versus engagement as markers of success**

Why do students so frequently mention grades when asked to define a successful year for themselves? One quite practical reason is that colleges use GPAs as thresholds or baseline standards for many things, such as continuing to receive scholarships, registering for courses each semester, or playing on an athletic team. But grades—particularly high ones—also matter in other ways for ambitious students. They can determine whether they are invited to work on an honors project, graduate with Latin honors, get into graduate or professional schools, or secure some high-paying jobs upon graduation.

What about our second question: Why so little talk about academic engagement when students describe a successful year? As the narratives of Rita, Tina, and Michael illustrate, students often encounter courses, assignments, and instructors that they find engaging; they just don’t consistently express a desire to seek out these experiences when asked about their goals for a successful year. Academic engagement is episodic for many students. It is an experience that happens in some courses and in some semesters, not a constant and universal feature of their college experience. Or perhaps students at our highly selective institutions assume that they will be academically engaged and therefore don’t see this as a marker of a successful year.

But engagement can also be risky. Exploring unfamiliar scholarly territory, enrolling in a challenging course, even walking into a faculty member’s office—all of these can be anxiety-producing because they can be wrought with uncertainty about the outcomes. Students who achieve high grades early on may be less averse to the risks of engagement because they have already achieved these conventional markers of college success.

It was particularly disconcerting to discover that the mention of grade themes and engagement themes was negatively correlated in our sample (r = -0.36, p < 0.05). Students who mentioned more grade themes over their four years tended to mention fewer engagement themes. For example, Rita—who uses grades each year to define success—never mentions an engagement theme. This pattern is particularly striking in the senior year (see fig. 2). Recall that fifty-one of the sixty-six students in our sample mentioned grade themes in their definitions of success in their first year. By senior year, of the thirty-three students who still included grades in their definitions, only thirteen (39 percent) also included engagement themes. By contrast, fourteen of the eighteen students who no longer included grades in their definitions of success (78 percent) mentioned engagement themes.

**Does all of this talk about good grades matter?**

Throughout their four years, students listed multiple themes when asked to define success in college. The focus of their success narratives ebbs and flows over time. Making friends is important initially, as students seek to establish a social network in a new environment; thinking about career-related activities and cementing friendships are more pressing concerns, as students imagine life after college. But getting good grades is the drumbeat in students’ definitions of success—the most consistently and frequently mentioned theme.
Perhaps students are merely responding to an institutional structure that, despite the rhetoric in our mission statements, rewards students who academically achieve.

We are not likely—nor do we wish—to change students’ desire to get good grades, but can we find ways to encourage them to supplement this with other metrics of success? We believe our task as college faculty and administrators is to make opportunities for engagement less serendipitous and more deliberate, particularly early in the college experience. Following are some ways we might begin to do so.

Reconstruct the concept of academic success. Recall that Rita describes biology as her “best” class because she is getting an A, even though her “favorite class” is organic chemistry. Tina struggles with feeling successful because her GPA may not be high enough to get into medical school, even though she is developing a passion for biology. We need to find ways of communicating to students that “best” isn’t always associated with high grades. If we ask students more about what they learn, how they learn, what challenges their ideas, and what grabs hold of them rather than the more routine question—“How did you do?”—would that help them see success more broadly?

Deconstruct the concept of engagement. Engagement is risky and uncertain in part because we tend not to articulate it well. We often cast engagement as a “state of being” rather than something that occurs around particular assignments, work, or courses. Michael became engaged with work in his professor’s chemistry lab because he liked “the investigation piece,” even though he found much of the other work tedious. If engagement is episodic and linked to particular kinds of work or pedagogies, then we need to talk about it to students in these ways. Can we help them identify particular experiences that they find intriguing and better assist them in seeking these out?

Help students understand that engagement has real rewards. Tina says that college “taught me that I was more than grades.” This realization is what we want for all our students. We think student narratives about engaged learning, like those from our project, have the potential to help other students understand why engagement is more than just frosting on the cake. Highly successful individuals are also highly engaged individuals. Encouraging students to engage academically—in all the various forms that can assume—may indeed increase the likelihood that we can make good on the admirable and ambitious aspirations expressed in our mission statements.

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

REFERENCES
Faculty rarely have opportunities to research their students’ views about how their best learning happens in college or graduate school. Even less common are the means for teachers to gather such information from colleagues on a large scale and distill it into pragmatic insights about teaching practices best suited to their own particular students. The Illinois Initiative on Transparency in Learning and Teaching is a grassroots assessment project doing just that, and it demonstrably enhances students’ learning. The project has two main goals: (1) to promote students’ conscious understanding of how they learn; and (2) to enable faculty to gather, share, and promptly benefit from data about students’ learning by coordinating their efforts across disciplines, institutions, and countries.

Statistically significant early results indicate distinct current and future learning benefits of particular teaching and learning methods that are specific to discipline, class size, level of expertise, and student demographics. Reporting of the results helps faculty identify and adopt the learning and teaching method(s) best suited to achieving the desired outcomes for the specific population of students in their courses. And ongoing analysis suggests that benefits for underrepresented and nontraditional students might be leveraged to promote higher retention and graduation rates for these groups, and even increased participation of diversely prepared students in master’s and doctoral degree programs.

The Transparency Initiative complements existing assessments of content mastery and teaching performance by asking students about their perceptions of the current and future learning benefits they are gaining. And it reimagines the scope of impact by sharing the aggregate data and findings (anonymously and with the approval of an institutional review board) across the institutional and national confines that usually circumscribe such research. Since 2010, the initiative has involved more than twenty-five thousand students, one hundred sixty courses, and twenty-seven institutions in seven countries.

The practices tested share several things in common: they are transparent, requiring explicit conversation among teachers and students about the processes of learning and the rationale for required learning activities; they involve relatively minor adjustments to any teacher’s current practice; and they are consistent with research-based best practices in higher education.

**Statistically significant early results indicate distinct current and future learning benefits of particular teaching and learning methods**

**Studying transparent teaching practices**

With faculty and students as a starting point, the Transparency Initiative developed from a desire to research a phenomenon that faculty reported anecdotally in a series of pedagogy seminars at Harvard University, the University of Chicago, and the University of Illinois: students’ learning outcomes improved when they understood how and why instructors had structured their learning experiences in...
Instructors are essential not only to the design of the survey but also to the implementation of the initiative.

Faculty role
Instructors are essential not only to the design of the survey but also to the implementation of the initiative. Data gathering is facilitated voluntarily by teachers at the course level, rather than by institutions. Faculty participants have identified several common teaching practices that can enhance students’ metacognition when the instructor and students address them explicitly together as part of the course’s work. The list grows as participants identify new methods to be investigated. As faculty join the project, they usually choose to make one small change in their teaching, at their own discretion, and then students complete a four-to-five-minute online survey at the end of the semester. Because many of these practices are already familiar, it usually takes little time and minimal adjustment to put them to use and discuss them explicitly with students.

While the project tracks the frequency with which instructors implement their chosen methods, it does not seek to enforce consistency in implementation. Instead, it provides instructors with several possible examples of each method and aims to measure the effects on students’ learning that can be expected when a teacher uses one of the methods at her or his own discretion. Transparency staff arrange permissions with ethical research boards, keeping faculty identities confidential and students’ identities anonymous, so that teachers can focus their time instead on their teaching and their students’ learning. End-of-term reports offer each faculty participant an analysis of students’ learning in their course relative to the learning experiences reported by students in similar courses in the study, along with an overview of findings about the most effective methods with respect to discipline, class size, level of expertise, and some student demographics. Analyses in the reports can immediately be applied to improving students’ learning in the courses these faculty teach.

Benchmarks and related studies
Any study that relies on students’ self-reported perceptions of their learning experiences must account for an important limitation of students’ self-reports: lack of alignment between students’ self-assessments of mastery and their actual performance. To avoid unreliable student self-reports of their overall achievement, the Transparency survey questions focus not on self-assessments of mastery, but instead on students’ reports of how much (if at all) their learning experience in a particular course affected their mastery of content and critical thinking skills. To further
ensure reliability, the project surveys students according to the conditions under which their self-assessments are most reliable—the answers are known to them, the questions are clear, the questions concern recent activities, the respondents regard the questions seriously, and there is no negative consequence to responding (Kuh 2001, 3–4).

To establish that survey respondents are not over-reporting or overestimating in their responses about their learning experiences, national benchmarks are important. Several questions on the Transparency survey are intentionally similar to questions on both the Personal and Social Responsibility Inventory (PSRI) and the National Survey of Student Engagement (NSSE). Comparisons indicate that undergraduate students at US institutions in the control group surveyed by the Transparency Initiative do not overestimate their ability to learn or their learning mastery in comparison with undergraduate students surveyed by the PSRI or NSSE. Because the Transparency survey asks about the learning benefits of a single course, while the PSRI and NSSE surveys ask about a year’s courses or four years’ courses, the control group’s Transparency survey responses ought to be somewhat less positive, and this is indeed the case.

Demographically, the population of US undergraduates responding to the Transparency survey is very similar to the Department of Education’s analysis of undergraduate student demographics overall (Aud et al. 2012).

**Benefits of transparent teaching and learning methods**

Transparent teaching methods can offer benefits for both current and future learning. Several survey questions address aspects of student learning that are directly tied to course activities, and the responses to these help identify benefits for the current learning experience. To help determine future benefits, several survey questions focus students on identifying lifelong learning skills that will be useful to them after the course is completed.

In humanities courses at the introductory undergraduate level, two practices seem to benefit students’ current course learning experiences:

- Discuss assignments’ learning goals and design rationale before students begin each assignment (in classes ranging in size from thirty-one to sixty-five students).
- Debrief graded tests and assignments in class (in classes ranging in size from sixty-six to three hundred students).

In social science courses at the introductory undergraduate level, several transparent methods have statistically significant benefits for students’ current course learning experiences:

- Discuss assignments’ learning goals and design rationale before students begin each assignment (in classes ranging in size from thirty-one to sixty-five students, and in those containing three hundred or more students)
- Gauge students’ understanding during class via peer work on questions that require
students to apply concepts you’ve taught (in classes ranging in size from thirty-one to sixty-five students, and in those containing three hundred or more students).

- Debrief graded tests and assignments in class (in classes ranging in size from thirty-one to sixty-five students).

In addition, students indicated significant future learning benefits from debriefing graded tests and assignments in class in the courses containing three hundred or more students. As class size in introductory undergraduate social science courses increases—from classes of thirty-one to sixty-five students to classes of three hundred or more students—transparency about the learning goals and design rationale for assignments appears to become more effective for students’ current course learning experiences.

In introductory courses in the STEM fields (science, technology, engineering, and mathematics), with class sizes ranging from sixty-six to three hundred students, the following transparent methods have statistically significant benefits for students’ current course learning experiences and for their future learning:

- Explicitly connect “how people learn” data with course activities when students struggle at difficult transition points.
- Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught.
- Discuss assignments’ learning goals before students begin each assignment.

Students at the intermediate and advanced levels in STEM courses (containing sixty-six to three hundred students) indicated that the following methods are helpful to their current and future learning:

- Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught.
- Debrief graded tests and assignments in class.

**Underrepresented and nontraditional students**

Some of the practices tested are especially beneficial for underrepresented students, both at the undergraduate and graduate levels. These students are an important focus of continuing Transparency research in the 2013–14 academic year. At present, the project’s sample sizes allow for some analysis of significant benefits for first-generation students, non-Caucasian students, and transfer students.

In humanities courses at the intermediate and advanced undergraduate levels (ranging in size up to thirty students) that implemented transparency around the learning goals and design rationale for assignments, students who identified themselves as either first-generation college students or transfer students responded more positively than similar students in control group courses in this category to the question, “How much has this course helped you in improving your ability to learn effectively on your own?”

Transfer students in introductory humanities courses (ranging in size from thirty to sixty-five students) where the instructor provided commentary about the disciplinary methods and thought processes in use during class responded more positively than non-transfer students to the question, “As a result of taking this course, are you better or worse at recognizing when you need help with your academic work, or has the course made no difference?”

Transfer students in intermediate and advanced undergraduate social sciences courses (ranging in size up to thirty students) using transparency around grading practices responded more positively than non-transfer students to the question, “As a result of taking this course, are you more or less confident about your ability to succeed on your own?”

Students who described their racial/ethnic groups as other than Caucasian reported greater gains in academic self-confidence than did their Caucasian peers in courses containing both graduate students and advanced undergraduates in the STEM disciplines (ranging in size up to thirty students) when courses offered transparency around the learning goals and design rationale for assignments. The non-Caucasian students in these courses responded more positively to the question, “As a result of taking this course, are you more or less confident about your ability to succeed in school, or has the course made no difference?”

In addition, these same non-Caucasian students responded more positively than their
Caucasian peers in these courses to the question, “As a result of taking this course, are you better or worse at recognizing when you need help with your academic work, or has the course made no difference?”

Non-Caucasian students in graduate-level courses in the social sciences (ranging in size up to thirty students) where instructors explicitly involved students in developing the agendas for class meetings responded more positively than their non-Caucasian peers in these courses to the question, “As a result of taking this course, are you better or worse at recognizing when you need help with your academic work, or has the course made no difference?”

While the numbers of underrepresented and nontraditional students participating in the Transparency Initiative have not yet allowed for additional disaggregation of underrepresented students, the initiative aims to gather data in 2013–14 that can be used to enhance the success and graduation rates of underrepresented students in higher education by revealing more about practices that advance their learning. It might be possible to leverage these forthcoming data in order to promote higher retention and graduation rates for underrepresented and nontraditional students, and even increased participation of diversely prepared students in master’s and doctoral degree programs.

**Large-enrollment courses**

Some of the methods tested seem to enhance students’ learning experiences particularly in large-enrollment courses. While the project has not yet tested large courses in all disciplines at all levels, there are already significant findings regarding practices that benefit students’ learning in large classes. The following practices are associated with increased current learning benefits for students in large-enrollment courses in the Transparency study (ranging from sixty-six to three hundred students in humanities and STEM courses; three hundred or more students in social science courses):

- Discuss assignments’ learning goals and design rationale before students begin each assignment (introductory social sciences).
- Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught (introductory social sciences, introductory STEM, intermediate and advanced undergraduate STEM).
The following practices were associated with increased future learning benefits for students in large-enrollment courses:

- Discuss assignments’ learning goals and design rationale before students begin each assignment (introductory STEM).
- Gauge students’ understanding during class via peer work on questions that require students to apply concepts you’ve taught (intermediate and advanced undergraduate STEM).
- Debrief graded tests and assignments in class (introductory social sciences, intermediate and advanced undergraduate STEM).
- Explicitly connect “how people learn” data with course activities when students struggle at difficult transition points (introductory STEM).

**Faculty benefits**

The Transparency Initiative removes many of the common barriers to participation by faculty and instructors in assessment of students’ learning practice. Participation requires very little adjustment or time from faculty and students. Faculty can gather information about how their students and similar students at other institutions are learning, and respond to the findings in the next semester. Some report benefits in the same semester that they participate, due to their increased communications with students about learning and teaching methods.

The statistical significance of learning benefits of each method is recalculated every semester in order to ensure that the findings from one year to the next remain significant. And reporting of the results helps faculty identify and adopt the learning and teaching method(s) best suited to achieving the desired learning outcomes for the specific population of students in their courses.

**Implementing best practices**

Not only does the Transparency Initiative apply data to practice, but it also implements good practice while collecting data. The “transparent” practices are compatible with the Principles of Excellence and high-impact practices defined by the Association of American Colleges and Universities’ Liberal Education and America’s Promise initiative (AAC&U 2007), and with research-based practices identified in recent and longstanding publications (Ambrose et al. 2010; Chickering and Gamson 1987). The demonstrated, positive impact of this project on students’ learning and faculty’s beneficial use of assessment data has great potential.

To complement existing and ongoing research on best practices, the Transparency Initiative continues to gather information about which practices enhance students’ current and future learning the most with respect to discipline, level of expertise, class size, and demographics. Already, instructors can benefit from the findings by adopting transparent methods that have been most effective for enhancing students’ learning in courses like theirs, where their colleagues have implemented particular transparent methods at their own discretion. For individuals and institutions who offer general education or other large-enrollment courses,
experimenting with transparent methods that promote students’ learning in large courses in their disciplines might lead to students’ increased current and future learning benefits.

Instructors or institutions interested in comparing students’ learning perspectives in on-site, online, and blended courses might make use of the Transparency survey as well. Individual faculty members or faculty development organizations might benefit from adding to this collaborative international project’s data on best practices for enhancing students’ learning experiences. While the research is underway, the benefits accrue directly to the faculty and students involved. Faculty share data that inform their choices about the learning and teaching methods best suited to their disciplines, and to the expertise and demographics of their students, while those students gain an enhanced awareness of their learning.

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

REFERENCES


NOTES
1. For specific examples of these modes of transparency, see http://go.illinois.edu/transparentmethods.
2. The full set of survey questions can be viewed online at https://illinois.edu/shy/sec/5647574.
3. Originally developed by the Association of American Colleges and Universities through its Core Commitment’s initiative, the Personal and Social Responsibility Inventory (PSRI) surveys faculty, students, student affairs professionals, and academic administrators regarding key dimensions of personal and social responsibility; more information about the PSRI is available online at http://www.psri.iastate.edu. The National Survey of Student Engagement (NSSE) is an instrument designed to help college and university administrators gauge students’ levels of engagement with their learning; more information about NSSE is available online at http://nsse.iub.edu.
4. For explanations and examples of all the transparent methods mentioned here, see http://go.illinois.edu/ transparentmethods. For statistical significance of their impact, see http://www.teachingandlearning .illinois.edu/ transparency.html.
Think about Your Thinking

Reclaiming a Foundation of Liberal Education at the Evergreen State College

IN THE MIDDLE of the seventeenth century, René Descartes pondered a piece of wax. He imagined it first solid and then melting. He realized that even when the form of the wax changes, the form of knowing the wax does not. Descartes had a world-transforming insight. He wasn’t really thinking about the wax; he was thinking about his own thinking. He grasped the implications of this imagined experiment—I think, therefore I am—and, by extension, proposed that every human being is also a “thinking thing.”

In Margaret Atwood’s novel The Handmaid’s Tale, the narrator secretes away a pat of butter from her dinner tray. When she knows she won’t be found out, she uses the butter, which has started to melt, to moisturize her skin. Her Cartesian moment comes when she realizes that the repressive regime that imprisons her body also threatens her ability to think rationally. Thinking about her thinking—about the butter, and about the remnants of the free society she once enjoyed—enables her to hold onto her rational self even though the world has gone mad. She also realizes that thinking isn’t enough; she must tell her story. “I tell,” she says, “therefore you are.”

Both of these insights, one from a real thought experiment centuries ago and the other from an imagined dystopian future, affirm the high value of habitual critical thought. In our own time, colleges and universities in free societies are trusted to foster that habit through liberal education. Critical and self-reflective inquiry are intentional activities and require practice; students’ other accomplishments depend on them. For Descartes in his “stove-heated room,” the handmaid in the stark bedchamber where she waits to be summoned, and our students in the classroom, thinking about one’s thinking is important. Descartes’ insight changed the world; the handmaid’s enables her to know herself even though circumstances conspire (unsuccessfully) to prevent her from thinking her own thoughts. At our colleges and universities, thinking one’s own thoughts is at the heart of all the other activity that, together, constitutes a liberal education. Self-examination and reflection enable people to make sense of the world and their places in it. Each individual can experience the mind as it grasps its own dynamics and spawns deep and unique understandings that can shape life on purpose.

Student academic statements

In 2011, the faculty of the Evergreen State College, a public liberal arts college in Olympia, Washington, decided that this activity—thinking about one’s thinking—is so important that we ought to make time in the curriculum to help students learn how to do it well, and how to tell the stories of their thinking. We instituted a new graduation requirement: each student will write an academic statement about her or his college education. Students begin this reflective statement during orientation week when they first enroll and, as their fund of knowledge grows, annually rework it with faculty guidance. Periodic revisions enable students to consider carefully how their liberal education bears on one of the central responsibilities of citizenship: making public commitments to their communities and to the future. By the time they graduate, students will have created transcript-ready statements that
demonstrate how they think about their thinking—not about wax or butter, but about the shape and significance of their college education.

This new requirement extends and deepens an old Evergreen practice. Before the college first opened its doors in 1971, the founding faculty decided to evaluate student work with written narrative evaluations rather than letter grades and grade-point averages. We are already accustomed to helping students write, regularly and in depth, about what they learn in college. The academic statement, however, casts a wider net than an evaluation of a specific course of study. Its aim is to enable each student to capture, in a single culminating 750-word document, the trajectory of her or his education as a whole.

A primary aim of liberal education is to prepare students to be responsible citizens. Taking this annual pause to think about their thinking enables students to consider broadly how their education bears directly on the lives they are planning for themselves. Writing about their thinking creates a link between their private reflections and their public commitments. It elevates the craft of committing reflections to paper into a responsibility that marks the passage from college student to college graduate. Each final statement will be the unique testimony of a student’s thoughts about how accomplishments, decisions, turning points, breakthroughs, and even lucky accidents, culminated in graduation from the college.

In the spring of 2012, in preparation for instituting the new graduation requirement in the fall of 2013, the college held a writing contest so students could try their hands at creating academic statements. The three winners were quite different, and quite surprising: as Descartes and the handmaid discovered, thinking about one’s thinking yields remarkable insights that simply cannot come otherwise. One student wrote that her college education taught her that everyone dies, so
she had better learn as deeply and as comprehensively as she can and make every moment count. Another, an immigrant from Afghanistan and mother of four, wrote about the many obstacles she had to overcome (including the language barrier) in order even to enter a college classroom. Once she did, she fell in love with chemistry. And a third stumbled into college as an indifferent student but became ethically ignited by studies in history, politics, and economics. He is now enrolled in law school at the University of Michigan.

The other hundred entries likewise impressed the selection committee with their consistent expressions of enthusiasm, sense of purpose, and acute appreciation for how higher education figures into students’ life plans.

Most striking of all, the essays showed that this new initiative addresses a real need that students already know they have. Students are hungry for opportunities to consider seriously how a college education intersects with their broadest concerns as human beings—as members of families, of small communities, of professions, and of the polis. They are accustomed to looking to the future and attempting to find their places in it. The academic statement brings a degree of intellectual rigor and a sense of civic responsibility to that worthy endeavor. It also links students’ self-reflection with the faculty’s commitment to guide students through their educational journey. By offering ongoing advising workshops throughout the school year, Evergreen’s faculty will steward the practice of reflection and writing, which will yield transcript-worthy academic statements.

**Broad applicability**

Colleges and universities in the United States have a high commitment to the liberal arts. Some colleges, like Evergreen, were founded explicitly to champion the habits of mind that are central to liberal arts education. Fortunately, the principles of critical thinking and broad exposure to a wide range of fields of study are infused throughout our higher education system. Any college or university in the country can help students cultivate the habit of thinking about their own thoughts, and to do so in service of civic and ethical goals. Students need time and faculty support to learn the skill of finding and declaring their public commitments. Institutional structures—scheduling demands, departmental pressures, credit distribution requirements, and the like—should not be obstacles that prevent students from doing the valuable intellectual work of articulating the overall significance of their learning. Especially given recent and widespread critiques of the value of higher education, no one is better positioned than students, the beneficiaries of higher education, to show what their efforts to learn are really about for them, and that the endeavor is exceptionally worthwhile.

Students at all our colleges and universities have something in common: they are trying to figure out their lives. All colleges can create structures explicitly designed to help students become active and committed citizens who know how to reflect carefully on their own ideas. Thinking about one’s thinking is a crucial step that serves these aims and realizes them in practice.

To respond to this article, e-mail liberaled@aacu.org, with the author’s name on the subject line.
The Decline of Empathy and the Future of Liberal Education

NADINE DOLBY

I often use case studies in my undergraduate classes. Perhaps because I briefly wrote case studies during a short stint at Harvard Business School before going back to graduate school, or perhaps because I used to work in multicultural training in student affairs, I find that students tend to do some of their best thinking when presented with a real-life scenario. Case studies give students an opportunity to apply a theoretical construct to an actual situation, and to step into the shoes of another human being.

My field is multicultural education, and while I know there are probably web-based case studies I could assign for class, I tend to write my own. They are usually short, accessible, and designed to stimulate discussion, not yes-or-no answers.

Earlier this semester, I wrote a new case study called “Toys for Haiti.” In my multicultural education class, we spend one week focusing on issues of national identity and ethnocentrism. Horace Miner’s classic “Body Rituals of the Nacirema” provides a beginning opportunity for my students to reflect on how others see us, and how we have historically constructed other people and cultures. “Toys for Haiti” is designed to extend this reflection into a meaningful, relevant, applied situation.

Based largely on my own experiences in and with Haiti, “Toys for Haiti” creates the following scenario: You are a teacher at a high school, and are working with a group of students who want to do something to help Haiti after the January 2010 earthquake. Because the television news has focused so much attention on orphanages in Haiti, your group decides on a toy drive to help the children experience at least a little fun and joy through toys. Your group collects lots of toys, including stuffed animals, toys with lots of batteries, toys with hundreds of pieces, and learn-to-read books. About a year passes, and one of your teachers, who is in Haiti doing relief work, visits the orphanage. People are polite, but eventually someone whispers to her that the toys were not exactly what they needed, and most are gone.

As one of my graduate teaching assistants reflected in our weekly meeting, my students struggled to make sense of what had gone wrong. So far, it was just as I had expected. I did not think that my students would know immediately that stuffed animals are germ magnets and impossible to keep clean in an orphanage environment, that toys with batteries are run down and discarded within days in an orphanage, and that toys with hundreds of
pieces are dangerous with babies and toddlers around and would not be distributed, and that English-language books are not useful in a country where people speak Creole or French. But I also knew that this particular teaching assistant had been to Haiti, understood the challenges, and could help the students see the problems—and the ethnocentrism—in assuming that their perspectives were always correct. She was capable of working with students to help them realize that it is important to listen to the voices and experiences of others. With some guidance, I assumed my students were capable of empathy.

But I was wrong. As my graduate assistant related, many of the students resisted. Instead of even gently beginning to dislodge their beliefs, they clung to them even more tightly. Students proclaimed that the toy drive was successful, even if the Haitians did not appreciate the toys. In response to a related article about how American images of Africa are often distorted, my students announced that “they did not want to know that there are cities in Africa.” As they boldly stated, they preferred to leave Africa untouched by reality, ensconced in Disney make-believe.

A decline in empathy
What happened? Perhaps the class was simply moving too fast for my students, who are from small-town and rural Indiana and whose experiences of diversity and difference are limited. The journey from sympathy, to empathy, to informed empathy (empathy plus knowledge), to social justice is a long, slow process. Maybe my students were not ready for “Toys for Haiti.”

There is, however, another possibility—or at least another layer of complexity—to consider, namely, that students today have less empathy, or capacity for empathy, than previous generations had. While my reflections are admittedly based on anecdotal evidence, the empirical evidence to support this finding is emerging. A 2011 meta-analysis of seventy-two studies on empathy conducted on college-age
students from 1972 to 2009 indicates a decline in empathy of 40 percent during that time period. The authors attribute the precipitous drop to the innate distancing of social networking technologies, and the rise of violence in video games and other electronic media (Konrath, O'Brien, and Hsing 2011). Amy Baugher, in her entry for the 2007 New York Times Magazine College Essay Contest, also points to the decline of empathy and social action among her generation, underscoring students’ fear of deviating from a lockstep path that will (perhaps) ensure a financially stable future. Baugher’s reflections suggest that the declining economic security of the middle class has contributed to the creation of a generation that is focused inward on self, not outward toward connecting with and helping others. Perhaps ironically, despite the decline in measurable empathy, research on the biological roots of empathy and cooperation is booming. Research in fields such as neuroscience, primatology, social psychology, and cognitive ethology (the study of animals under natural conditions) is clearly demonstrating that while competition is innate to humans (and animals), so is cooperation and empathy. What seems to matter for humans is the culture that surrounds us. If that culture promotes competition, then our brains become wired to prioritize competition; if our culture promotes cooperation and

It is difficult to see how empathy can develop in an online learning environment

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empathy, our brains respond. This remarkable insight from science should give us confidence that humans are capable of producing a better, more humane, and empathic world than the one we currently have. As the prominent primatologist Frans de Waal has commented, biology is humankind’s (and I should add, the planet’s) greatest hope for the future.

**Cultivating empathy**

The sobering news is that changes underway in higher education are moving us away from the goal of creating a culture that nurtures empathy. For example, if the culture surrounding us truly shapes our capacity for empathy, then colleges and universities need to be providing our students with as many opportunities as possible for cultivating empathy. While the research is still in its infancy, it seems plausible to theorize that the classroom—where students learn with other students and a teacher and engage in conversation—is a setting that can foster empathy. The development of empathy relies on reading others’ body language, hearing their voices, seeing their eyes and facial expressions, and perhaps even our unconscious awareness of their odor or smell.

In contrast, it is difficult to see how empathy can develop in an online learning environment; a MOOC with one hundred thousand students is the antithesis of the intimate, personal space of a classroom. This is not to suggest that cognitive learning is necessarily less in an online environment. Indeed, some of my graduate students have commented that they learn more (at least more content) in an online class. But we have yet to fully understand what is lost when our lives move online. We may be creating a generation less biologically capable of empathy.

Also under threat is what David Perkins refers to in his 2009 book, *Making Learning Whole*, as “whole-game learning.” Whole-game learning allows students to be involved in meaningful, real-life learning experiences. Depending on how it is structured, whole-game learning can include everything from a service-learning experience to an internship, and many other possibilities. Critically, whole-game learning always involves immersion in an experience situated outside the confines of the classroom; education moves outward, from the classroom to the community and the world. Such an approach to learning allows students to expand their empathic capacity. In many cases, it allows students to stretch the boundaries of their empathy to include not only those who are like them and share a similar life experience (in many cases, their classmates), but also those who are different from them and share fewer commonalities. As budgets tighten and the focus of higher education shifts toward skill-driven courses and outcomes-based competencies, and away from a broad education in the humanities and social sciences, the ability to develop a culture of empathy erodes even further. The decline of liberal education may trigger an even greater decline in empathy.

Perhaps it is fair to ask why any of this matters. I may care deeply about humans’ relationships to other humans, animals, and the planet, but why should you—and why should our institutions of higher education? In his 2011 book, *The End of Growth*, Richard Heinberg offers a compelling reason: the old ways of thinking about how we as humans structure our world must end. This is not a choice, but a mathematical necessity, as the world’s resources are finite. The planet, as we know it, simply cannot survive if we continue to pretend that competition is the only natural way to relate to other beings. As science now tells us definitively, this way of thinking is deeply flawed; cooperation and empathy are just as possible. As Heinberg and many others are trying desperately to convey, we now need to begin to translate this science into human action in order to create a world with different priorities.

As the “Toys for Haiti” case study suggests, our current culture suppresses the very capacity for empathy that the planet needs now for its (and our) very survival. As a culture, we are headed in the opposite direction. For example, the young people Sherry Turkle profiles in her 2011 book, *Alone Together*, prefer texting to talking on the phone. They want to put distance between themselves and others. Today’s youth crave the sterility and disconnection of the screen, shunning the messiness that comes with interacting with another human being. They are the very
students sitting in our classrooms, obsessing over their Facebook profiles and “friends” while slipping ever further into a solipsistic and hermetically sealed world. But as Turkle comments, many of them know there is more, and that they are missing something vital to the human experience. By prioritizing the nurturing of empathy through a liberal education, we can do much to effect positive change. We can help our students understand their connections to other humans, animals, and the planet—and perhaps, eventually, find their way back to themselves.

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REFERENCES


Student Learning: What, Where, How

In exploring the diversity of teaching formats and strategies that different faculty members at different institutions use in a widely taken course, this issue raises questions about what, where, and how students learn in courses that are assumed to cover the same ground. Also included are articles on the genesis and history of PKAL, the Tony Blair Faith Foundation’s higher education work, findings from the Personal and Social Responsibility Inventory, helping students develop “habits of mind,” and best practices in serving students with learning and other disabilities.

Featured Articles:

- Three Colleges’ Different Approaches Shape Learning in Econ 101  
  By Dan Berrett
- Holding Courses Accountable for Competencies Central to the Degree  
  By Carol Geary Schneider
- How Technology Matters to Learning  
  By Stephen C. Ehrmann

Liberal Education for Sustainability

This issue explores how a college or university’s commitment to sustainability can transform institutional practice and help advance the aims of liberal learning. Also included are articles on civic scientific literacy, education for stewardship of the global commons, the role of division I athletics in a liberal education, the value of considering across-the-curriculum initiatives within the context of general education reform, and an approach to creating shared expectations for student achievement within the disciplines.

Featured Articles:

- Sustainability and Liberal Education: Partners by Nature  
  By Neil B. Weissman
- Curricular Innovation for Sustainability: The Piedmont/Ponderosa Model of Faculty Development  
  By Peggy F. Barlett and Geoffrey W. Chase
- Energizing Liberal Education  
  By Mary Finley-Brook, Megan Zanella-Litke, Kyle Ragan, and Bréana Coleman

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