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**STUDENT LEARNING:
WHAT, WHERE, HOW**

According to decades of educational research in many fields, what matters is how students learn—what they do—rather than where they do it

—STEPHEN C. EHRMANN

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Did You Know? Employers *Do Not Want* Narrow, Illiberal Learning!

The public policy arena is currently awash in proposals based on the dangerously mistaken premise that study in the liberal arts is unrelated—or, worse still, actually counterproductive—to preparation for today's workforce. The National Governors Association has suggested that higher education institutions should forgo “their long-established emphasis on broad liberal arts education” and instead “embrace a more active role in workforce development.” In Florida, where the governor has spoken out publicly against anthropology as a worthwhile major, there is a proposal to charge lower tuition to students in the STEM fields—and higher tuition to students majoring in other liberal arts disciplines. In North Carolina, the governor has suggested that public funds should not be spent to subsidize gender studies and other “useless” majors.

Meanwhile, even as they work to shut off the trickle of funding that remains for the humanities, legislators at the federal level are now taking aim at the social sciences. The House majority leader

PRESIDENT'S MESSAGE

recently proposed eliminating the research “funds currently spent by the government on social science,”

for example, and at the end of March, Congress passed—and the president signed—a continuing resolution for the 2013 fiscal year that includes an amendment from Senator Tom Coburn that severely restricts funding for political science research. The National Science Foundation is now expressly forbidden to spend federal funds on political science research, “except for research projects that the Director of the National Science Foundation certifies as promoting national security or the economic interests of the United States.”

While ostensibly designed to connect college education more directly to the needs of the economy while defunding “frills,” these and other kindred proposals to abandon America's liberal arts tradition would almost certainly have the effect of unraveling the educational practices that made the United States the envy of the world. Our colleges and universities have long grounded students' college studies in a strong “big-picture” liberal arts and sciences core, helping form generations of citizen innovators who, in turn, have made the United States a powerhouse of economic dynamism and creativity. Steve Jobs frequently underlined this connection, observing that the “marriage of liberal arts and technology” was a key to Apple's worldwide success. Indeed, America's signature educational tradition has served us remarkably well—so well, in fact, that our chief competitors in Asia are currently reforming their educational systems along American lines. In Hong Kong, for example, the educational system is being reformed to add general education in the arts and sciences at all levels, in the schools and across a university curriculum now expanded from three years to four. China also is helping its top-tier universities add general education to the curriculum.

Competitor nations recognize the value of the “big-picture” thinking that study in the liberal arts provides. But strong learning depends on scholarly vitality. If scholarly work in specific fields withers and fades, there is no way that student learning in these same areas can flourish.

Policy leaders seem to think that they need to eviscerate the liberal arts in order to grow the economy. But what do employers themselves actually say about their own priorities for the kinds of learning that college students need to succeed in today's innovation-fueled economy? Do employers share policy makers' disdain for the liberal arts? Are they calling on higher education to focus more narrowly on workforce development and eliminate the liberal arts dimensions of college learning?

Since 2005, when we launched the Liberal Education and America's Promise (LEAP) initiative, AAC&U has commissioned a series of employer surveys and focus groups. A report on the 2013 survey, released in April, provides a detailed analysis of employers' priorities. Chief among the findings is that employers recognize the continued importance of liberal education and the liberal arts:

- 80 percent of employers agree that, regardless of their major, every college student should acquire broad knowledge in the liberal arts and sciences.
- When given a description of the twenty-first-century liberal education AAC&U has been championing through the LEAP initiative, 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.
- 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. Twenty-nine percent prefer broad learning only!

In addition, nearly all the employers surveyed (95 percent) give hiring preference to college graduates with skills that will enable them to contribute to innovation in the workplace. Nearly all (93 percent) also say that a demonstrated capacity to think critically, communicate clearly, and solve complex problems is *more important* than a job candidate's undergraduate major. Across many areas tested, employers strongly endorse educational practices that involve students in active, effortful critical inquiry and evidence-based reasoning—practices including collaborative problem solving, internships, senior projects, and community engagements. Employers consistently rank outcomes and practices that involve application of skills over acquisition of discrete bodies of knowledge, and they also strongly endorse practices that require students to demonstrate both acquisition and application of knowledge. In sum, employers seek to hire liberally educated college graduates.

As these results reveal, then, the worrisome disconnect is not between study in the liberal arts and preparation for success in today's economy, but rather between leading policy makers' views of the kind of preparation students need and the overlapping views of educators and employers.

Recognizing that action is needed to achieve greater alignment between public policy priorities, workforce demand, and educational practice, AAC&U has worked through the LEAP Presidents' Trust, a leadership group consisting of presidents from all sectors of higher education, to shape the Employer-Educator Compact (see www.aacu.org/leap/presidentstrust/compact). Bringing together college presidents and leading employers of college graduates in order to support the goals of the LEAP initiative, this newly launched effort underscores the importance of liberal education for the economy. This ongoing endeavor will be featured in the spring issue of *Liberal Education*, where we will publish the full results from our latest employer survey and the full text of the Employer-Educator Compact. Stay tuned—and join the LEAP campaign! We need all hands on deck to insist and ensure that the liberal arts and sciences remain absolutely indispensable to America's future and to students' long-term success.—CAROL GEARY SCHNEIDER

Employers recognize the continued importance of liberal education and the liberal arts

Back in June, the *Chronicle of Higher Education* published an especially thought-provoking article exploring the diversity of teaching formats and strategies that different faculty members at different institutions use in a widely taken course—in this case, microeconomics. Reprinted here, the article raises many questions about what, where, and how students learn in courses that are assumed to cover the same ground. To explore some of these questions, and to unsettle some of the assumptions, we asked Carol Geary Schneider and Stephen Ehrmann each to respond. Ehrmann is vice provost for teaching and learning and associate professor of educational technology leadership at George Washington University, one of the schools profiled in the *Chronicle* article.

This issue of *Liberal Education* also features the last in our “PKAL Perspective” series, which ran throughout 2012. In this stocktaking final article, Jeanne Narum, the founder and director emeritus of Project Kaleidoscope, reviews the original impetus for PKAL and reflects on the lessons learned from more than twenty years of work to improve undergraduate STEM education in the United States. Since 2008, PKAL has been AAC&U’s STEM leadership center.

Rounding out the issue is a diverse set of Perspectives articles. Tony Blair, the former British

FROM THE EDITOR

prime minister, provides a broad overview of the Tony Blair Faith Foundation, and his coauthor, Craig Bardsley,

fills in details about the foundation’s evolving work with colleges and universities around the world. The next article focuses on the Personal and Social Responsibility Inventory, a national campus climate survey originally developed by AAC&U as part of the Core Commitments initiative and now administered through a partnership between AAC&U and the Research Institute for Studies in Education at Iowa State University. The author, Robert Reason, discusses some preliminary results from the most recent administration of the survey. This is followed by consideration of the difficulties community colleges face in designing—and finding curricular room for—general education programs that are grounded in the liberal arts. The subject of the final Perspectives article is a multi-campus, cross-disciplinary collaboration that sought ways of foregrounding and developing certain “habits of mind.” With funding from the Lumina Foundation, thirty developmental education instructors from three colleges in California worked together to create lesson exemplars that target intellectual capacities such as motivation and self-efficacy.

Finally, in this quarter’s My View article, an academic administrator reflects on his yearlong experience studying best practices in serving students with learning and other disabilities. What he learned has had a lasting effect on his thinking—not only about how best to serve these particular students, but also about how broadly beneficial many of the practices turn out to be.

—DAVID TRITELLI

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New Mission Statement Approved

The AAC&U board of directors has approved a new mission statement that reaffirms the association’s long-standing commitment to the aims and outcomes of liberal education, while also underscoring its corollary commitment to access, quality, and inclusion. The new statement reads as follows: “The mission of the Association of American Colleges and Universities is to make liberal education and inclusive excellence the foundation for institutional purpose and educational practice in higher education.”

Ten Community Colleges to Participate in the Roadmap Project

AAC&U has selected the following ten community colleges to participate in the second phase of the Developing a Community College Student Roadmap project: Alamo Colleges (TX), Brookdale Community College (NJ), Chattanooga State Community College (TN), College of the Canyons (CA), Community College of Allegheny County (PA), Community College of Baltimore County (MD), Manchester Community College (CT), Massachusetts Bay Community College (MA), Monroe Community College (NY), and Wallace State Community College (AL).

Funded by the MetLife Foundation and part of AAC&U’s Liberal Education and America’s Promise

initiative, the Roadmap project assists community colleges in creating robust and proactive programs of academic support—tied to expected learning outcomes—that are designed to engage students at entrance and teach them how to become active partners in their quest for educational success. For more information about the Roadmap project, see www.aacu.org/roadmap.

Rethinking Undergraduate Business Education Wins Ness Book Award

At the AAC&U annual meeting, the 2013 Frederic W. Ness Book Award was presented to Anne Colby, Thomas Ehrlich, William M. Sullivan, and Jonathan R. Dolle for *Rethinking Undergraduate Business Education: Liberal Learning for the Profession* (Jossey-Bass, 2011). The Carnegie Foundation for the Advancement of Teaching’s national study of undergraduate business education found that most undergraduate programs are too narrow, failing to challenge students to question assumptions, think creatively, or understand the place of business in larger institutional contexts. *Rethinking Undergraduate Business Education* examines these limitations and describes the efforts of a diverse set of institutions to address them by integrating the best elements of liberal arts learning into business curricula in order to help students develop wise, ethically grounded professional judgment.

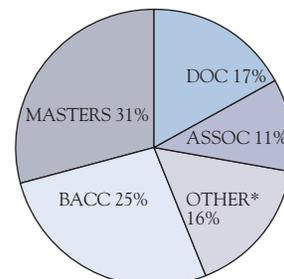
The Ness Award, which recognizes books that contribute to the

Upcoming Meetings

- April 4–6, 2013
Student Success and the Quality Agenda
Miami, Florida
- June 1–5, 2013
Institute on General Education and Assessment
University of Vermont
- June 11–15, 2013
Institute on High-Impact Practices and Student Success
University of Wisconsin–Madison
- July 10–14, 2013
Institute on Integrative Learning and the Departments
Portland State University
- July 23–28 and July 30–August 4, 2013
PKAL Summer Leadership Institute for STEM Faculty
Baca Campus of Colorado College

understanding and improvement of liberal education, was established in 1979 to honor AAC&U’s president emeritus, Frederic W. Ness.

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DAN BERRETT

Three Colleges' Different Approaches Shape Learning in Econ 101

NO MATTER THE COLLEGE, a class in the principles of microeconomics is likely to cover the discipline's greatest hits. Opportunity cost? Check. Supply and demand? Ditto. The same goes for such topics as comparative advantage, elasticity, and market structures. But these touchstones of the curriculum may only modestly influence what a student actually learns.

What matters more are a course's unspoken attributes that colleges rarely make plain and about which students almost never ask: For what sort of student is the course really meant? How does the professor teach and assess the material? And what does he or she think the discipline is all about?

The importance of these factors became clear during a recent semester-long experiment during which I audited principles-of-microeconomics courses at three institutions. As questions proliferate about the value of college, those outside academe are wondering what a course's name really signifies on a graduate's transcript. What would these three building-block classes say about the goals and rigor of undergraduate education, and about colleges' efforts to engage students? Each institution chose the professor whose section I audited. One was a research-intensive private institution, George Washington University; the second was a regional public, George Mason University; and the third was an online for-profit, the University of Phoenix. The professors had the same basic goal: teaching students how to think like economists. And each said that meant cultivating a scrupulous style of analysis, one in which a proposal's costs and benefits, both seen and unseen, are carefully examined. From that common origin, however, the courses diverged.

Economics through models

"I throw a lot of stuff at them and hope it sticks," says Steven M. Suranovic, an associate professor of economics and international affairs at George Washington. The 232 students in his section can attend twice-weekly lectures or, if they miss one, catch a recording online on Blackboard, the learning-management system. He also uses Blackboard to post readings, lecture notes, and slides. Four teaching assistants lead weekly discussion sections of twenty-five students and grade the quizzes, exams, and

DAN BERRETT is senior reporter at the Chronicle of Higher Education, where this article originally appeared. Copyright 2012 by the Chronicle of Higher Education. Reprinted with permission.

As questions proliferate about the value of college, those outside academe are wondering what a course's name really signifies on a graduate's transcript



problem sets. To Mr. Suranovic, the homework and quizzes serve a clear purpose: introducing students to models, which will prepare them to pursue a major or even graduate training in the field. “If you’re not learning models,” he says, “you’re not learning what the entire foundation of the discipline is.”

Models represent the interplay of such economic factors as supply, price, and demand, typically on an x and y axis. They are the discipline’s tool for understanding how the world works. Mainstream economists like Mr. Suranovic rely on them to reach conclusions about economic activity. But models don’t come naturally to most students, Mr. Suranovic says. Only through repeated exposure can students absorb the discipline’s syntax and come to understand how an economist thinks. “You’ve got to practice,” he says.

He gives his students plenty of opportunities to do so. He assigns six problem sets, of which four count toward the students’ grades. The first set alone requires students to answer more than sixty questions in which they interpret nine models representing such metrics as pizza consumed, bowling balls produced, and lawns mowed relative to trees planted. Other homework exercises use agrarian or industrial examples, which also dominate the illustrations from his lectures.

Students, for example, practice the concept of comparative advantage through this problem: “Suppose Reggie has the following unit-labor requirements producing corn and wheat: $a_{LC} = 200$ hrs. per ton, $a_{LW} = 100$ hours per ton. Nigel has the following unit-labor requirements: $a_{LC} = 300$ hrs. per ton, $a_{LW} = 120$ hours per ton. Use the opportunity cost method to determine who has the comparative advantage in corn.” Answer: “Because a_{LC}/a_{LW} (Reggie) = $200/100 = 2$ tons of wheat per ton of corn is less than a_{LC}/a_{LW} (Nigel) = $300/120 = 2.5$ tons of wheat per ton of corn, Reggie has the comparative advantage in corn.”

While such exercises may inculcate students into economists’ way of thinking, they do not whet everyone’s appetite for the subject. At a class in February, a man and woman stride into the auditorium fifteen minutes late and approach Mr. Suranovic as he lectures about calculating a firm’s profit. They walk past him, drop their problem sets in a box corresponding to their TA, and leave. I glance at the student next to me, and we both roll our eyes. A few minutes later, he has his laptop open and his credit card out. He is updating his Netflix account. After class I ask what he thinks of the course. “It’s too much, man,” he says, shaking his head. “Too much work.”



George Washington University

How valuable is rigor if it is not paired with stringent grading?

Too much economics. Too much math.” Laptops are not the biggest distraction. Phones are far more prevalent. During one lecture, a man spends nearly the entire class on his phone playing the game Temple Run. But he isn’t tuning out because the math is too hard. “The professor goes over the same point again and again. I get it,” he says, smiling somewhat embarrassedly. “But don’t tell him.” I never saw him in class again.

Mr. Suranovic is well aware of what students are doing on their gadgets but figures he is dealing with adults. It is their choice not to pay attention to the education for which they, or someone, is paying handsomely. Tuition, fees, room, and board at George Washington exceed \$55,000, making it one of the most expensive institutions in the country.

As the semester proceeds, attendance flags. At the start of a lecture in late April, the auditorium is about one-third full. “It’s an intimate little club here instead of a 250-student lecture,” Mr. Suranovic says. “It looks like some people have given up.” Some have simply made calculated choices. One student said he would rather save money on parking. Instead of attending in person, he watches lectures online on his own time. Another, Tealye Long, who is a freshman majoring in Spanish, said she relied almost exclusively on Mr. Suranovic’s lecture notes to study. Since they were online, she didn’t feel the need to go to class.

Not all students were blasé. In a discussion section in March, London Clark, a freshman majoring in journalism, answered every question the TA asked about how firms set prices in perfectly competitive markets, while most of her classmates stayed silent. Preparation made the difference. Ms. Clark read Mr. Suranovic’s notes before the lecture and consulted them as he spoke. She also regularly went to discussion sections, which were half-full on the few days I attended.

High expectations

Judging solely from the volume of work, Mr. Suranovic’s class seemed to be the most rigorous of the three I audited. Besides the four problem sets they are assigned, his students have to take three quizzes out of a possible four, a midterm, and a final. The exams are tough; they include short-answer questions, some of

which require students to run calculations based on various models. Most of the students struggle to finish the midterm in the fifty minutes allotted. Many leave wincing or cursing. “We’re going to pray for a curve, pray for a curve!” a woman says as she flees.

Her prayers are answered. Mr. Suranovic’s curve is generous. He calculates the mean, fixes it at the level of B-minus or C-plus, and sets the curve accordingly. The mean on the midterm was 28.8 out of 50, a failure if calculated as a raw score. On the final, with its 100 possible points, the average was 63. The nearly 20-point curve seemed large, and it raised a question: How valuable is rigor if it is not paired with stringent grading? While Mr. Suranovic’s assignments and exams demand effort, the curve lets students off the hook. You can swing a B-minus without learning the material well enough to technically pass either of the tests.

Mr. Suranovic acknowledges the dangers of grade inflation but sees the low raw scores, which have been consistent over his twenty years of teaching, as evidence that he simply gives difficult tests. Those who get Cs are grateful, he says. A few students do very well, coming close to perfect scores on the exams, which tells him the exams are appropriately difficult. Still, he concedes that high expectations do not necessarily guarantee significant learning. “Are my students learning more than they would with another professor?” he asked. “I don’t know.”

Deeper concepts

At George Mason, Donald J. Boudreaux, a professor of economics, does not emphasize the discipline’s mathematical aspects. Asking students to run through equations is misguided, he says, because it distorts economics into something mechanistic. “It’s easy to run across mindless exercises,” Mr. Boudreaux says. “I want to instill a little bit of the gestalt, the deeper worldview of how an economist views microeconomics.” For him, the heart of the discipline goes beyond quantification. “It’s the science of society,” he tells the three hundred students at the opening lecture in his section. “It’s what makes the world hang together.”

His attitude reflects the particular orientation of his institution’s economics department.

Its libertarian bent and embrace of the free-market philosophy of Friedrich Hayek, the influential Austrian economist, place it outside economic orthodoxy. Mr. Boudreaux does not hide his zeal for the free market, but he also feels his views do not affect the material he covers. “There’s very little in that class I say that even Paul Krugman would disagree with,” he says, referring to the liberal columnist for the *New York Times* and Nobelist from Princeton University. George Mason’s faculty has had two Nobel laureates of its own who are now emeritus. It is a regional public university, one whose stature has grown in recent years but that remains in a tier below Virginia’s more elite public institutions like the College of William and Mary and the University of Virginia.

Mr. Boudreaux’s class is not designed to train potential doctoral candidates in economics but to do something more modest and achievable. “My goal in every principles-of-microeconomics course,” he says, “is to have students who come regularly and pay attention be exposed in an effective way to the ways an economist thinks.” But exposure occurs through one method alone: listening to Mr. Boudreaux talk. His class offers a no-frills experience. There are no discussion sections, no teaching assistants, no quizzes, and no homework, just a three-hour lecture every Wednesday night with little technological razzle-dazzle. “I don’t use Blackboard. I do not know what it is,” he says, then points to his head. “All my notes are in here.”

Lecturing as entertainment

With such a heavy emphasis on the lecture, Mr. Boudreaux treats his course a bit like a performance. His voice is a sonorous baritone, his humor disarming (he makes frequent references to his taste for wine), and he dots sentences with well-placed pauses. “Students are really, I sense, less comfortable today than they were twenty to twenty-five years ago listening to a line of reasoning,” says Mr. Boudreaux, who joined the faculty in 1985. “I’m much more aware that I have to be something of an entertainer, just to keep their attention.”

To teach comparative advantage, he uses an example that bears a surface resemblance to Mr. Suranovic’s at George Washington.

I’m much more aware that I have to be something of an entertainer, just to keep their attention

But Mr. Boudreaux’s differs in telling ways. He creates a bit of suspense to start: “I’ve got goose bumps knowing I’ll be the first person to explain this to you.” He uses himself and a student named Sezan sitting near the front. Suppose we are on an island, he says, and all we care about are bananas and fish. He can pick fifty bananas a day, or catch fifty fish a day. Sezan is better at both tasks in absolute terms; she can pick one hundred bananas a day, or catch two hundred fish per day. It still makes sense for her to trade. Why? Because of opportunity costs, he explains. Sezan would have to sacrifice two fish caught for every banana she picks. What matters are the ratios, he says, not the absolute numbers. “It’s like magic, almost,” he says. By trading, everyone is able to tap into their talents and benefit from each other. “Each of us can consume more than each of us can produce. Let that sink in. This is astonishing.”

Many of his students say they appreciate his flair and consider Mr. Boudreaux an excellent lecturer. And yet, even his theatrics and modest expectations can fall short. His students have to do little more than attend class. “If you show up regularly, don’t fall asleep, and you’re not intoxicated you should be able to pull a B-minus,” he says.

While attendance dips as the semester proceeds, the falloff is not as striking as at George Washington. Still, some students at George Mason are physically present while being mentally absent. During one lecture in April, as Mr. Boudreaux describes the “impossibility theorem” of Kenneth J. Arrow, several students are beguiled by their laptops. One watches highlights of Vince Carter, a professional basketball player, dunking. Behind him, a woman chats online. Two others are engrossed in an animé movie. Such behavior occurs even though Mr. Boudreaux makes clear that he finds it unacceptable. In his first lecture, he explains that texting offends him. During another, he stops speaking when a student exits. “I’ll wait,” he says. “It’s very rude to talk when someone is trying to leave class.” He tries other pedagogical tricks. He often repeats key concepts, saying them three times to telegraph material that will appear on his exams. The repetition is intended both to accommodate the growing numbers of exchange

students from Asia and the Middle East, and to connect in some way to his three hundred students. “I can’t look students in the eyes like I can in a smaller class to see if they’re getting it,” he says.

Exams offer him the only real opportunity to gauge his students’ grasp of the material. He administers three exams, two midterms, and a final that account for the entirety of the grade. Each midterm consists of thirty questions, and the final has fifty; they are completed on a Scantron sheet. The tests are multiple choice, with most questions having four options. Random chance is students’ ally; nearly one of five questions asks them to answer true or false. Some students finished their exams in twenty minutes, and many used the same word—“straightforward”—to describe them. Three or four earned perfect scores.

“I liked this guy,” Joseph Brand, a finance major, said after the final exam. He retook the course with Mr. Boudreaux after dropping a version of the class taught by another

member of the department because he didn’t think he was learning. “As long as you learned and listened, you did well.”

Democratizing the classroom

The cycle of the traditional class—lecturing students and testing them on what you said—is the kind of thing for which Peggy V. Douglas, an online adjunct instructor for the University of Phoenix, has little patience. She calls such an approach the “banking method” of education. “The information is deposited in these empty vessels and taken out for test time,” she says. “Online, I’d say it’s easier to democratize the classroom so that everybody is a co-teacher and a co-learner.”

Ms. Douglas has taught for more than twenty years, at both online and brick-and-mortar institutions. She left the tenure track to advise colleges in finding better ways to teach students. She has also built a parallel career in community organizing and social justice. It is an interest that has informed her



George Mason University

**This focus on
applying knowledge
reflects Phoenix's
traditional niche
in teaching
nontraditional
students**

teaching and research, including her doctoral training at the University of Tennessee at Knoxville in environmental economics. In her Phoenix course, she says, "I raise questions about the relationship between the status quo and the economy. Economics tends to be very value-free. So I ask, 'How would you create an economic system that is more egalitarian or democratic?'" She poses such questions in the course's online discussions, which occur asynchronously, with the eighteen students in her section logging on eight times or more during the week. There are no lectures or exams. Students learn the material by reading four chapters each week from the textbook *Economics*, by David C. Colander. Ms. Douglas reinforces the material through online discussions.

The discussions, which count for 20 percent of the grade, form the heart of the class as I

experienced it. Phoenix arranged for me to make one-hour visits to the course website each week for the five-week duration of the class. In a highly mediated web-based teleconference, I attended the

course vicariously, guided by academic administrators who clicked on various parts of the course site that I requested. Two public-relations officers listened in.

In the second week of the course, Ms. Douglas asks a question to kick off a discussion about comparative advantage and opportunity costs. "Can anyone explain to what concept the 'no free lunch' axiom pertains? What if someone buys you lunch? Isn't that free?" One student tells a story about how a salesman used to visit her father's store when she was a teenager and take her and her father to lunch. Ms. Douglas amplifies the student's comment. "Even if something appears to be free," she



University of Phoenix

writes, “there is always a cost to the person or to society as a whole, even though that cost may be hidden or distributed elsewhere.” Later, she tells another student that his answer touches on the law of comparative advantage. She explains the concept using Kobe Bryant, the basketball player, as an example. Mr. Bryant obviously enjoys an absolute advantage at basketball, but suppose, she writes, that he also happens to be the fastest lawn mower in the world. “Since he’s better at mowing lawns than you, can’t he mow more cheaply than you?” she writes. “That is, if someone has an absolute advantage in something, doesn’t he automatically have a comparative advantage in it? Can anyone explain?” The answer, of course, is that even though Mr. Bryant has an absolute advantage in mowing the lawn, he wouldn’t spend time doing so because he would lose a lot more money by sacrificing playing time on the court.

During some discussions, students clearly grasp the concepts and draw inferences between their lives and the topic. During others, Ms. Douglas seems to be the one doing most of that work, bringing the students’ sometimes fumbling answers back to economic principles. It is difficult to tell at times where the students’ efforts to apply concepts hit the mark, and where Ms. Douglas has fleshed out what students may not fully understand or are unable to articulate. What is clear is that the Phoenix students are routinely expected to write and apply the material they are learning, and they receive frequent feedback from an expert to correct their misperceptions.

Shades of gray

For Ms. Douglas, the goal of the class has less to do with transmitting content like comparative advantage and more to do with getting students to see shades of gray. When she reads online discussions, she looks for signs of improvement in students’ ability to reason and reach a conclusion. Even though she’s judging the students’ development over just a five-week period, she says such growth plainly occurs. Ms. Douglas also searches for signs of growth in the students’ three papers, which account for nearly half of their grade. The assignments range from 750 to 1,400 words, and cover such topics as consumption, supply and demand, and the characteristics of the four main market structures.

The last part of their grade, accounting for about one-third of the grade, is a group project. The final product is a four-thousand-word paper on the history of a business or industry of their choosing (the groups selected McDonald’s, Starbucks, Zappos, and Amazon), along with an analysis of the market in which it operates and prospects for the organization’s future. Each student has to contribute a section to the paper. As happens in many groups, the students have to hold one another accountable. “Please note that words like ‘dumb’ are not appropriate in formal college writing along with the use of pronouns and ending sentences with prepositions,” one student writes to another. “I hope you do not find my comments too critical as that is not my intention.”

Math is absent from the course at Phoenix. When one student asks online whether there will be formulas in microeconomics like there were in macroeconomics, Ms. Douglas responds that they will be “implicit in the expectations” for the class because students will need to use them to craft answers. “Other schools are more interested in students developing quantitative analysis skills,” Ms. Douglas explains to me later. “So, rather than giving students a problem where they calculate opportunity costs and gains from trade, I create a dialogue on the discussion board to explore the applications of comparative advantage.” This focus on applying knowledge reflects Phoenix’s traditional niche in teaching nontraditional students. Economics is meant to be embedded in the students’ everyday experience. Ms. Douglas also keeps in mind how her course, and the information and abilities her students might develop, will help them after class is over. Some may own a business one day. “They’ve got to understand the concept of price elasticity to sell their products,” she says. “I will spend a lot of time on that to make sure they understand the concept, but maybe not the formula. They can look that up.” □

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CAROL GEARY SCHNEIDER

Holding Courses Accountable for Competencies Central to the Degree

FEATURED TOPIC

HIGHER EDUCATION IS FAD-PRONE, and today the breakthrough of the hour is the massive open online course, or MOOC. The press breathlessly celebrates the prospect that students—any students—now can take “totally free” courses from star-studded faculty at the nation’s most re-

It takes more than a single course to develop any significant cross-cutting learning outcome

nowned institutions. And, with alacrity, legislators, administrators, and entrepreneurs already have seized on the prospect of offering MOOCs (and other “do-it-yourself” vendor-provided online courses) as a cost-saving option for students to complete required courses, especially general education courses, now that drastic budget reductions across higher education have made it increasingly difficult for many public campuses to offer enough courses to meet student need.

When faculty raise questions about the educational quality of courses that enroll tens of thousands of students in a single class, the response from MOOC proponents is to remind us that the content taught in these courses is, after all, fully equivalent to, and likely even “better” than, the content covered in traditional courses. Moreover, as proponents point out, the online quizzes and final exams are very similar to those offered in place-based large-enrollment courses. In sum, if these massive courses are at least as good as the big courses that have long been staples in many collegiate institutions, why not cut to the chase and let students count MOOCs toward their degree requirements?

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As such arguments gain traction, especially with policy leaders and legislators, it is time to take a close look at the function of the stand-alone course in the larger arc of society’s overall goals for high-quality college learning and in the particular context of college curricula designed to help students meet those goals. In this context, Dan Berrett’s illuminating article on microeconomics as taught in three quite different institutions has done us all the favor of creating an opportunity to reflect on what makes a course a high-quality experience, or not.

Usefully, Berrett’s reporting—based on auditing three notably disparate courses with the same shared title—reminds us that course titles and those interchangeable course credits that students “earn” for successful completion mask a huge degree of variability, both in terms of what the courses actually ask of students and, especially, in the connections between course assignments and the competencies or learning outcomes college degrees are supposed to certify.

Berrett’s article further invites a more searching analysis of what we *ought* to expect from courses that “count” toward program and degree requirements. The key question here, in my view, is not just whether a non-traditional course is equivalent to a place-based course that already “counts” toward the degree. The key question is whether specific course experiences, and the programs with which they are aligned—digital, face-to-face, or blended—are designed in a way that helps students both practice and demonstrate high-priority learning outcomes (hereinafter, “essential competencies”) that society expects



in a well-prepared college graduate, both for the economy and for knowledgeable citizenship.

If some courses we already accept for credit fail to meet this competency development standard, then we ought to find ways to fix them. And most assuredly, we should not build the twenty-first-century university—digital or not—on a weak foundation of low-impact pedagogical practices.

**The competency movement:
Less heralded, more consequential**

In this context, I want to look specifically at the connections between courses—regular bread-and-butter courses that already “count” on most campuses—and another major reform movement that is gaining steam in higher education, the effort to make competencies rather than credits central to the degrees we award in higher education.

The competency-based reform movement is less heralded and certainly less “covered” by the mainstream press than MOOCs. But we at the Association of American Colleges and Universities (AAC&U) see competency-based learning as an investment in the future. The whole point of encouraging college-level study, after all, is to build the human capacities we need to tackle and solve significant problems, both in the economy and in our democracy. Competency development is just another term for capability development. Building individual and collective capabilities is a crucial part of the social contract between universities and society.

But competency development also is an arena in which higher education is falling short. As numerous national studies demonstrate, many students who successfully gained a degree did not, in fact, successfully master such essential competencies as writing, critical thinking, quantitative reasoning, ethical reasoning, or global literacy (Finley 2012). This is a problem we all need to solve, and the key to stronger competency development for students lies directly within the design of the curriculum and, especially, in what specific courses do, or do not, expect students to practice. So, if students’ development of socially valued capacities or competencies is one goal of higher education, surely we need a broad educational dialogue about the standards we set for courses and other educational experiences that “count” for the degree.

Those standards need to go beyond seat time and beyond concern with the quality of course content and the course lecturer. Rather, quality standards for the twenty-first-century curriculum should directly explore the relation between course requirements and meaningful opportunities for students to actually develop competencies central to their degrees.

**Microeconomics and students’
competency development**

The three courses experienced and reported in Berrett’s essay offer a rich case study for this kind of analysis. Microeconomics is a cornerstone of the economics major almost everywhere, including the three institutions whose courses Berrett audited: George Mason University (GMU), George Washington University (GW), and University of Phoenix (Phoenix). Students taking these three courses will fulfill a requirement for the economics major, if they wish to pursue that field of study in greater depth.

But microeconomics also is one of the courses that many students take to fulfill their general education requirements in the social sciences. It makes sense to ask, then, how—and how well—these three microeconomics courses align with the broader goals that higher education already has articulated, both for general education and for the curriculum as a whole. Or, to put it differently, beyond a general grasp of key concepts in microeconomics, what essential competencies do these three courses require students to practice and demonstrate?

As Berrett’s article makes clear, these three courses are anything but interchangeable when it comes to the kinds of assignments they give students. So we can’t assume—for these or most other courses offered across higher education—that the course title signals students’ likely practice of any specific learning outcome or competency. Instead, we have to review these courses—just like a general education oversight committee—on a case-by-case basis. But to do this, we need to determine which competencies our campuses actually “require” for the degree.

Competencies central to US degrees

Over the past decade, AAC&U has worked with its member community to identify a set of widely endorsed goals for student learning in college that students should achieve across

the educational experience, both in general education and in majors. Whether we call these “learning outcomes” or “competencies,” they represent a crucial component of that capacity development that higher education promises from this nation’s investment in higher education.

Readers unfamiliar with these Essential Learning Outcomes, which have been endorsed by educators and employers, can find them described in detail at www.aacu.org/leap. In addition, the Degree Qualifications Profile, now being beta tested by Lumina Foundation (2011), shows how these outcomes can be woven into competency-based frameworks for the associate’s, bachelor’s, and master’s degrees. Here, I focus only on a subset of these frameworks for learning, specifically, the strand that describes the intellectual and practical skills that the great majority of colleges, universities, and community colleges now describe as key goals and, therefore, as high-priority demonstrable outcomes for students completing their undergraduate programs.

Research conducted for AAC&U shows the near universal embrace of these outcomes on campus (Hart Research Associates 2009). In a survey of our member campuses that had a 48 percent response rate, we found that 80 percent of responding campuses already had identified learning goals or outcomes they required either for the degree or for general education. Of these campuses with identified learning goals, large percentages reported these essential competencies as requirements for the degree: writing skills (99 percent), critical thinking (95 percent), oral communication (88 percent), information literacy (76 percent), and quantitative reasoning (91 percent).

In setting these goals, educators effectively stand hand-in-hand with employers. Overwhelmingly, as numerous employer studies attest, employers affirm the importance of these essential competencies for success in the workplace (Peter D. Hart Research Associates 2006, 2008; Hart Research Associates 2010, 2013). In addition, by very large majorities, employers urge higher education to “place more emphasis” on these competencies, ensuring that students both practice them and

Beyond a general grasp of key concepts in microeconomics, what essential competencies do these three courses require students to practice and demonstrate?

arrive in the workplace ready to deploy them.

If these goals for learning are so widely endorsed, both by educators and by employers, the next question that follows is whether college courses—and the curriculum as a whole—are well designed to help students practice, achieve, and demonstrate these essential competencies. For example, if we want

students to emerge “fluent” in quantitative reasoning or written communication, then we need to know which courses foster these capacities and where they are supposed to be demonstrated at the level of accomplishment requisite to the degree.

Competency requirements and course assignments

What then of the three very different courses that Berrett describes from his auditing of microeconomics at three different universities? Since these courses have been approved for the major in all three institutions, I will simply assume for the moment that each provides a sufficiently sophisticated introduction to the content of microeconomics—that is, to its core concepts and the way they are used in economic analysis and argument.

But since microeconomics also “counts” as a general education requirement, it is legitimate to ask which general learning outcomes these courses address, and how well these courses help students develop at least some of the competencies that educators and employers agree are essential.

When I first saw the title of the course Berrett selected for analysis, I reflexively assumed that each of these courses would, among other things, include quantitative reasoning as an expected course competency. Economics has become a highly quantitative field; microeconomics is a required foundational course for the major; surely these required core courses would foster quantitative competence. However, as Berrett reports, two of these three courses do not involve quantitative exercises at all. Introductory courses in a discipline often are “enticement” courses, and the faculty members at GMU and Phoenix say directly that they don’t want to make these foundational courses too technical for students. This choice

makes practical sense, if we think about the entering quantitative competencies of today's college students. Despite years of so-called school reform, the average entering college student isn't really ready to tackle advanced quantitative reasoning. (Indeed, on many campuses, the great majority of students place directly into remedial levels of math education.)

In this context, the GW course stands out for its determination to tackle the quantitative reasoning challenge directly. By Berrett's account, the course devotes extensive time and effort to teaching students the techniques of mathematical modeling and problem analysis. But the results seem to illustrate the difficulty that faculty face in teaching math-intensive subjects to students who lack sufficient preparation. As Berrett reports, students struggle with the homework and on the examinations. As a result, when their raw scores are determined, many students have, for all practical purposes, failed the course. However, the faculty member's generous grading "curve"—nearly twenty points, according to Berrett—moves students' final grades to much higher levels. An online math tutorial is available to help students get up to speed, but students' raw scores on course tests suggest either that the tutorial was not enough, or that students didn't actually do enough of the recommended extra study.

Thanks to the professor's curve policy, students don't fail and their grade point averages are "protected." But what about these students' development of quantitative competency—a goal that 91 percent of AAC&U member campuses with articulated learning goals say they have set for students? For students who continue in economics, or another quantitative field, there will be further opportunities to work on sophisticated quantitative skills. But what about students who took economics only to meet a general education requirement, or even just out of general interest?

Essential competencies require more than a single course for achievement

Here, the GW course illustrates a basic rule of thumb about any of the essential competencies that colleges seek to develop. To be succinct, it takes more than a single course to develop any significant cross-cutting learning outcome. Whether we're talking about quantitative reasoning, writing, information literacy, or any other sophisticated intellectual skill, students

need many opportunities across the curriculum to develop these essential competencies. For the great majority of students, as for the GW students whose struggles Berrett describes, one competency-intensive course alone will never be enough.

Soberingly, however, for students not majoring in a quantitative field, the curriculum is rarely organized to foster demonstrable competency in quantitative reasoning, despite the value that educators and employers both attach to this learning outcome. Most campuses require students to take at least one course in mathematics, and the three campuses Berrett studied follow this pattern. (Phoenix requires two math courses.) But these math courses are almost never sequenced with other general education requirements. For the most part, required math courses are really stand-alone course requirements. And, for all but the most outstanding students, stand-alone course requirements are insufficient to develop a demonstrated competency.

The result of this disconnect, according to ETS, is that only 10 percent of college seniors are actually proficient in mathematics, with many students' competence in mathematical reasoning effectively declining in the period from entrance to exit (Finley 2012). As Derek Bok (2005) reported in *Our Underachieving Colleges*, even at highly selective campuses, students demonstrably lose ground in mathematical competence when they major in fields where math is not expected.

Quantitative reasoning is an area where well-designed online studies can indeed address a challenging problem of systemic underperformance. But no single digital quantitative tutorial—no matter how brilliantly conceived—will itself be sufficient to help students achieve and *sustain* competency in quantitative reasoning. If we want students to take this essential competence with them from college, then the *curriculum as a whole* will have to provide multiple places where the competence is built into expected assignments.

For competency development, the assignments are crucial

If competency development is the goal, then courses need to signal which general competencies they help students practice, and whether those competencies are at the entry, intermediate, or graduation level when it

comes to students' assignments and demonstrated achievements. This is a general principle for any program that aims at developing and certifying students' achievement of competencies. But it is also a principle that ought to apply to new providers, including the MOOC providers, as well. The question to ask about any course is not how good the lecture was, but how well designed and on-target the student assignments were.

In this context, I took note that the University of Phoenix course has fully incorporated the idea that "assignments matter" into its totally online version of microeconomics. The course Berrett audited may be math-lite, but it is notably writing and project intensive. Students each wrote several papers, an exercise that simultaneously helps them grasp the implications of course concepts and also work on their proficiency in written communication. In addition, all students took part in group projects resulting in collaboratively framed research reports, thus addressing yet another outcome that employers rank high: problem solving in groups. Moreover, since Phoenix's online courses are comparatively small, the faculty member who teaches the course is able to work directly with the students, give them feedback, and guide their various efforts. This kind of teacher-student involvement, numerous studies indicate, is a key factor both in students' persistence to a degree and also in their achievement of higher levels of actual learning.

For competency development, great lectures are not enough

Thus far, we have seen that the GW and Phoenix courses devote meaningful time to students' development of general competencies, with competency practice woven together with students' mastery of course content. The competencies students practice in these two courses are quite different, but each course is designed to help students work on specific intellectual skills that are highly valued, both in the economy and in society. But when it comes to students' development of essential competencies, the GMU course raises fundamental questions about our responsibilities to students—questions that apply both to

The question to ask about any course is not how good the lecture was, but how well designed and on-target the student assignments were

the traditional curriculum and to the fast-progressing digital revolution.

The GMU professor who opened his course to a creative reporter is a distinguished economist in a major department at a well-regarded university. He is, according to Berrett, a dazzling lecturer. Yet, as Berrett also reports, this large-enrollment lecture course requires no homework of any kind. There are two mid-terms and a final; all three exams feature multiple-choice tests, Scantron-scoreable, with most questions offering "four options" and some only two—true or false.

The structure of this course—multiple-choice midterms and examinations; no homework; no projects; and no required writing—is anything but unusual. And pointing to the prevalence of this model across higher education, MOOCs proponents who say huge-enrollment courses, with great lecturers, can do just as well are entirely correct. Technology can score 150,000 multiple choice tests just as quickly as it can score 300, and, thanks to data analytics, technology helps professors spot almost instantly the problem areas where many students have missed key concepts. Thus informed, course designers can "fix" the presentation of concepts and drive up students' performance on the multiple-choice tests of conceptual understanding.

My argument, however, is that this design for a course—lectures plus multiple-choice exams—is wholly insufficient for high-quality college learning, either in the traditional curriculum or in the brave new world of digital innovation. Keeping in mind that the long-term goal of college is for students to develop knowledge *and* "essential competencies," higher education should critique as insufficient any course that does not include students' active, effortful work on projects, problems, assignments, research, or other practices that foster competency development.

The key to the future, as employers tell us and as we surely know from even modest attention to the wider world, is our collective capacity to deal successfully with complex problems and unscripted challenges. Routinized tests and "one-right-answer" examinations are simply insufficient to prepare students for a world that is characterized by complicated

problems and fluid, volatile, fast-changing contexts. The world is complex, and the point of the college curriculum—and of individual courses within it—is to help students develop sophisticated competencies they will need to grapple with that complexity.

As our most recent employer study shows, employers seek and value graduates who can contribute to innovation and adaptation in the workplace and in the economy (Hart Research Associates 2013). Our democracy also needs graduates who are competent in evidence-based inquiry, analysis, and reasoning, both qualitative and quantitative.

The curriculum should be organized to foster students' development of deep, transferable learning outcomes—the essential competencies. If students have no meaningful opportunities in specific courses to work on any of these

Every course should provide students with opportunities for active, guided, effortful practice on at least one of the essential competencies required for the degree

essential competencies, then no matter how interesting the course content, those courses are leaving students underprepared when it comes to key capacities that educators and employers alike consider fundamental. Different courses and different subjects will address these essential compe-

tencies in different ways. But every course should provide students with opportunities for active, guided, effortful practice on at least one of the essential competencies required for the degree.

Use the digital revolution to make competency development central and feasible

I understand, of course, that the tradition of academic freedom has long enabled each faculty member to make his or her own decision about whether to include effortful assignments in a particular course. The more work we give students, after all, the more work there is for the faculty and their teaching assistants. When an institution can't afford teaching assistants, faculty are much less likely to give high-effort assignments to students. Currently, many campuses lack sufficient faculty and staff capacity to help all their students develop essential competencies at high levels of demonstrated achievement. But, as Steve Ehrmann says in his discussion of the Berrett essay, this is a problem that technology can help institutions solve.

Let's imagine that campuses elect to use well-designed MOOCs not as substitutes for courses, but as backdrops and supplements to regular course readings and assignments. And let's imagine that class time is "flipped," across all course offerings and curricula, to emphasize small-group discussion, individual and group projects, technology-supported student research, writing, and problem solving. Let's imagine further that the program includes field-based learning that connects course content and scholarly analysis with collaborative problem solving done with partners in the regions where specific campuses are anchored. And, not least, let's imagine coaching for students in areas where they fall short. The coaching might include digital tutorials for students, but it would also feature opportunities for faculty to help students make direct connections



George Mason University

between the skills students are practicing and the specific problems—economic, societal, civic, or community-based—that the course assignments help students explore. New research from AAC&U shows that students feel more highly motivated to persist in their learning when they can see the significance of what they are learning (Finley and McNair 2013).

These hands-on student assignments create additional work for faculty members, clearly. But if faculty members are freed from lecture development and “coverage” duties, it is far more feasible to expect this level of commitment to students’ active development of essential competencies. With technology used imaginatively—not as a substitute way of delivering course content, but rather as a complement to the more intensive, hands-on work that competency development requires—then students would be far more likely to achieve and be able to demonstrate those Essential Learning Outcomes that educators endorse and employers urgently seek.

Conclusion

What then have we gained from this exploration of the connections between competency development and individual required courses such as those reported in the Berrett essay? My own conclusion from this analysis is that students’ competency development is a responsibility that cuts across many courses and many levels of expected student proficiency. To put it differently, it takes a curriculum, not just a course, to foster the competencies almost everyone now considers “essential.”

As we examine the value of educational innovations, we need to hold these innovations accountable to the overarching goals higher education is setting for the degree. Innovations should improve higher education’s capacity to foster students’ competency development. They most assuredly should not deplete it further. Perhaps MOOCs will meet this competency standard as digital innovations progress. But ultimately, no single course is sufficient, on its own, to develop the competencies society values and needs. So MOOCs and other courses need to be carefully calibrated to the educational goals, including the competency goals, of the curriculum as a whole and of programs within the curriculum.

Stringing courses together, willy-nilly, is an impoverished way to help students gain a

credential, whether those courses come from elite institutions or not. But creating connections across courses, with competency development valued and expected in every course or learning experience, is surely the key to students’ meaningful development of high-quality capacities.

We have entered an era of fast-paced educational innovation. But we have also entered an era of new clarity about the essential competencies that degrees need to foster and warrant. If we hold innovations accountable for competency development, students will reap the benefit they seek and deserve from college study. We really can’t afford to settle for anything less. □

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STEPHEN C. EHRMANN

How Technology Matters to Learning

FEATURED TOPIC

DID TECHNOLOGY make a difference, for good or ill, in students' learning of economics in the three courses described in Dan Berrett's story, first published in the *Chronicle of Higher Education* and reprinted above? That's the question that *Liberal Education* has asked me to discuss. By "technology," I mean not only online systems, video, and computer tutorials but also



Technologies such as learning management systems or class recordings have no direct impact on learning outcomes

the classrooms, textbooks, and other means of learning in use by faculty and students. Steve Suranovic's course at George Washington University was taught mainly face-to-face in classrooms but also used Blackboard and online video recordings of lectures, among other technologies; Donald Boudreaux's course at George Mason University was taught face-to-face, and apparently no digital or online technology was used; and Peggy Douglas's course at University of Phoenix was taught totally online.

What impact did technology have on the students' learning? Some would assume that the Phoenix students, "totally online," must have learned less. Actually, the online versus face-to-face distinction, by itself, tells us nothing about which students learned more. Thomas Russell (2001) has summarized 355 studies comparing learning outcomes from campus and distance courses. There was no significant difference in learning outcomes. (For access to the studies Russell summarized and to more research done since 2001, see www.nosignificantdifference.org.) The setting—whether "campus," "distance," or

"online"—does not directly influence what students learn. Instead, according to decades of educational research in many fields, what matters is *how* students learn—what they do—rather than where they do it.

Let me clarify what I mean by "*how* students learn": one group of students may read information on paper, another may hear the same information spoken in a room, and a third group might hear the same information from a recording. Research indicates that the learning outcomes will be the same for all three groups because, basically, all three groups are learning the same way—they are receiving the same verbal description of the content.

Even so, you may still be thinking, "*I know* students learn better face-to-face than online!" To explain why that commonsense conclusion is misleading, consider that a giant, tiered lecture hall is a learning space. So is a small, flat-floored room with chairs around a seminar table. In which room would students learn more?

I've actually lived that comparison. As a first-year student at the Massachusetts Institute of Technology in 1967, I took a "freshman seminar." That's what it was called in the catalogue. There were five of us students, and a professor, all seated around the table in his office. And at each early morning session, our professor lectured to us, nonstop, for the entire hour, just as though we had been in an auditorium. And we took notes, just as though we had been in an auditorium. (And I struggled, not always successfully, to avoid nodding off as I sat directly across the table from my professor.) I'm sure we would have learned about as much if we had been sitting in an auditorium with him lecturing. Our learning was determined by what we were doing—sitting

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George Washington University

silently and taking notes—not by where we were.

Obviously, seminar tables are not always used for lectures. In fact, seminar tables are intended to make other learning activities easier than, say, a lecture hall does. My professor could have asked one of us a tough question, and then challenged another student to critique that first answer. We students might have worked on a problem together, thinking aloud, while the professor listened and occasionally gave us a hint when we got stuck.

If you're not convinced yet that the space, even online space, doesn't determine how well students learn, let's take a look at the unexpected possibilities of the lecture hall. Eric Mazur, a Harvard physics professor, has helped many faculty realize that lecture halls can be great places for intensive conversation among students. (For a look at Mazur's approach, see <http://bit.ly/lecture-hall>). In Mazur's course, student-student debates become powerful engines for learning physics. My freshman professor used a seminar room as a lecture hall, while Mazur uses a lecture hall as though it were a seminar room. In fact, Mazur makes the

size of his class into an asset, enriching the discussion in ways that would be more difficult if there were only five students.

So the right setting can make some teaching and learning practices easier (but not inevitable) and other activities harder (but not impossible). And it's those activities, especially what the students are doing, that influence what students learn.

In each of the three institutions Berrett describes, students are learning in different settings with different technologies. But what does the article say about what students *do* differently in those three economics courses? Unfortunately, Berrett focuses mainly on what the instructor is doing and also mostly ignores what students do outside the classroom. That's important because we'd like to think that students are spending up to twice as much time on the course outside the classroom as they do inside. (For Phoenix, let's consider the time students spend in online discussions with each other and the instructor as their "class time.") So we're missing most of the information we'd need to understand the implications of the technologies and

learning spaces for learning.

However, I do notice two things about what those three groups of students are doing.

First, at Suranovic's class at George Washington University (GW) and Boudreaux's at George Mason University (GMU), concepts seem to be explained when students are together, and applied (i.e., practiced) when students are alone, doing homework. In contrast, Peggy Douglas of the University of Phoenix uses what many people call a "flipped pedagogy." While studying alone online, students are presented with new content through reading and, as Douglas explained to me by email, with videos and interactive computer simulation. Students also work on a new team project each week, working in teams of five (collaborating online). Then, while "in class" (that is, while participating in online discussions visible to the whole class) students apply their new skills and receive feedback from other students and from the instructor.

The "flipped" label is comparatively new, but the approach dates to the early days of higher education when students would read on their own, attend lectures of their choice, and then meet with a tutor for intensive discussion

The "flipped" label is comparatively new, but the approach dates to the early days of higher education

to probe and elaborate what they had learned, and receive advice on how they might proceed. There are many reasons why this approach gave way to relying on lectures as a major

way in which content is received. For example, there is the classic downward spiral: imagine that half the students in a large class come well prepared, but the other half are not ready for discussion and application. That puts pressure on faculty to abandon some of their plans for discussion and to bring everyone up to speed by lecturing instead. That, in turn, reduces the pressure on students to prepare for the next meeting: the faculty member will explain what's important. So, for the next class, even more students are unprepared.

When I was a first-year student, everyone knew lectures summarized the text so that one could easily skip class (or skim the text). In recent years, thanks to online technology, flipped pedagogy has had a renaissance (perhaps we should say that the balance has re-flipped). Online systems make it easier to introduce content to students online. Then understanding can be tested in a rudimentary way through online tests, projects, or online discussion between class sessions. Before

George Mason University



students come to class, the instructor can see what they understand already and where a new approach might be needed. So the class session can be planned to be more effective.

Dan Berrett detailed such a flipped campus course at the University of Colorado in an earlier *Chronicle* article, written in February 2012. Students “gather the information largely outside of class, by reading, watching recorded lectures, or listening to podcasts. When they are in class, students do what is typically thought to be homework, solving problems with their professors or peers, applying what they learn to new contexts. They continue this process on their own outside class.” There’s plenty of research to support a flipped approach. For example, evidence tells us that sitting through hour-long lectures is a rather inefficient way to learn. In fact, when students are beginning to practice new ways of thinking, it helps if they have plenty of interaction and coaching. That’s why adherents of flipped pedagogy use so much class time for students to practice what they’ve been learning, with faculty and peers reacting, coaching, and assessing.

It’s possible that the Phoenix students are actually getting more supervised practice in thinking like novice economists than are the students at George Mason and George Washington. The article makes it clear that the GMU students have no homework. The GW students use a learning management system, but the article does not tell us whether, online, the GW students get feedback as they practice in thinking “aloud” using economic principles.

Berrett’s “Econ 101” article also mentions a second use of technology to support learning: Suranovic’s students use online recordings to review his lectures. As I have discovered, many GW undergraduates use this Colonial Cast system to review classroom sessions they have already attended. (Ironically, some GW faculty do not use Colonial Cast because they believe that attendance in their classes would decline sharply. But surveys of students and observations of attendance at GW and other institutions show little evidence of attendance decline due to video.) Many of the students who use Colonial Cast—about a quarter of all the students in the class, typically—believe that their grades would suffer significantly if they could no longer review video of class sessions. The

larger point is that a technology like Colonial Cast gives different students the opportunity to study differently. It’s a second way in which technology may be helping GW students learn economics.

A lecture hall makes it difficult for different students to study different things at the same time—the instructor can teach only one group of students at a time. And dividing two hundred students into four groups of fifty, each discussing something different, can lead to impossible difficulties with noise. Online, however, students can be given choices among four learning methods, or even four complementary tracks of content.

Colonial Cast is not the only way in which the GW course uses technology to provide different learning pathways for different students. In an interview, Professor Suranovic told me that the GW economics course requires students to think through economics problems with algebra. But many of the entering students are weak in algebra, despite having studied it in high school. So the GW faculty begin their course with diagnostic testing of students’ algebra skills and then provide both remedial algebra sessions and a sophisticated online tutoring system in algebra for those who need it. GW research indicates that students who receive this remedial help then do quite well in learning economics.

To sum up, technologies such as learning management systems or class recordings have no direct impact on learning outcomes. But if faculty and students use them to make it easier to do something educationally powerful—activities such as flipping pedagogy or offering different kinds of instruction to different students—those activities *can* improve learning. □

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

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The Theory and Practice of Transforming Undergraduate STEM Education

Reflections from the PKAL Experience

JEANNE L. NARUM



ABOUT THIS SERIES

Intended to challenge the higher education community to think strategically about how best to advance the learning and success of all students in science, technology, engineering, and mathematics (STEM), this series of articles presents a broad array of perspectives on cutting-edge issues affecting contemporary undergraduate education in the STEM fields.

THE INITIAL SUPPORT from the National Science Foundation (NSF) for the group that became Project Kaleidoscope (PKAL) was one of a cluster of grants the foundation made in the late 1980s to lay the groundwork for reforming the nation's undergraduate science and mathematics sector. What inspired the NSF to initiate and support these groups was a recommendation from the 1986 report of the National Science Board, *Undergraduate Science, Mathematics, and Engineering Education* (the "Neal report"). This seminal report emerged in the context of growing despair of the quality of collegiate learning in science, technology, engineering, and mathematics (STEM) fields. It reflected an awareness of both the responsibilities and the opportunities for addressing a pressing national need through explicit attention to strengthening undergraduate STEM learning.

Perhaps most important, the Neal report revealed the need for a coherent plan to build an infrastructure that would enable the NSF to help shape undergraduate programs. The authors of the report recommended that the NSF gain a "sense of the community" through the effort to flesh out such a plan. Thus, the context for the work of Project Kaleidoscope was the nascent recognition that the nation's leadership role in STEM was being severely compromised by deficiencies in the educational system; that the undergraduate sector is the critical link in our educational continuum—a link that was then (and is still)

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not as strong as it should be in the service of the nation; and that there was no mutually agreed-upon plan of action for those who wished to join in the national effort to strengthen undergraduate STEM education.

In a meeting with the early PKAL leadership, Bassam Shakashiri, then assistant director for education and human resources at the NSF, expressed the challenge most pointedly, "Don't point the finger, point the way." This sentiment was also expressed during a 1989 House hearing by Representative Robert A. Roe of New Jersey, who said, "I am tired of hearing about studies and analyses of the current problems this nation faces in science and technology. We know what works. Let's stop studying the problem; let's move from analyses to action" (Project Kaleidoscope 1991, ix). We welcomed the opportunity to respond to this challenge. Focusing on the future, on what works, and on moving from analysis to action became PKAL's *modus operandi* as we undertook our commission.

Indeed, there was little need to redefine the problems. Several decades of reports had analyzed and reanalyzed them, in most cases making the case for solving them in similarly compelling language. We were well aware of these past reports, including one from a 1962 conference at Oakland University convened by the NSF with the purpose of "coming to grips with the problem of making it possible for undergraduates who are not intent on becoming professional scientists to become familiar with, unafraid of, and literally conversant with the scientific enterprise." In the context of these reflections on the work of PKAL, it is important to note that conferees



George Mason University

urged the NSF “to establish a continuing conference on science instruction for non-science students. As a widely scattered group of people concerned for orientation science courses, we feel the need of some informal organization . . . to help exchange ideas and problems, to help set standards . . . so that all students do something more than listen to lectures, look at demonstrations, study a text book, and recite a lesson. . . . They must watch a crystal grow. They must see a beating heart” (Hoopes 1963). Why was no action taken on this recommendation?

Context matters. In the mid-1960s, attention at the NSF to undergraduate science and mathematics was shaped by Sputnik-sparked reforms designed to move the best and brightest undergraduates with all deliberate speed into and through graduate school, and then into research positions in industry or academe. Science for all was not recognized as an urgent public issue. These conferees, however, had hit on two key factors in achieving meaningful change: mobilizing an informed community to take collective action, and providing support for their efforts over the long term.

These two reports—from 1986 and 1962—were among those that set the stage for the

work of PKAL. But the most helpful in grounding our work was the 1989 Sigma Xi report, one of the NSF’s post-Neal efforts to gain a sense of the community. The report zeroed in on the character and quality of introductory courses as the key point for gaining traction in efforts to change STEM education at the undergraduate level. Of more immediate value for us was the fact that the report did not address the reform of individual STEM introductory courses in isolation from reform of the institutional culture, the environment for learning.

The Sigma Xi report recognized—as did the Oakland conferees, though in a different way—the power of a collective action taken by a community, the power of a shared vision at both the institutional and the national levels: “In searching for the roots of the crisis in undergraduate education, members . . . hit repeatedly upon the theme of accessibility for students: access to instruction that generates enthusiasm and fosters long-term learning; access to a curriculum that is relevant and flexible; access to a human environment that is intellectually stimulating and emotionally supportive; and access to a physical environment that supports the other three dimensions. These crucial components are strongly

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interrelated; weakness in any one diminishes the quality of undergraduate education” (1989, 4–5). Attention to what works became the driver not only for our immediate action agenda but, ultimately, for the long-term work of PKAL as well. Early on, we recognized the power of getting the planning process right and getting the right group of people to the planning table. We were a very diverse, sometimes very opinionated, cadre of experienced agents of change. Each of us continually challenged and refined our colleagues’ statements until we agreed on a collective vision of what works.

The emergence of the PKAL vision

Anyone familiar with PKAL as it has evolved will readily see how the early reports mentioned above have influenced our work. We knew that the criticisms of collegiate learning, from within and beyond academe, were on target and that few undergraduates had easy access to what we knew worked in terms of instruction, curricular programs, and human and physical learning environments. We knew firsthand of many instances of failure. We also knew of many instances of success—in tackling the problem of the introductory course, for example, and the lack of an integrated institutional effort to ensure accessibility for all. Moreover, we knew many who were pointing the way forward—some of whom were already at the PKAL table.

Our founding group represented liberal arts institutions, which at the time were noted for their successful attention to undergraduate STEM learners. In 1991, midway through our initial eighteen-month grant period, we spent an entire weekend arguing, negotiating, celebrating, and dissolving differences of perspectives and passions. The result was the original PKAL vision of what works, which represented the distillation of our collective experience (see fig. 1).

We then began sharing and vetting ideas, identifying and defining problems that dealt with real-world issues and that mattered to us personally as STEM educators. We also began shaping persuasive language and designing forums for further sharing, vetting, adapting—all directed toward the development of broader communities of practice. The glue that held this volunteer group together was the shared recognition that the problem put forth by the NSF and in the Neal report was a problem

that mattered to us all in our day-to-day work. It was not an abstract problem to be rearticulated in yet another report.

Building from the Sigma Xi vision of an institution-wide approach, we adopted the kaleidoscopic metaphor of change to signal that, although the patterns of reform will differ from campus to campus, there must be community-wide attention to how all the pieces fit together. In the early months of working together, we returned again and again to distilling a vision from our common experiences and individual expertise. In hindsight, it’s clear that we were beginning to discover how learning communities of STEM change agents emerge and evolve through the practices that became the story line through two decades of PKAL reports, workshops, and other activities: assemble a team representing the diverse top-down and bottom-up constituencies that can imagine and realize meaningful

Figure 1.
THE PKAL VISION STATEMENT (1991)

The most important attribute of undergraduate programs that attract and sustain student interest in science and mathematics is a thriving community of students and faculty. Such natural science communities offer students a learning environment that is demonstrably effective, where

- learning is experiential, investigative, hands-on, and steeped in investigation from the very first courses for all students through capstone courses for majors;
- learning is personally meaningful to students and faculty, makes connections to other fields of inquiry, is embedded in the context of its own history and rationale, and suggests practical applications related to the experience of students;
- learning takes place in a community where faculty are committed equally to undergraduate teaching and to their own intellectual vitality, where faculty see students as partners in learning, where students collaborate with one another and gain confidence that they can succeed, and where institutions support such communities of learners.

Programs organized around these guiding principles motivate students and give them the skills and confidence to succeed. Thus empowered, students learn science and mathematics.

We adopted the kaleidoscopic metaphor of change to signal that, although the patterns of reform will differ from campus to campus, there must be community-wide attention to how all the pieces fit together

change—including those already recognized as outliers; take the time to argue through to a common vision, learning from and adapting the work of others; move intentionally from analysis to action; and keep seeking “lessons learned” that can advance further action.

One strength of the PKAL vision of what works is that it was a collective vision. Another is that it focused on the community of learners. This vision, which reflected the sense of the community assembled to respond to Shakashiri’s 1989 charge (“don’t point the finger, point the way”) became the skeleton of the 1991 report submitted to the NSF and presented to a broader community of stakeholders gathered at the National Academy of Sciences—the first national PKAL colloquium and, perhaps, the first formal gathering of a national STEM learning community. The serviceability of the vision for driving meaningful change was reinforced again and again in subsequent workshops, seminars, and other meetings convened by PKAL and a host of collaborating partners.

Leadership development

The early PKAL leaders clearly recognized the cyclical nature of change: new initiatives start, have an impact, and then, after the pioneers turn to something new, the innovations often fade away, only to be reinvented by following generations. We also recognized the value of the ideas about STEM learning that were beginning to percolate out from the growing community of change agents. It seemed important to build an infrastructure—intellectual and social—through which these ideas could be captured, shared, vetted, and adapted. Thus, with initial funding from the ExxonMobil Foundation, PKAL Faculty for the 21st Century (F21) was established as a practitioner network to help ensure that the best ideas, promising practices, and lessons learned were never lost, but would instead continue to influence the work of leaders over the long term.

Senior campus administrators nominated early-career faculty for the F21 community who demonstrated promise for leadership at the local level, within the broader communities to which their college or university were connected, or within their communities of practice. This meant that there were campus-level expectations of what F21 members were to become and be able to do. F21 was not

merely another isolated professional experience that would have no ripple effect among colleagues on their home campuses or beyond.

In the F21 context, we identified mentors as “village elders,” respecting anthropologists’ insights into how communities are sustained over the long term through the intentionality of village elders who pass their wisdom about the nature and culture of the community to coming generations of leaders. This put an important “spin” on the concept of mentoring, emphasizing the importance of nurturing leaders. The charge to our village elders was, in some ways, the standard charge to mentors: listen, counsel, and push people to think about the future. At the edges of this mentoring were issues of immediate import to early career faculty: setting up a lab, advising students, working with yet unknown departmental colleagues.

But at the heart of the mentoring work of the F21 village elders was modeling the variety of ways one can make a difference, which was central to our definition of leadership. So it became a community of experienced and early-career faculty addressing both the theory and the practice of leadership. Together, we explored questions such as how you know yourself, how to connect learning about leadership skills with the actual practice of those skills, and what to do when you fail. In juxtaposing theoretical and practical discussions about leadership in this mentoring process, we sought to develop a learning environment for early-career STEM faculty that was based



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Learning is deeper and more readily transferable when it is relevant or connected in some meaningful way to the real world of the learner

on best practices in developing such environments for their STEM students. That is, we recognized that learning is deeper and more readily transferable when it is relevant or connected in some meaningful way to the real world of the learner.

In addition to F21 assemblies and web-based resources, with NSF support PKAL sponsored a series of five-day summer leadership institutes (“boot camps”) in which village elders and mentees went through a rigorous schedule dealing with three kinds of leadership issues: big-picture (the societal, academic, and scientific context for the work of twenty-first-century STEM leaders; political (the politics of leadership—top down, grassroots); and personal (the value of self-reflection, openness to risk taking and failure).

Our initial cadre of village elders was comprised of faculty who were nationally recognized for their impact on undergraduate STEM education and who were ready and willing to give back. The typical response to our invitation was, “Of course, I want to do this,” because of people they had met along the way who had made a difference in their lives—their own personal village elders. By 1995, the second year of the F21 assemblies, F21 individuals began mentoring each other across disciplinary lines. They were relishing the opportunity—for many the first opportunity—to share ideas and ask questions that took them out of existing disciplinary silos and into the future. Emphasizing the importance of self-reflection for meaningful leadership, we periodically invited F21 members to share their reflections on the future. Collectively, these reflections shaped future PKAL activities.

In early 2004, a cadre of PKAL leaders convened at Bryn Mawr College to explore a more comprehensive and intentional focus on leadership development within the broad portfolio of PKAL initiatives. Those assembled—including a significant number of F21 members—had been invited in anticipation of a new submission to the NSF. We examined lessons learned from the experiences of those around the table, as well as from leaders and participants in ongoing PKAL activities. The convening was rooted in the fundamental recognition that making all voices heard was key to arriving at a shared vision for the work of PKAL, as it is key for arriving at a shared vision of the future at the institutional level.

About Project Kaleidoscope

Since its founding in 1989, Project Kaleidoscope (PKAL) has been a leading advocate for building and sustaining strong undergraduate programs in the fields of science, technology, engineering, and mathematics (STEM). With an extensive network of over seven thousand faculty members and administrators at over one thousand colleges, universities, and organizations, PKAL has developed far-reaching influence in shaping undergraduate STEM learning environments that attract and retain undergraduate students. PKAL accomplishes its work by engaging campus faculty and leaders in funded projects, national and regional meetings, community-building activities, leadership development programs, and publications that are focused on advancing what works in STEM education.

In 2008, the Association of American Colleges and Universities (AAC&U) and PKAL announced a partnership to align and advance the work of both organizations in fostering meaningful twenty-first-century liberal education experiences for all undergraduate students, across all disciplines. This partnership represents a natural progression, as nearly 75 percent of campuses with PKAL community members are also AAC&U member institutions. Together, AAC&U and PKAL apply their collective expertise in undergraduate learning, assessment, leadership, and institutional change to accelerate the pace and reach of STEM transformation.

For more information, visit www.aacu.org/pkal.

The series of workshops subsequently funded by the NSF focused on the four key needs identified by the planning group: to respond to an increasingly interdisciplinary world, to nurture science-savvy citizens, to shape technology-rich learning environments, and to equip the next generation of STEM professionals.

Lessons learned

In conclusion, following are some final lessons learned from PKAL’s work about building community.

The power of questions. With a reputation for asking probing questions, leaders can set expectations for the work of the community—within the grassroots and from the top down. One of the skills that are often overlooked at the beginning of a reform effort is the ability to ask questions that are probing and meaningful, but not threatening or accusatory. A person can lead by the questions he or she asks

toward establishing the expectations of others. Questioning can also be a process that leads to the involvement of others, becoming a form of communication that is more shared than a simple set of declarative sentences.

The pace of reform. Step-by-step broadening of the support base for change can be accomplished by involving more and more people in the discussion as the various perspectives on change are determined. Therefore, the pace of that broadening is critical. If it happens too fast, people don't see their perspective as being part of the effort. If it happens too slowly, the momentum is lost. Each organization and set of issues has its proper pace; find it, and change succeeds. Miss the pace and face more problems without any improvements.

Champions and cheerleaders. Champions are necessary to get innovations off the ground. Cheerleaders and champions are not the same. Champions know where the resources are and how to secure and use them; they know where and how to lend support. Cheerleaders can be great motivators, but they may not have access to resources.

Political and personal agendas. When working through the enormously complicated challenges of specific institutional reforms, the political is not personal. Sometimes so-called political stances have deep roots in interests, commitments to existing programs, and principles that are different from one's own. To convert legitimate differences into personal differences erodes civility and collegiality. It is important to look for and acknowledge the specific agendas and concerns that people bring to the table when discussing potential new directions.

Budgets. Strategic planning must be aligned with budgetary planning. Planning to implement a vision requires attention to both vision and budget at the same time.

Leadership. It is important to understand what role you would like to play, and could best play, in the process of change. Becoming a leader does not necessarily mean that one has to be out in front banging the drum. Further, realizing the value of listening gives one the opportunity to step back and understand what is going on before proposing personal solutions to the task at hand.

The nature of change. Change is not sustainable unless and until it is seen as advancing

the work and goals of the vast majority of stakeholders. (Doing no harm is not sufficient.) Further, the future benefits of the new initiative must manifestly justify the reallocation of existing and future resources. Basically, the change has to be, or become, what everyone wanted to do anyway, even if they didn't know it at first.

To institutionalize change in a sustainable manner, there needs to be systemic change at many different levels. Change begins at the student-teacher interface, but it has to be nurtured by leadership at the departmental and institutional levels, and then encouraged by larger policy structures. If any of the linked components fails, the sustainability can be rapidly attenuated.

Revitalizing undergraduate STEM education is a complex problem. To paraphrase H. L. Mencken, for every complex problem, there is an answer that is clear, simple, and wrong. While institutions, both local and national, have a role to play, changes that "stick" are carried out in reality by academic departments, energized by faculty leadership and collegiality, in a complex interplay that recognizes and understands local missions and local constraints, while keeping an eye on high standards set by the national STEM community. □

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

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TONY BLAIR AND CRAIG BARDSLEY

Faith & Globalization

The Faith and Globalization Initiative

By Tony Blair

Introduction

When I left office, I established the Tony Blair Faith Foundation because I was convinced that conflict between people of different faiths was one of the greatest threats to peace and prosperity in the twenty-first century. I wanted to create an organization that would work with people of all faiths and none to ensure religion played a positive role in the

world—one that promoted respect and understanding in a world where religious illiteracy is simply not an option.

I believe that no one today aspiring to lead a country, company, or civic organization should be without a developed understanding of religion and its role in our different societies. That is why one of my first activities for the foundation was to teach a course on faith and globalization at Yale University—to encourage the leaders of tomorrow to understand the role faith can and should play in the modern world. That course has since been expanded into the Faith and Globalization Initiative, a network of more than a dozen universities across the world. The issues addressed by the initiative go to the very heart of what my foundation is about and, in the future, will become ever more central to how it works.

Two ideas form the basis of the Faith Foundation's work. The first is that the best way to combat religious extremism and the divisiveness that religion can sometimes bring is to create safe, open platforms for people to talk to

each other and work together. The second is that, as I have already mentioned, it is not possible to understand the world in the twenty-first century without an understanding of the role of religion. Almost everywhere you look, religion is a powerful, motivating, determining force shaping the world around us.

If we accept that faith matters in a globalized world, it follows that we must account for faith as we work to meet the challenges of globalization. This does not only apply to those challenges where religion is directly involved, such as countering religious extremism and protecting the rights of religious minorities. It may also apply to a whole range of global challenges: poverty, public health, economic development, and climate change. If religion is part of the problem, then logic dictates it must be part of the solution. Even if it is not part of the problem, it can still play an important role in addressing key issues. Faith motivates people to take action, and where we do not understand the role of faith in societies around the globe, it can be an obstacle to progress and development.

Our work in Sierra Leone illustrates this dramatically. By training just a few hundred religious leaders—both Christian and Muslim—who, in turn, train members of their congregations, we have educated more than 130,000 households, or roughly 830,000 individuals, in how to use anti-malarial bed nets. By engaging with the existing social structure of religious organizations, we can be far more effective than if we start from scratch.

Aims of the initiative

The clear importance of religion in today's globalized world goes against the grain of what had been the prevailing thinking in Western academia, and much of wider European society, for the latter half of the twentieth century. As science inexorably advanced, religion would wither and fade away—or so

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Through the Faith and Globalization Initiative, students around the world have an opportunity to learn more about religion's complex relationship with the forces of globalization

The Challenge for Higher Education



Tony Blair, Yale University

THE TONY BLAIR FAITH FOUNDATION

The Tony Blair Faith Foundation aims to promote respect and understanding about the world's major religions and show how faith is a powerful force for good in the modern world. Additional information is available online at www.tonyblairfaithfoundationus.org.

the story went. This has not happened. The reason, to me at least, is obvious. At its core, religion is not an alternative to science as a method for understanding and explaining the natural world. Instead, faith can provide a structure to a person's life, values to guide their actions and aspirations, and ideals that endow their existence with meaning and purpose.

Furthermore, the tradition in many democracies has been to view religion as a private matter, separate from the public sphere. There was a very good reason for this: to preserve religious freedom, it is important that government does not privilege one set of religious beliefs over another. The easiest way to do this is to exclude religion from the public sphere. You can separate church and state, but you cannot separate faith and citizenship.

Globalization renders the separation of faith and citizenship increasingly untenable, as it brings people from different cultures and traditions closer together as individuals. The neat hierarchy where individuals had relations with their governments and national governments had relations with each other has evaporated. Our individual lives are increasingly affected by events in distant parts of the world. We interact much more intensively with societies that have different perceptions of the relationship between religion and wider public life.

We therefore need a new model to reconcile religion and the public sphere. Religion is not going away, and knowledge and education are the best tools we have to ensure religion plays a positive role in the twenty-first century. Students, the leaders of tomorrow, must be equipped with the knowledge and skills to make effective decisions in a complex, multi-faith world, and they must be comfortable working with people of diverse backgrounds.

This is the context in which the Faith and Globalization Initiative has developed. It has grown to a network of more than a dozen universities across the world, including McGill University in Canada, Monterrey Tech in Mexico, King's College London, National University of Singapore, Peking University, University of Hong Kong, University of Western Australia, Fourah Bay College in Sierra Leone, the American University in Kosovo, and Pristina University, also in Kosovo. We have also

You can separate church and state, but you cannot separate faith and citizenship

begun work with a network of four universities in the Philippines—three of which are in Mindanao, which suffered from religious conflict for decades. And in autumn 2012, we signed agreements with an Indian university, Banaras Hindu, as well as Kyiv Mohyla Academy in Ukraine.

It's a diverse group of partners, situated within a wide range of different faith and non-faith traditions. It includes several of the world's highest-ranked universities, alongside the leading institutions in developing and middle-income countries. Several of the partner institutions are in areas with long and difficult histories of religious conflict. We believe this diversity is one of the most important characteristics of the network, and are confident that all the participating institutions will gain a great deal from it.

I am excited that, through the Faith and Globalization Initiative, students around the world have an opportunity to learn more about religion's complex relationship with the forces of globalization.

The Structure of the Initiative

By Craig Bardsley

Teaching

The core element of the Faith and Globalization Initiative is a course, taught at the undergraduate or postgraduate level, that provides students with a background in the world's religions and explores the myriad ways in which these traditions interact with the political, social, and economic processes of globalization. While individual universities design their own syllabi, we provide suggestions based on what has worked elsewhere. The only requirement is that the course be strongly interdisciplinary. As the initiative develops, our partner universities are examining issues of faith and globalization from an increasing variety of perspectives—theology, anthropology, political science, economics, and legal studies, to name a few. The courses resonate strongly with many of the students, who, long after their course is completed, continue to discuss and seek to be involved with the issues it raises.

The Tony Blair Faith Foundation is a small organization, and in all our programs the ambition is to develop and demonstrate the



Tony Blair,
Yale University

success of models that can then be taken up by more mainstream actors. So it is that we hope the Faith and Globalization Initiative will provide a model for higher education institutions around the world to reintegrate an understanding of the role of religion in society as a core dimension of a well-rounded liberal arts education. Our Associate Universities program provides universities beyond the core network with pedagogical tools to incorporate the teaching of faith and globalization into their own curricula.

Universities are not only ideal platforms from which to study and debate processes of globalization; they are also key actors driving globalization forward. Academia has long been at the forefront of the globalization process. The Royal Society is extremely proud of appointing a foreign secretary before the British government. During the Cold War, science was one of the few domains where cooperation between the West and the Soviet Union could take place. Today, thousands upon thousands of Chinese students enroll in American and European universities each year. Many Western universities are establishing “branch campuses” across the world.

With the Faith and Globalization Initiative, we are developing a model for working globally in research and higher education that is broader and deeper than collaboration around a single research project or center, but

far less complex and resource intensive than setting up branch campuses. Our aim is to create a program that is sizeable enough to make a significant impact in the world, but with the flexibility required by the rapid pace of change that globalization brings.

The Faith and Globalization Initiative does not fit a standard model for charitable organizations that work with the university sector. It is not, to any significant degree, a funding agency, like the Wellcome Trust or the Bill and Melinda Gates Foundation. Rather, we are a facilitating partner that aims to support our university partners in order to achieve our shared goals in teaching and research as well as in informing policy and engaging the broader public. In developing the Faith and Globalization Initiative, not only are we pursuing a novel and exciting intellectual agenda, but we are also pioneering a new way of working in partnership between the non-profit sector and the research and higher education sector worldwide.

During its first few years, the Faith and Globalization Initiative was focused on expanding its network of universities in order to achieve a truly global footprint. This has largely been achieved. The foundation is now focused on strengthening the interaction between universities and ensuring that the students and faculty involved are participating in a truly global dialogue.

Last summer, we worked with McGill University to host a summer school program on human rights and religious minorities. Nineteen students from six universities participated in the program, with guest lecturers from across the network and beyond. The discussions that resulted from bringing so many cultural and disciplinary perspectives to bear on these issues proved memorable for students and faculty alike. This year, we will be working to embed this interaction further into the core provisioning of the course, by promoting an online community of students across the network and exploring methods for joint work between students at different institutions.

The impact of faith upon people's attitudes and behavior needs to be accounted for more strongly and systematically across the full range of social sciences and humanities disciplines

But it is not only the next generation that requires grounding in issues of faith and globalization. The skills to understand the complex role of religion in today's globalized world are urgently needed by today's professionals as well. This is why a major effort of the Faith and Globalization Initiative over the next year will be focused on professional training. Working with our partner universities, we intend to develop a comprehensive training program that will lead to professional certification. This program will include short online tutorials that can be completed in a few hours, intensive residential courses, and long-term courses of distance learning that will take a year or two to complete.



Fourah Bay College,
Sierra Leone

The initial targets of this work will be diplomatic personnel, but we would hope to expand it in the future to include executive education and training for staff of nongovernmental organizations.

Research

Teaching is but one aspect of the Faith and Globalization Initiative, and in the months and years ahead we will be substantially strengthening the research dimension of the initiative. The impact of faith upon people's attitudes and behavior needs to be accounted for more strongly and systematically across the full range of social sciences and humanities disciplines, and Faith and Globalization will provide a platform for this work.

In all but the broadest sense, the foundation will not set the research agenda, but will instead facilitate the interaction of researchers across the network in order to engage a range of problems related to faith and globalization. It will support universities as they tackle these problems from a variety of different disciplinary approaches. Most importantly, the foundation will work with its university partners to ensure that the results of their research reach the ears of policy makers. Academics are experts in research and teaching, and it is a lot to ask in many cases for them also to be experts at engaging with the complex world of policy. This is exactly where the Faith and Globalization Initiative can provide vital support. As universities around the world are striving to increase their levels of international collaboration and ensure their research activities achieve wider societal impact, these arrangements will be mutually beneficial.

We hope that the research dimension of the Faith and Globalization Initiative will evolve into a core driving force that underpins the work of the foundation as a whole. Our high school program, Face to Faith, provides tools for teaching the understanding of religious diversity and brings students from around the world together, through videoconferences, to share their viewpoints directly. The program operates in hundreds of schools in over nineteen countries, and we have signed agreements with four national governments to mainstream it into their national curricula. There is potentially a wealth of data here that could be used to inform understanding of how educational experiences change attitudes



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in diverse settings. We intend to work with our universities both to improve the design of the programs and to gain insight into how young people's attitudes to religion and diversity are formed.

Likewise, as our intervention program, Faiths Act, expands beyond Sierra Leone to tackle a broader range of issues, there are significant opportunities for university research to analyze the impact of these programs. Our universities will be able to collect data and monitor the implementation of our development and conflict resolution projects, thereby improving our understanding of the forces that underlie them. In turn, the outcomes of this research will enable us to improve the design of future projects on the ground.

Conclusion

Globalization continues to transform how universities work: the students and subjects they teach, and the way they conduct and disseminate research. With tight budgets everywhere in the wake of the global economic downturn, universities are under increasing pressure to demonstrate value for money to the wider public from their research and teaching. The Faith and Globalization Initiative is embracing these challenges and, through them, is pursuing new opportunities to contribute to a more peaceful and prosperous global future. □

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

ROBERT D. REASON

Creating and Assessing Campus Climates that Support

PERSPECTIVES

OVER THE PAST CENTURY, there have been several calls to infuse education for personal and social responsibility into the core of higher education. As early as 1937, and again in 1949, for example, professionals from the American Council on Education gathered to discuss the central tenets of higher education in the United States. Both groups of educators concluded that “the central purpose of higher education is the preservation, transmittal, and enrichment of culture by means of instruction, scholarly work, and scientific research” (ACE 1983, 17), but the document that emerged from the 1949 meeting suggested broadening the purpose of

higher education to embrace several additional emphases and objectives. Among these new goals, which were adapted from the 1947 report of the President’s Commission on Higher Education (the “Truman Commission”), three stand out:

Both meetings produced documents that called on higher education to build campus environments that support individual students, while holding students accountable for their personal behaviors and for how those behaviors affect the larger community. In particular, the 1949 document stressed the importance of engaging with communities outside of the college campus. These early documents articulated the importance of educating students for both personal responsibility and social responsibility.

- education for a fuller realization of democracy in every phase of living
- education directly and explicitly for international understanding and cooperation
- education for the application of creative imagination and trained intelligence to the solution of social problems and the administration of public affairs

Contemporary higher education has seen a renewed call to focus greater attention on civic

education, personal and social responsibility, and education for democracy. This renewed call suggests that, once again, many believe the purpose of higher education must be broadened to include these outcomes. Carol Geary Schneider, president of the Association of American Colleges and Universities (AAC&U), recently concluded that “civic learning remains optional within the curriculum” and that “democracy in any form is rarely part of the core curriculum” of higher education (2012, 3). Similarly, Caryn McTighe Musil (2012, 71) has recommended that higher education

- reclaim and reinvest in the fundamental civic and democratic mission . . . of all sectors within higher education;
- advance a contemporary, comprehensive framework for civic learning;
- enlarge the current national narrative that erases civic aims and civic literacy as national priorities;
- capitalize upon the interdependent responsibilities of K-12 and higher education to foster progressively higher levels of civic knowledge, skills, examined values, and action;
- expand the number of robust, generative civic partnerships and alliances locally, nationally, and globally to address common problems.

The National Task Force on Civic Learning and Democratic Engagement (2012) has issued similar recommendations.

The pressure to attend to new objectives in higher education, such as the current pressure to attend to the development of students’ personal and social responsibility, encourages the search for a panacea, a single intervention that, if applied correctly, will lead to widespread student development and learning. The lure of the panacea is certainly strong, particularly in an era of decreasing support and increasing calls for accountability in higher education. This approach is, however, ineffective. Even in an era of decreased resources and increased accountability, a comprehensive

The existing research strongly suggests that campus climate can support or impede student outcomes

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Personal and Social Responsibility



Iowa State University

approach to encouraging the development of personal and social responsibility is needed.

In this article, I define personal and social responsibility as a five-component outcome of college; present a case for thinking about educating for personal and social responsibility through the lens of campus climate that eschews the hunt for a single intervention and encourages the marshaling of multiple resources in multiple campus settings to encourage student learning; and highlight one instrument that can be used to assess the campus climate for personal and social responsibility—highlighting findings from pilot tests that suggest a need for campuses to focus more directly on personal and social responsibility.

Defining personal and social responsibility

In 2006, AAC&U launched Core Commitments, a initiative focused on higher education's role

in encouraging the development of personal and social responsibility among students. Early in the initiative, after conducting an extensive literature review and consulting with nationally recognized experts in higher education and psychology, Lee Knefelkamp and Richard Hersh, with research assistance from Lauren Ruff, identified five dimensions of personal and social responsibility (see fig.1, page 33). The comprehensive understanding of personal and social responsibility identified through the five dimensions offers both challenges and opportunities to those within higher education who hope to encourage student learning and development in these areas. Personal and social responsibility is not a single outcome, but rather a set of related outcomes within the framework of the five dimensions. Identifying comprehensive and measureable outcomes for each of the five

dimensions and developing appropriate instruments for assessing them presents a Herculean task.

The search for effective outcome measures is now underway, but could take some time. In collaboration with AAC&U's Valid Assessment of Learning in Undergraduate Education (VALUE) project, the Core Commitments initiative worked to further define the constituent parts of personal and social responsibility and to assist the development of rubrics for assessment. The VALUE rubrics for civic knowledge and engagement, intercultural knowledge and competence, and ethical reasoning are each directly related to a dimension of personal and social responsibility. (The VALUE rubrics are available online at www.aacu.org/VALUE/rubrics.) Certainly, other student learning outcomes also fall within the five dimensions, and these outcomes can be assessed through the use of other instruments.



Iowa State University

Importantly, too, the Core Commitments staff recognized the urgent need for an instrument that could be used to assess campus climate and the level of support for student development along each dimension of personal and social responsibility. This recognition resulted in the development of the Personal and Social Responsibility Inventory (PSRI). The PSRI was developed by Knefelkamp and Hersh and refined by Eric Dey and his associates at the University of Michigan. Following an initial administration on twenty-three college campuses, and as a result of the untimely death of Dey in 2009, I then refined the PSRI further. Currently, the PSRI is offered through and administered by the School of Education at Iowa State University

It has been difficult to agree upon a common definition of campus climate

(see www.psri.hs.iastate.edu). The PSRI is administered each year in the spring semester to students, faculty, student affairs staff, and academic administrators. Participating institutions receive reports of individual items and factor scores for the institution, comparisons with national data, and campus-specific datasets that allow for campus-level investigations.

The importance of campus climate

In 1998, after synthesizing three decades worth of research on college student learning and development, Ernest Pascarella and Patrick Terenzini warned educators against the hunt for any single intervention intended to educate all students effectively. Projecting ahead about issues of studying student outcomes in the twenty-first century, Pascarella and Terenzini suggested that the changing nature of higher education, particularly the rapidly changing demographic characteristics of the undergraduate student population, make the search for panaceas futile. Even the best interventions fall short of the lofty goals of higher education and are usually not transferable between institutions. This may be especially true for interventions meant to influence such complex constructs as personal and social responsibility. Research suggests, however, that a powerful alternative to the search for a silver-bullet solution is the creation of comprehensive and pervasive educational environments that provide students with multiple opportunities to engage in learning and developmental activities.

We know that, in general, student learning happens when students' engagement with new experiences is reinforced by supportive campus environments composed of peers and higher education professionals, and when it is encouraged by institutional policies aimed at both the curricular and cocurricular levels (Pascarella and Terenzini 2005; Terenzini and Reason 2012). The individual student's experiences account for the vast majority of learning, but these experiences are encouraged or discouraged by peers, faculty members, and institutional policies that make up the overall campus climate for learning. In line with this empirically based understanding, the guiding philosophy of AAC&U's Core Commitments initiative focused on the pervasiveness of

teaching and learning for personal and social responsibility; that is, the initiative sought to help institutions create campus climates that support the development of personal and social responsibility among students.

Defining campus climate

Although it has long been understood that the campus climate can have profound effects on all members of the campus community, it has been difficult to agree upon a common definition of campus climate. Climate has been defined in various ways throughout the literature on higher education; these disparate understandings, however, share several characteristics. Most importantly, perhaps, is the common understanding that “climate” is multifaceted, includes people’s attitudes and behaviors, and is more malleable than culture. Further, climate interacts with organizational policies and practices. In fact, for some authors (e.g., Petersen and Spencer 1990), organizational climate flows directly from, and is dictated by, the institutional policies and practices.

Petersen and Spencer suggest that an institution’s climate has three dimensions: objective, perceived, and psychological. The objective dimension is made up of observable behaviors. The perceived dimension is comprised of the “cognitive images” of members regarding the organization. The authors cite such things as organizational members’ perceptions of policy making, governance, and goals as examples of the perceived dimensions of climate. Finally, Petersen and Spencer define the psychological dimension of organizational climate as members’ feelings about their organization, drawing a nuanced distinction between perceived and psychological elements of climate. The authors provide a succinct definition of climate as “current common patterns of important dimensions of organizational life or its members’ perceptions of and attitudes toward those dimensions” (1990, 7).

Petersen and Spencer’s definition of organizational climate provides guidance for those who endeavor to assess and refine campus climates. At a minimum, campus climate assessments must take into account the perspectives of multiple constituencies on a campus, including faculty members, academic and student affairs administrators, and students. Climate assessments should also include items related to campus policies and practices

as well as items related to the behaviors of individual community members. Items on climate assessments must be written in ways that solicit information about perceptions and feelings along with more objective measures of behaviors.

The educational potential of campus climates

Although there is little empirical evidence to connect campus climate directly to students’ learning and developmental outcomes—or, more specifically, to the development of personal and social responsibility—the existing research strongly suggests that campus climate can support or impede student outcomes. Negative campus climates—those described as “chilly” or perceived to be discriminatory, for example—have been linked to decreased likelihood of persistence among students of color and white students alike (Pascarella and Terenzini 2005) and decreased scholarly productivity among faculty members (Seifert and Umbach 2008).

According to George Kuh and his colleagues (2005), who studied institutions that were highly effective in supporting student success, a shared campus climate can be educationally powerful. The institutions in Kuh’s study acted on deeply held, and widely shared, commitments to student success. This underlying commitment to student success is likely reflected in wide-ranging and mutually reinforcing policies and programs aligned with the prevailing conclusions of the research literature. It is through the adoption of complimentary policies and practices that an institution encourages student behaviors that make a positive contribution to their achievement of learning outcomes.

The influence of climate on personal and social responsibility

Research emerging from the work of the Core Commitments initiative, specifically the Personal and Social Responsibility Inventory, suggests that similar relationships exist between the perception of campus climate and the development of personal and social responsibility among college students. Nancy O’Neill (2012) provides an extensive descriptive overview of students’ development of specific learning outcomes within each of the five dimensions of personal and social responsibility measured by the PSRI. Her report

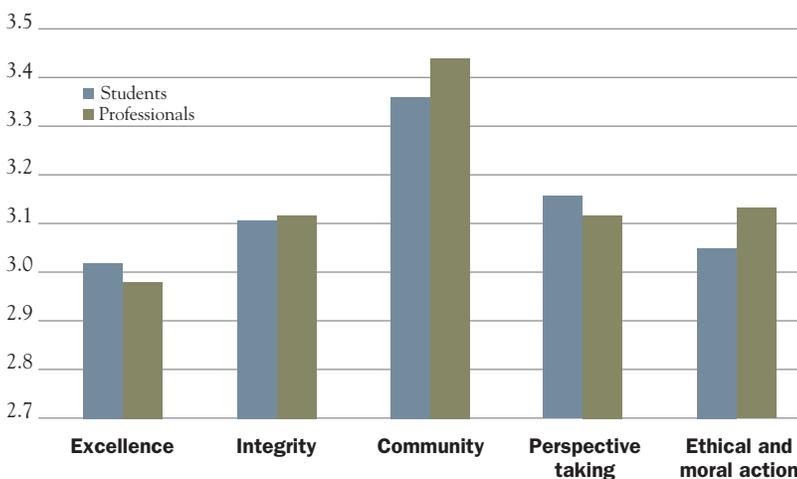
Figure 1.
THE FIVE DIMENSIONS OF PERSONAL AND SOCIAL RESPONSIBILITY

1. *Striving for excellence:* Developing a strong work ethic and consciously doing one’s very best in all aspects of college
2. *Cultivating academic integrity:* Recognizing and acting on a sense of honor, ranging from honesty, fairness, and respect for others and their work to engaging with a formal academic honor code
3. *Contributing to a larger community:* Recognizing and acting on one’s responsibility to the educational community and the wider society, locally, nationally, and globally
4. *Taking seriously the perspectives of others:* Recognizing and acting on the obligation to inform one’s own judgment; engaging diverse and competing perspectives as a resource for learning, citizenship, and work
5. *Developing competence in ethical and moral reasoning and action:* Developing ethical and moral reasoning in ways that incorporate the other four dimensions; using such reasoning in learning and in life

Figure 2.
FACTOR SCALES WITHIN
THE FIVE DIMENSIONS

1. *Striving for excellence*
 - Overall climate for excellence
 - Motivation to develop a strong work ethic
 - Communicating expectations about excellence
 - Developing a strong work ethic
2. *Cultivating academic integrity*
 - General climate for academic integrity
 - Faculty roles in academic integrity
 - Developing academic integrity
3. *Contributing to a larger community*
 - General climate for contributing to a larger community
 - Advocating for contributing to a larger community
 - Developing a commitment to contributing to a larger community
4. *Taking seriously the perspectives of others*
 - General climate for perspective taking
 - Advocating for perspective taking
 - Developing perspective taking
5. *Developing competence in ethical and moral reasoning and action*
 - General climate for ethical and moral reasoning
 - Sources of support for ethical and moral reasoning
 - Developing ethical and moral reasoning

Figure 3. RATINGS OF GENERAL CLIMATE FOR EACH DIMENSION



Scale: 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree

paints a generally positive picture of learning for personal and social responsibility on college and university campuses, but as one would expect, the responses to individual items are difficult to interpret because they are a result of individual student behaviors.

In order more fully to understand the relationship between campus climate and student development along the dimensions of personal and social responsibility, PSRI researchers created scales of items related both to the general climate for each dimension and to students' assessment of their own development along each dimension. Figure 2 provides an overview of all the factor scales within each PSRI dimension. Figure 3 provides an overview of the student and professional assessment of the general climate for each of the five dimensions assessed through the PSRI. Arrayed as such, the obvious conclusion is that both students and campus professionals believe the climate for developing personal and social responsibility is positive.

More importantly for this discussion, the strength of the relationships between each dimension's general climate measure and students' self-assessment of development along that dimension is positive and strong. Even after controlling for students' assessment of their own precollege development within a dimension, the analysis shows a direct and significant relationship between climate and student development within each dimension.

Regression coefficients for the climate measures, after controlling for entry-level development, ranged from 0.22 to 0.75 (see table 1). The relationships between the "social responsibility" dimensions (contributing to the larger community, taking seriously the perspectives of others, and ethical and moral decision making and action) were the most powerful. These socially oriented outcomes were more influenced by campus climate than were the more personally oriented outcomes of striving for excellence and developing personal and academic integrity, although the relationship between personal outcomes and campus climate was still significant.

Conclusion and implications

Early research using data collected from the PSRI demonstrates that perceptions of campus climate are related to student learning

Table 1.
RELATIONSHIP BETWEEN CAMPUS CLIMATE AND STUDENTS' DEVELOPMENT IN EACH DIMENSION

Dimension	Standardized regression coefficient*
<i>Striving for excellence</i>	
Precollege control	0.221
Climate for excellence	0.251
<i>Cultivating academic integrity</i>	
Precollege control	-0.052
Climate for integrity	0.221
<i>Contributing to a larger community</i>	
Precollege control	0.199
Climate for Contributing	0.329
<i>Taking seriously the perspectives of others</i>	
Precollege control	0.067
Climate for perspective taking	0.419
<i>Developing competence in ethical and moral reasoning and action</i>	
Precollege control	0.018
Climate for ethics	0.754

*All coefficients are significant at the $p < 0.001$ level.

and development. Previous research on other student learning outcomes had suggested such a relationship, but the PSRI has allowed researchers to confirm it. The more a college or university can do to create a campus climate that supports students in the development of personal and social responsibility, the more the institution can expect students to develop along these dimensions.

Understood within the larger body of research on student outcomes, these initial findings suggest that, rather than engage in a futile search for a single “best practice” intervention, institutional administrators should take a comprehensive approach to educating for personal and social responsibility. Creating a supportive climate requires that institutional policies and practices be aligned with faculty and administrative cultures in order to influence student behaviors. It is highly unlikely that any single intervention could influence all the necessary components of campus climate as well as an intentional, comprehensive set of interventions can.

The renewed call for incorporating personal and social responsibility into the core mission of higher education is not likely to be silenced any time soon. Even with external pressure for greater accountability and with fewer resources, higher education institutions must attend to the development of civic-minded students who can work cooperatively

and with integrity to solve community-based problems. An intentional focus on students' development of personal and social responsibility must become part of the core mission of colleges and universities; creating supportive campus climates is a first step in reinvigorating the civic mission of higher education. □

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

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CHAD HANSON AND PATRICK AMELOTTE

Cracking Open the Lessons from a Community College

P E R S P E C T I V E S

A group of fifteen faculty and two staff members embarked on a journey to assess, discuss, and ultimately recreate the liberal arts core within our curriculum

COMMUNITY COLLEGES comprise the largest single sector of the US higher education network. Forty percent of undergraduates attend one of our two-year schools. Some estimates suggest that, since the turnover is quicker than on four-year campuses, two-thirds of the students who attend a college at all attend a community college. For many of those students, open-access institutions are where they are exposed to the liberal arts: science, composition, mathematics, the humanities, and so forth. Yet, general education in the two-year school receives scant attention in scholarly publications, and even less in the popular media.

Lately, however, the liberal arts have been receiving attention on the Casper College campus. In the fall of 2009, we created a committee charged with evaluating and changing the school's general education program. We will not speculate about the motivation for the wholesale reassessment, but we will cite a common local assumption: the curriculum ought to change with the times. We realize that assumption is arguable, but our program had been in place for three decades, and the college administration had been talking about "cracking open" general education for at least five of those years. Thus, a group of fifteen faculty and two staff members embarked on a journey to assess, discuss, and ultimately recreate the liberal arts core within our curriculum.

As of this writing, the group is midway through its third year of deliberation. In that time, we have met with some success, but the

team has also faced a series of challenges. We trust that our discussion of the process of curricular change at Casper College will sound familiar to those who have undertaken a similar endeavor. We also are confident that our example will prove helpful to those who have yet to engage in the process. In what follows, we share some of the lessons we have learned.

Consider the history of the community college

The study of history is a cornerstone of general education. Across the country, and around the world, we ask students to study history under the assumption that the present and the future rest on a foundation built by previous generations. Ironically, our committee did not take time to discuss the history of general education in the two-year school. Our situation is hardly unique, however.

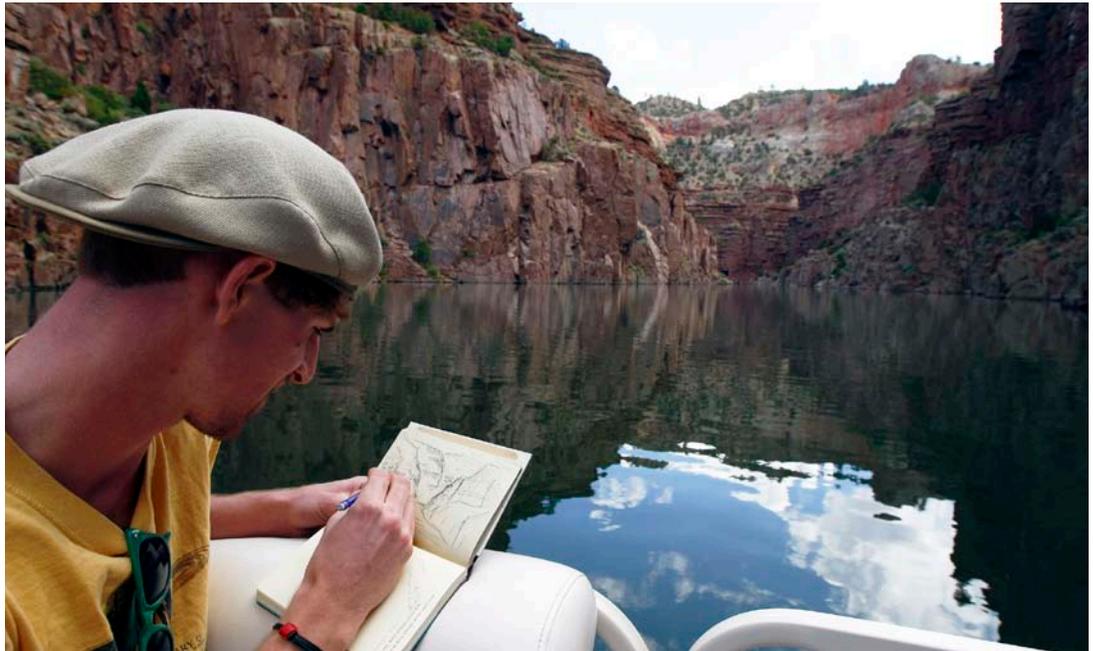
One of the quirks of higher education is the practice of hiring full-time educators without a background in the study of education. A comparison with other professions makes the situation seem uncanny. For example, a hospital would not hire a medical doctor who had not made a formal study of medicine; law offices do not hire counselors who have not studied the law. But we routinely hire teachers without a background in the study of teaching. This practice sends the message that matters of education and curriculum do not require rigorous thought or analysis. After close to three years' worth of arguments among members of our committee, we are certain that assumption is untrue.

At a minimum, if we would have taken time to study the role of the liberal arts in two-year schools, we could have developed an understanding of the reasons why committee members often found themselves at odds with

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Curriculum





Casper College

each other. Even a brief examination of the community college suggests that the institution has a unique relationship with general education.

Historically, two-year schools were liberal arts colleges, patterned after the University of Chicago. In the late eighteenth century, William Rainey Harper, then president of the university, divided undergraduate studies into junior and senior colleges. That split the four-year baccalaureate. The first two years introduced students to the arts and sciences, while the third and fourth years immersed them in a particular subject.

In 1901, with Harper's support, the first junior college opened its doors at a site in Joliet, Illinois. The school was the first to offer the associate degree. Harper chose the term "associate" to suggest that the degree's value was to be realized when it was "associated" with in-depth study in a single discipline. For three decades, the model used in Illinois served as the national standard.

By the middle of the twentieth century, junior colleges began transforming themselves into community colleges. That meant a shift away from the liberal arts, toward a more comprehensive mission. The schools sought to balance the goals of general education, vocational training, and community outreach. In the new era, the associate degree was no longer thought to represent the first half of the baccalaureate. In many cases, two-year degrees became terminal. Programs were divided between the liberal arts and a major. That trend continues to this day.

The problem is that students still must earn roughly sixty-four credits to qualify for the associate degree. Major requirements account for at least a third of those credits, though many majors use up fully half the space in a degree program—and some would like to take up even more. In certain departments, major coursework could account for all sixty-four credits. Thus, in the community college, we argue about the size and shape of general education.

The changing mission of the institution put a squeeze on the curriculum. As a consequence, there is no easy way to settle the argument over the number of credits it takes to complete general education in a two-year course of study. But it is helpful to know that the debate has roots in the fact that we are asking associate degrees to perform roles for which they were not originally intended. In other words, the problem is historic and structural, and therefore not unique to the psychology of any particular members of a curriculum committee.

Examine the assumptions behind your intentions—even the good ones

More so than other student populations, community college students attend class and pursue their education in the face of hardships. Some students are swimming in debt. Others are struggling to learn parenting skills at the same time they are trying to learn to write effectively.

For some, the walk to class presents a physical challenge, and some are unfamiliar with the basic workings of a computer.

Community college teachers are compassionate. When we see students in trouble, we want to help. Therefore, when we serve on committees designed to restructure curricula, we see the role as a chance to lend a hand. The tendency is to require students to take courses in the areas where we have seen them struggle. We could all cite a case where a student would have benefitted from a course on personal finance or parenting skills or computer basics. For that reason, we are glad our college and most others offer such courses, but in a liberal arts program, especially one of limited size, courses in basic skills often take the place of courses in the arts and sciences.

For some faculty, substituting one type of course for another seems appropriate, but there are questionable assumptions that underlie the tendency to steer community college students toward courses in basic life skills as opposed to the liberal arts. One of the assumptions is that two-year college students cannot meet the demands of challenging academic courses. Another assumption is that those same students will not rise into positions where they would make use of creativity, critical capacities, or higher-order thinking skills. Both assumptions require an unsavory lack of confidence in students, their potential, and their ability. In other words, we sell our students short, and in so doing we limit their potential to contribute to society.

Keep learning outcomes in their place

Early on, the majority of our committee members agreed that we should begin by listing the knowledge and skills our graduates ought to possess. The discussion of outcomes enjoyed a place of primacy in our meetings. During our conversations, we made good use of the Essential Learning Outcomes offered as part of the Association of American Colleges and Universities' Liberal Education and America's Promise (LEAP) initiative (AAC&U 2007). We also found support in Mary J. Allen's (2006) *Assessing General Education Programs*. Our efforts culminated with a list of eighteen

There are questionable assumptions that underlie the tendency to steer community college students toward courses in basic life skills as opposed to the liberal arts

different outcomes, which were discussed and then approved by our faculty senate.

The next step included making decisions about where students would achieve the outcomes. Ultimately, we had to decide which courses they would take. On this matter, we did not reach a consensus. We had been focused on assembling a set of learning outcomes.

Then, when we finished, we went looking for places where students could achieve our objectives. But it turned out that the range of places was broader than many of us had imagined. For example, students learn to think critically in our welding courses. They improve their writing skills in classes on marketing. On our campus, computer networking courses involve teamwork, and it is possible to demonstrate responsibility by taking workshops to improve safe practices in coal mining.

On one level, we were glad to find out that a range of courses address the outcomes typically linked to the liberal arts. Yet, it also began to look like our students might complete their general education without taking a single course in the arts and sciences. Moreover, from the perspective of certain departments, it started to look like students would not have to take any courses outside of the major. We believe in the importance of measuring outcomes, but the assessment of liberal arts outcomes is no substitute for a liberal arts curriculum. It is important to place general education outcomes in context—the context of the arts and sciences.

Disciplines matter—history, philosophy, biology, mathematics. Each field in the academy offers a unique perspective and method of inquiry. With regard to the history of higher education, Romans created the *collegium* to collect a diverse group of scholars in a single place. As a result, students and society both have benefitted from access to a range of means to frame and then confront problems.

Our committee started out by thinking small. We began by assembling a set of learning outcomes. If instead we had begun with a discussion of the disciplines students should engage with as part of their general education, however, then in the end we could have enlisted faculty from those areas to help establish

appropriate goals and objectives. That was not our path, but it is an approach worthy of consideration.

Remember, two-year college students transfer

Four-year institutions enjoy a high level of freedom when it comes to their curricula. They can offer and require a unique mixture of classes. They can put a distinctive stamp on their liberal arts program, and, in the end, after completing the requirements, their students earn bachelor's degrees.

Community colleges work under a different set of circumstances. We offer a general education program that will potentially serve as a component of a four-year degree in any one of the nation's baccalaureate-granting institutions. Late in our process, we discovered that, between 2008 and 2010, students transferred from Casper College to 199 different institutions—from Middlebury College in Vermont to the University of Hawaii. Most two-year schools can make similar claims,

and when community colleges drift away from a traditional core group of classes, graduates find it difficult to transfer. For instance, a two-year college may require an introduction to Microsoft Word as part of the general education program, but that course will not likely transfer as part of a university's liberal arts curriculum. From the standpoint of students, it is vital that they receive general education credit for their general education.

Apply the argument for labor force development carefully

As is typical of any committee, on any campus, our curriculum committee included members who believe the liberal arts are unnecessary, that they are a distraction from the business taking place in the "real world." A number of us made the case that employers value the outcomes of a general education. Hence, we held several discussions about the best means to prepare students for success in the labor force. We are happy to say that, near the end of the process, the majority of our committee



Casper College

members came to agree that the liberal arts serve graduates in the workplace.

Through the course of our meetings, however, no one made the case that the goals of a college education relate to anything but employment. The faculty geared toward workforce development argued for the necessity of vocational competence. The liberal arts faculty argued that general education plays a role in preparation for careers. Nobody argued that students are more than one-dimensional workers. Nobody claimed that education entails more than job training.

In the process of making the case that the liberal arts are valued in the workplace, faculty unwittingly support the assumption that colleges exist solely for economic purposes. Of course, the arts and sciences are useful on the job, but they also help fulfill a higher purpose: human development. The liberal arts provide resources to help people ask and struggle to answer questions that relate to ethics, logic, and what it may take to produce a just and peaceful future. Ideally, supporters of general education can divide their attention, and make the case that the liberal arts are preparation for both life and work.

Focus on enduring questions

As a nation, we place faith in the idea that we can use higher education to address social problems. Elected officials rarely give a speech without mentioning the role of education in solving one of our pressing concerns. Likewise, our committee spent time trying to decide how our general education program would contribute to the nation's recovery from the recession that began in 2007. Our interest in solving the financial crisis led to an even longer discussion about the cause of our current predicament: consumer incompetence, Wall Street greed, Democrats, supply-side economics, and so on. Some of the discussions were brutal, and worse, they were unnecessary. By focusing on the problems that occupied our attention at the moment, we became distracted. We were kept from discussing the issues and questions that are most pertinent to a liberal arts program: the big, enduring questions.

The purpose of a general education is to give students a chance to wrestle with the issues that

If the benefits of a general education are going to be realized, they are going to be realized, in large part, on two-year campuses

have dogged humanity since the beginning. Do we possess free will, or is our behavior determined? What are the standards for beauty? Is science the best or only way to know the truth? Are morals relative or absolute? What are the

defining features of our age? Are freedom and equality compatible? What is our responsibility to each other, to the earth, or to animals? When students are given an opportunity to address such broad, durable questions, the end result is a careful type of introspection. Well-designed liberal arts programs create a place and time for students to ask, what should I care about and why? Or, to what use should I put my life? It is only through the process of grappling with such questions that students can move in the direction of living well, as opposed to simply making a living.

Conclusion

When we think of the liberal arts, many of us think of liberal arts colleges. We picture marble columns and creeping vines on brownstone walls. Most undergraduates do not attend private, four-year institutions, however. Statistically, most students attend community colleges. Thus, if the benefits of a general education are going to be realized, they are going to be realized, in large part, on two-year campuses.

That places a grave responsibility on faculty and staff. In our experience, however, that is a challenge that the personnel of two-year schools can meet. Through careful planning, sound choices, and frank conversations, the community college holds the potential to make good on the promise of the arts and sciences. □

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

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JENNIFER FLETCHER

Critical Habits of Mind

Exposing the Process of Development

WHEN I FIRST STARTED graduate school, I was an incurable snoop. Deeply curious about the lifestyles of my professors, I looked through the bookcases in their offices, studied the clutter on their desks, and asked personal questions about everything from how they balanced work with family to how many hours they slept at night. Yet I wasn't trying

to pry into their private lives; I was simply fascinated by how they did their academic work because I'd never seen professional scholarship in action before. I knew the results, but not the process.

Later, when I had the opportunity to work in the open, shared space of the British Library's reading room, I found myself in an intellectual voyeur's heaven. Here before me were world-renowned researchers, taking notes, turning pages, frowning, and sighing. It was a revelation to me to see in person the struggles I had associated with novices replicated on the faces of experts. In the reading room, I at last saw the photo negative of academic labor—a total inversion of production and product.

Too often, undergraduates do not see this master image. In *Clueless in Academe* (2003), Gerald Graff argues that many students (and people in general) feel unnecessarily confused and embarrassed in the world of higher education because it obscures its own processes. Graff claims that "academia reinforces cluelessness by making its ideas, problems, and ways of thinking look more opaque, narrowly specialized, and beyond normal capacities than they are or need to be" (1). My own

bewilderment by what Graff calls the "mysterious guild secrets" (191) of graduate education convinced me we can do a better job exposing the hidden brainwork that leads to academic success.

Habits of mind and college preparedness

One way to make procedural knowledge (i.e., the *how*) visible to more students is by explicitly teaching habits of mind. These habits include broad, dispositional capacities—such as curiosity, engagement, persistence, flexibility, and metacognition—that support learning within and across disciplinary and institutional contexts. Since the phrase first became popular among educators in the 1990s, scholars have offered many congruous definitions for "habits of mind": They are "a fundamental set of behaviors for thoughtful teaching and learning" (Costa and Kallick 2009, ix), "foundational dispositions well-prepared students have" that are "essential to successful participation in [academic] culture" (ICAS 2002, 13), or "ways of approaching learning that are both intellectual and practical" (CWPA, NCTE, and NWP 2011, 1). Reading scholar Sheridan Blau (2003, 19) calls them "traits of performative literacy." A 2007 Bill and Melinda Gates Foundation report calls them "academic behaviors." Mathematics educator E. Paul Goldenberg (1996, 14) gives a particularly useful explanation: "By 'habits of mind,' we mean ways of thinking that one acquires so well, makes so natural, and incorporates so fully into one's repertoire, that they become mental habits—not only can one draw upon them easily, one is likely to do so." Habits of mind, in other words, are an internalized set of practices essential to critical thinking.

How do we operationalize habits of mind as an instructional approach?

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Yet despite this agreement among scholars about the meaning and value of habits of mind, these dispositional practices largely remain in the shadows of college instruction. Even in K-12 education, where habits of mind enjoyed a limited spotlight, this approach has lost support in the wake of the recent standards and accountability movement. Because these broad intellectual capacities are not easily assessable, they have been slighted in favor of more conspicuous and discrete learning outcomes (Ravitch 2010)—a neglect that often obscures the very processes by which students acquire proficiency in academic skills and knowledge. Even the National Assessment of Educational Progress (NAEP), the federal government’s flagship model of standardized testing, recognizes that some of the most important things students learn in school transcend content-based performance measures. In an attempt to suss out the differences between college readiness (a holistic, dispositional condition) and college preparedness (a concrete aggregate of skills), the final report of the NAEP Technical Panel on 12th Grade Preparedness Research (2008, 3) offers the following distinction: “Academic preparedness is separate and different from college readiness because readiness encompasses behavioral aspects of individual performance related to success in addition to academic skills, and these additional attributes are not measured by NAEP. Examples of readiness characteristics include persistence, time management, interpersonal skills, and knowledge of the context of college.” If we accept that working hard and knowing how to think are central to learning disciplinary content (Arum and Roksa 2011), then we need to feature the habits of mind that develop those practices far more prominently in our curricula.

A multi-campus, cross-disciplinary collaboration

That’s exactly what our small group of college math and writing faculty from California has been trying to do. Funded by a grant from the Lumina Foundation, thirty developmental education instructors from Cabrillo College, California State University–Monterey Bay (CSUMB), and Hartnell College have partnered

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to create lesson exemplars that target intellectual capacities such as motivation and self-efficacy. Believing that it is these kinds of affective qualities that most directly contribute to students’ successful transition to higher education, we asked ourselves a key question: How do we operationalize habits of mind as an instructional

approach? The grant gave us multiple opportunities to find answers.

We started by taking a closer look at our institutional contexts and the students we serve. Cabrillo and Hartnell are both two-year colleges; CSUMB is a four-year comprehensive university, one of twenty-three in the massive California State University system. All three campuses are Hispanic-serving institutions whose students herald from throughout the “salad bowl” of the Salinas Valley and from up and down California’s foggy central coast. This is Steinbeck country. Placement in college-level writing and math classes hovers around 50 percent for first-time students at the state school, and is lower at the two community colleges. Most students work, receive financial aid, and—should they persist until graduation—will be among the first in their families to earn an associate’s or bachelor’s degree. First-year retention rates for each campus vary from below 50 percent to a high of 76 percent. Grant participants primarily work with first-year and “developmental” students; many are part-time faculty and lecturers.

After examining our local context, we talked about how first-generation students at our three campuses experience the “hidden curriculum” of higher education. Many of our students have math or writing anxiety. Most are surprised by the amount of studying required outside of class. Few have regular routines or dedicated spaces for academic work. These are not “deficits” our students bring to college; they are data for making instructional decisions.

We likewise explored the kinds of learning experiences and behaviors that fostered our own development as thinkers. During one lunch discussion on a collaboration day, for example, colleagues from different disciplines and campuses talked about what motivated

them. Overwhelmingly, faculty mentioned “interest” and “variety,” not abstract goals. On another day, a writing instructor (herself a first-generation college graduate who now holds an MFA and a PhD) shared what a revelation it had been to her to learn that academic essays have a specific structure. By sharing our stories, we learned that many of us had indeed felt profoundly clueless during our journeys toward becoming scholars. We wanted better for our students.

Classroom applications

While we knew that we couldn’t simply put “holistic intellectual growth” as an outcome on our syllabi (how will you measure it!), we also knew that this was what we were after in focusing on habits of mind. We further believed that this kind of growth depended on explicit coaching and practice. In *College and Career Ready* (2010), educational policy scholar David T. Conley identifies direct instruction in “academic behaviors,” such as “resilience in the face of academic frustrations” (114–15), as a key principle of successful college preparation programs. Accordingly, we sought ways to give these behaviors a dedicated space in our curricula, believing that while “an entire campus engages and educates its students in the learning required for our times . . . it is in the classroom where powerful experiences of learning are the enticement, the reward, for persistence” (Malnarich 2008, 4). In our

own classrooms, we’re now experimenting with how and when to address habits of mind as an instructional target.

Ken Rand, a math instructor at Hartnell College, uses clicker technology to learn about his students’ backgrounds and interests while engaging them in the classroom community. On the first day of class, he asks questions such as “What is your favorite food?” or “How do you get to campus?” and then allows students to respond anonymously through hand-held devices. Some of Ken’s most intriguing questions invite students to make a difficult choice: “Would you rather speak another language fluently or be able to do difficult math in your head?” or “Would you rather win the lottery or find true love?” Asking these kinds of provocative yet “safe” survey questions generates both curiosity and engagement in Ken’s math class, while also demonstrating a key principle of higher education: many questions don’t have clear or easy answers.

Lydia Graecyn, a writing instructor at Cabrillo College, created an innovative approach to fostering persistence among her students during the ticklish work of peer review. Knowing that many students are hesitant to offer constructive feedback on their peers’ writing—both because it’s hard work and because they don’t want to appear rude—Lydia offers an illuminating comparison. She tells a story of having lunch with a friend and then spending a full day of errands meeting



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many people before realizing that she had a large piece of spinach stuck to her front tooth. She next asks her students to raise their hands if they would want someone to tell them if they had something stuck in their teeth. “Usually every student will raise his or her hand,” Lydia explains. “Then we discuss gentle ways to inform someone about something in another person’s teeth, hair, nose, on their clothes, or in their essay.” Lydia’s explanation of the value of seeking and giving honest, critical feedback encourages her students to take themselves seriously as academic writers and to see writing as an authentic act of communication. By explicitly addressing how language use impacts a writer’s image, Lydia increases her students’ self-awareness and motivates them to persist in presenting themselves as effectively as possible—a practice that can ultimately lead to improved self-confidence.

In Hartnell writing instructor Hetty Yelland’s pre-transfer-level class, Friday is “Scrabble Day.” Every week, students in Hetty’s class explore the technical properties of the English language by playing Scrabble with one another. At first, students enjoy the activity as a pleasant diversion. But over time, they find the game increasingly difficult as each player becomes a more sophisticated strategist. Because the weekly routine gives students repeat experience with language play

**We’ve learned that,
just like rigor
and joy, academic
progress and
personal development
are symbiotic**

and word formation, it challenges students to go beyond surface understandings of vocabulary toward more complex theories of language. Indeed, Hetty shares that students typically become bored with

the game after the first few weeks. It’s the extra effort students have to make to overcome the boredom—and their passive word knowledge—that eventually leads to more active and internalized language practices, thus highlighting the critical connection between persistence and habit formation.

Hetty’s colleague, Heidi Ramirez,* uses play of a different sort to promote her students’ confidence and engagement. She created a text-based improvisation exercise that requires small groups of students to dramatize kinds of lies (“white” lies, delusions, omissions, etc.) in response to an article they read. For this activity, students create and perform a skit showing the lie in action. During one of our collaboration days, Heidi modeled how she uses this strategy in her classroom to improve her students’ poise and reading comprehension, calling those times when students finally let go of their insecurities and come into their own as writers or performers “arrival moments.”

Additional lessons we’ve been piloting include strategies for attacking academic boredom, ways to incorporate games and stories in math classes, and metacognitive writing activities (e.g., “Math Anxiety Essays” or process descriptions). During and after instruction, we look for evidence that we’ve met our mark: Are the students asking questions? Talking to each other? Smiling? Nodding? Writing? Problem solving? We also ask students to be self-aware as learners. After piloting a habit-focused lesson, we distribute the following set of questions to our classes: (1) Were you interested in the lesson? Why or why not? What did you do to self-manage? (2) Was anything confusing to you? If so, how did you deal with your confusion? (3) How can you use what you learned for other assignments and classes?

Reflections

We’re finding that this approach upends the complaint of not having enough time to teach things like creativity or time management by foregrounding, and indeed privileging,



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procedural knowledge as essential to the development of conceptual or disciplinary knowledge. In her description of an integrated, experiential approach to learning that fosters effective citizenship, Janet Eyler (2009, 24) explains how “personal, social, and intellectual goals are intertwined.” Our work makes a case for keeping these goals intertwined. We believe in dedicating instructional time to teaching habits of mind in addition to the measurable outcomes that are the outward signs of a lot of fuzzy and fitful brainwork. As California’s Intersegmental Committee of Academic Senates puts it in its document *Academic Literacy*, “True academic competence depends upon a set of perceptions and behaviors acquired while preparing for more advanced academic work” (ICAS 2002, 12).

One caution: we’ve learned that, just like rigor and joy, academic progress and personal development are symbiotic. Habits of mind uncoupled from academic content devolve into meaningless study skills and platitudes; academic content uncoupled from habits of mind devolves into perfunctory test preparation. Both are soulless busywork.

Conclusion

As a result of our grant collaboration, I’m learning to recognize other incognito apprentices like myself—those students who job-shadow me on the sly, in much the same way that I watched scholars in the British Library. They’re looking for the photo negative, too. I think of students like Renée, Tony, and Anna who drop by during my office hours just to see what I’m “up to.” Tony, a first-generation student who wants to teach English at his former high school in an agricultural community, once told me that he wants his personal library to look like mine someday. Or I think of the brilliant young mother contemplating graduate school who wondered how to make room for diaper changes and a dissertation in the same lifestyle. The question they ask most often is, “How do you do it?”—meaning how do you become and be a person who does this kind of work? My answer is never a learning outcome on my syllabi. I don’t say, “Well, you need to interpret and integrate information from multiple sources.” I say instead, “Follow your curiosity, keep showing up for the things that matter, be open to surprises.”

After all, it’s not the finished image that most intrigues these students; it’s the process of development. □

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

NOTE

*After this article was written, Heidi Ramirez, a key leader of our multi-campus collaboration, passed away from a rare and aggressive form of cancer. Heidi was a superb colleague and friend, a gifted teacher, and an outstanding advocate for students. Her gracious leadership and legacy have had a profound influence on our efforts.

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My Learning Curve on Learning Disabilities

CHRISTOPHER AMES

I RECENTLY SPENT A YEAR studying best practices in serving students with learning and other disabilities, and, surprisingly, the experience altered my own thinking in significant ways. I came to this study not as a specialist in disabilities but as an academic administrator with years of faculty experience, and that perspective helped me learn how faculty can play a key role in tapping the intellectual potential of students with disabilities. Having been a provost at two colleges, overseeing the offices that assisted students with disabilities, I understood the legal mandates for accommodating those students and the moral imperative to facilitate the success of all the students we admitted. Those perspectives didn't change. But I came to understand that working innovatively to serve students with disabilities contributes to the powerful social goal of unlocking the often stifled intelligence and creativity of students who learn differently and face significant obstacles in traditional educational settings. I also learned that the pedagogical challenges posed by students who learn differently have the potential to stimulate innovation in teaching in ways that can help all students learn. As a result of my year spent focusing on so-called "LD students," I became a better administrator and a better teacher.

As I met with directors of college programs for students with learning disabilities, joined a vibrant listserv of such professionals, enrolled in workshops on the topic, and read key professional texts, I brought a healthy, even exaggerated, skepticism with me. I knew that many faculty view the dramatic increase in students with diagnosed disabilities with such skepticism, even though they rarely express it openly. Certain rapidly growing diagnoses—such as attention deficiency disorder (ADD), executive functioning disorder, and dyslexia—present themselves with symptoms that often mirror carelessness and poor study habits. I knew that, privately, some faculty wonder whether a symbiotic industry isn't evolving in which well-heeled parents, disappointed in the academic performance of their children, are paying professionals to assuage their dismay by diagnosing their children as disabled. No one suspects this of a deaf student or a student in a wheelchair. But a student whose symptoms include an inability to organize and remember assignments seems suspicious. Were we as a society complicit in pathologizing poor study skills into a condition that requires accommodation and subtly shifts the responsibility for the student's poor performance from the student to the school?

The answer, I came to believe, is clearly no. Indeed, many learning disabilities specialists believe that such things as ADD are still underdiagnosed. There are two kinds of information that dispel the skepticism. First, studies that document neurological differences in individuals with learning disabilities help demonstrate what those persons often know all too well themselves: they think differently. Even simple data, such as those derived from studies showing that ADD students have different eye movements when reading a text, help support the appropriate paradigm for understanding the interaction between learning disabilities and intelligence.

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As a result of my year spent focusing on so-called "LD students," I became a better administrator and a better teacher



Shepherd University

The importance of personal experience

As I talked with faculty and with LD professionals, I discovered that a more important factor in tempering skepticism of learning disabilities was personal experience. Again and again, I heard faculty tell how recognizing disability symptoms in a child, a relative, or even in themselves created a moment of awareness that modified their thinking and made it easier to understand how different ways of thinking and learning could foster a situation in which very intelligent and diligent children performed poorly in school.

For me, the light bulb went off when I read *Learning Outside the Lines: Two Ivy League Students with Learning Disabilities and ADHD Give You the Tools for Academic Success and Educational Revolution* (Mooney and Cole 2000). Here was a book in the field that was not written by and for educators, but by and for students with disabilities. Though the book has some flaws, its irreverence, wit, and common sense make it extremely valuable for understanding the experience of students with disabilities and how traditional educational approaches have frustrated and discouraged such students.

The book begins with each of the coauthors telling the story of his schooling. It is excruciatingly painful as they each describe multiple failures in school followed by teacherly and parental exhortations just to try harder and apply themselves. As an English teacher, I cringed with recognition and embarrassment as these young authors talked about how our earliest treatment of writing in the schools focuses on penmanship and spelling—two tasks notoriously difficult for dyslexics, whose other language skills (including the ability to construct complex sentences, coherent paragraphs, and compelling narratives) are left untapped while they struggle with handwriting and spelling tests.

I remembered that handwriting was my most difficult subject in elementary school. And I remembered how teachers repeatedly told us that they were preparing us for the more stringent demands of the grade levels ahead. The height of that ridiculousness came in sixth grade, where we all were required to write with ink cartridge pens because “that

The design that accommodates everyone brings unexpected benefits

would be required when we went off next year to junior high.” Cartridge pens are murder for kids with weak handwriting—not to mention how rough they are on clothes. But the irony is that once we got to junior high, teachers didn’t care what we wrote with.

After the first two chapters, *Learning Outside the Lines* becomes a guide addressed to other college students with disabilities, offering practical advice on how to succeed. A few items will make faculty uncomfortable, such as clever advice about how to participate in class discussions of works you haven’t read or the revelation that one of the authors faxed every college paper to his mother for editorial assistance. But what is most remarkable about the practical advice is that virtually all of it is applicable to any student, not just students with disabilities: how to make good use of research librarians; different ways to read and highlight textbooks; how to take advantage of writing and tutorial centers; how to develop a quick outline for an in-class essay.

These two aspects of the book are crucial for understanding how colleges and their faculties can remove barriers to student learning. First, the book forcefully presents the often tortured reality of the intelligent student with a significant disability and leads to an understanding of just how poorly served those students have been by traditional pedagogical approaches. But the second, really powerful aspect is the book’s presentation of the keys to academic success for the LD student, many of which are straight out of any standard “how to study and succeed” playbook. At first, these two observations may seem contradictory: we need to appreciate how students with learning disabilities genuinely think and process information differently from the norm; and we need to recognize that what helps them learn is often exactly what aids the learning of so-called normal students.

Part of the message of Mooney and Cole’s book is that if you know you have some significant learning disabilities, you have to accept that you can’t get away with some of the careless behavior that some of your peers might exhibit. Your roommate might be able to party all night and still ace an exam in the morning, but you need to know that lack of sleep (and a hangover) impairs your memory. LD students

need to internalize a dual lesson that requires some maturity: it's not your fault; but you have to work harder to achieve the same results as students without your disability.

Universal Design for Instruction

The powerful pedagogical corollary to this I learned from the LD professionals, not the student writers. The concept of Universal Design for Instruction (UDI), borrowed from architecture and applied to the classroom, asserts that innovations designed to aid disabled persons often end up benefitting many kinds of learners, not just those with documented disabilities. Proponents of Universal Design love to use the architectural example of the “curb cuts” created to allow persons in wheelchairs to move easily from sidewalk to street. While they are designed to do exactly that, they also turn out to be very handy for bicyclists, delivery persons with hand trucks, and parents pushing strollers. The design that accommodates everyone brings unexpected benefits.

What does Universal Design for Instruction mean for college teachers on an everyday basis? It offers a set of principles that can be applied to the dozens of choices one makes in designing and delivering a course. When assigning a paper, should you just talk about your expectations in class, or should you also distribute a handout? UDI suggests doing both, thus catching the auditory and the visual learners. And be sure to put the written assignment sheet on your course management site: the student with a visual disability might benefit from an electronic copy that can be enlarged; the student with executive function disorder is helped by being able to find everything on the course site; even the student skipping class to attend a family wedding can also access the information remotely.

Some of the most radical implications of Universal Design relate to the assignments we use to measure student learning. Universal Design principles suggest that we should use several different kinds of assessments: tests, essays, oral presentations, group projects, etc. Using varied assessment methods reduces the likelihood that we are primarily measuring test-taking skill or essay-writing skill when we want to see how much a student has learned about a political theory or a biological process.

Consider the multiple choice exam. Many students (I was one of them) find multiple

choice questions easy. The presence of the correct answer jogs your memory and, by applying deductive reasoning, you can eliminate some wrong answers and guess correctly. But consider what a question like the following, designed to measure knowledge in a biology course, looks like to a dyslexic student:

Which of the following is a risk factor for type 2 diabetes?

- a) Certain ethnic backgrounds
- b) Hair color
- c) Obesity
- d) High blood pressure
- e) All of the above
- f) a, c, and d

Identifying the correct risk factors (a, c, and d) and recognizing that a, c, and d each fail to be the “best” answer can be a baffling exercise in close reading that obscures whether or not the student actually knows the material being tested. For the dyslexic student, a short answer questions that simply asks the student to list the risk factors might work much better because it would test the student's recall of the information taught in class. But for other students, the opposite is true. So UDI suggests that you mix the methods to get better pictures of what students are learning.

If you are like me, you may remember your sixth grade teacher emphasizing that a big part of your assignment was learning how to follow directions. That is an important skill, but it shouldn't be the prism through which we assess all student learning. (Trying to read a multiple choice question that deliberately creates additional complexity through the eyes of a dyslexic student reminded me of Jonathan Mooney's revealing comments about word processing spell-checkers and dyslexics. He acknowledges that spell-check is a great help for the dyslexic student, but he adds that there is almost nothing worse for such a student than being confronted with four different words with slightly different spellings to choose from.)

So I asked an irreverent question in a faculty workshop on Universal Design: “Is Universal Design fundamentally at odds with writing across the curriculum?” This is a topic big enough for another essay, but it generated a revealing discussion. The instructor responded that the two philosophies are not at odds as long as the courses that put an emphasis on writing are courses that include learning writing skills as a fundamental objective. Fair

enough. But I reminded her that one goal of writing across the curriculum is to get more classes to do just that and to wage war against the student perception (and sometimes the faculty practice) that writing only matters in English classes. I mention this only to suggest that UDI has its limits; it's not a panacea. But it is a good way to engage faculty in thinking about their pedagogy and in thinking about learning disabilities more broadly than just in terms of student accommodations (making sure that student X has extended test time and that student Y is allowed to do in-class writing on a laptop). More usefully, UDI allows faculty to explore ways to improve their pedagogy for the reality they face every term: each class is filled with different kinds of learners, some with documented disabilities and some with more traditional strengths, weaknesses, predilections, and aversions.

When I spoke to the professionals in charge of the offices that serve LD students, I encountered people who were dedicated, smart, and passionate about their work. When I asked them how to get faculty more involved with and attuned to students with disabilities, they all stressed that they (as professional staffers) couldn't do this on their own; they need (and often find) faculty champions who help initiate conversations about progressive pedagogy on their campuses. Sometimes, they told me, these are the usual suspects: faculty in psychology and education who understand the learning or neurological issues as part of their fields. But, just as often, they are faculty who have dealt with an LD child or relative. Others are faculty who recognize characteristics of learning disabilities in themselves. Indeed, academia is often a very good place for people who are brilliant but lack certain basic social or communication skills. The new research and the bigger crop of students with disabilities

attending colleges provided them with a vocabulary to understand themselves or their loved ones whose intelligence or creativity doesn't fit well into the conventions of schooling.

One director pointed me to Temple Grandin's (2010) TED talk about autism and creativity. It's a remarkable piece that uses visual images to illustrate the different ways her mind works. The biggest response she received from the audience came when she described autism as a continuum stretching from nonverbal children to brilliant scientists and engineers and said, "I actually feel at home here because there is a lot of autism genetics [in this room]." Her point was that Asperger Syndrome (and other disabilities) can mask the creativity our society needs to solve its most pressing problems. As I work with LD professionals to bring broader faculty understanding and participation to our efforts to enhance services to students with disabilities on our campus, I think of my own learning curve over the last year. In a way, my skepticism (or, less judgmentally, my critical perspective) served me well. It led me to the hard questions and the unusual sources that allowed me to change the way I think and teach. □

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

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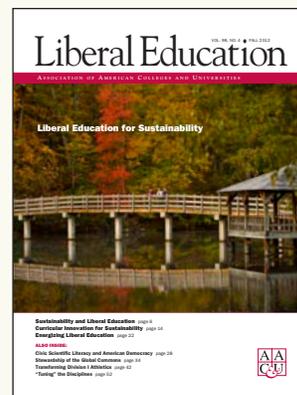
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This issue presents several perspectives on the ongoing national efforts to increase college completion rates, focusing in particular on the potential negative unintended consequences for educational quality. Other topics include successful models of change for STEM reform, program-level assessment,

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- **The Incomplete Completion Agenda: Implications for Academe and the Academy** *By Gary Rhoades*
- **Students Must Not Become Victims of the Completion Agenda** *By Scott Evenbeck and Kathy E. Johnson*
- **It's Not So Easy: The Completion Agenda and the States** *By Garrison Walters*



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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.

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- **Curricular Innovation for Sustainability: The Piedmont/Ponderosa Model of Faculty Development** *By Peggy F. Barlett and Geoffrey W. Chase*
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