

## PERFECT STORM:

### HOW AN IMMINENT CRISIS IN HIGHER EDUCATION CAN STRENGTHEN LIBERAL EDUCATION

*In memory of Stephen Weiss*

Adapted from a lecture given at Boston College on April 5<sup>th</sup> 2011. *I am indebted to Henry Braun of the Education School and Erik Owens of the Boisi Center for Religion & American Public Life.*

I flunked Retirement 101. What followed turned out to be a great learning experience.

So great that I feared my new employer, the Teagle Foundation, would find out how much I was learning and start charging me tuition.

Much of what I learned involved thinking in new ways about what I had been doing for years as a teacher and scholar. When I retired from the National Humanities Center and began a new career at a foundation devoted to strengthening liberal education, I found I had to ask some hard questions about ideas and practices I had always taken for granted.

Some of what I learned came in the form of "Aha!" moments. For example, in a luncheon meeting with a group of exceptionally talented summer interns, undergraduates from a wide range of top flight universities, I realized their success in college was not simply the result of brain power combined with good instruction. They were self-starters, who had thought hard about what they wanted from their education and then took the initiative, by seeking out programs and courses of special interest to them, introduced themselves to faculty and staff members. They had "knocked on a hundred doors." The results were evident in their engagement, learning and commitment.

"Aha!" I thought, "if that makes such a difference for undergraduates, is there an analogy for faculty members and academic officers? What would it mean at those levels really to think and work equally hard about making liberal education really work?"

Those questions keep getting more intense. American higher education seems to be sailing into a perfect storm, composed of at least three converging circumstances. The forecast is not a sunny one, but a closer look at this imminent perfect storm gives reason to believe that liberal education can come through these difficulties stronger than before, *provided* that those who care about it take the initiative, and do so promptly.

#### **The Imminent Perfect Storm**

It is hard to forget Sebastian Junger's book *The Perfect Storm* (Norton, 1997) or Wolfgang Petersen's 2000 film with the same title. If you had been living in New England in autumn 1991, it would be no less difficult to forget the "Halloween nor'easter" itself.

NOAA has a whole section of its web site devoted to this storm (<http://www.nws.noaa.gov/om/marine/perfect.htm>), with details such as, "NOAA buoy

*44011 located at 41.1 degrees N, 66.6 degrees W reported maximum sustained winds of 49 kt with gusts to 65 kt and a significant wave height of 39 feet ." The most gripping part on the story, however, is the sinking of the fishing ship Andrea Gail, which set out from Gloucester just before the storm and never returned. The ship is presumed to have sunk sometime after midnight on October 28<sup>th</sup> 1991.*

This perfect storm was the result of converging meteorological forces, -- a strong, high pressure system of Canadian air moving over the Appalachians, and converging with warm air over the Atlantic, with further turbulence caused by hurricane Grace's hairpin turn eastward. There had been nothing quite like this storm since the great hurricane of 1938.

At least three forces are converging right now in American higher education. They are all familiar ones – the economy, the skeptical mood of the American public, and what is sometimes called "a failed business model" A fresh look at them challenges conventional wisdom and points to an opportunity in this perfect storm for strengthening liberal education.

**First, the economy.** Great attention has been paid, and properly so, to the effects of the meltdown that started in 2008, and the agonizingly slow recovery that has followed. Higher education has not escaped the pain, and will surely feel more as the budget battles in Washington and in state capitals continue.

Even before 2008 college education was in an affordability crunch. The growth of family income stalled during the first decade of the new century, as the College Board has pointed out:

*Over the entire income distribution In the United States, average family incomes in 2009 were equal to or lower than they had been a decade earlier after adjusting for inflation. The largest declines were for the lowest -income families.*

See [http://trends.collegeboard.org/downloads/College\\_Pricing\\_2010.pdf](http://trends.collegeboard.org/downloads/College_Pricing_2010.pdf)

The same report indicates that tuition and fees at private four year colleges increased on average 3% per year over the CPI. (At public four year institutions the annual rate was 5.6% over the CPI.)

Colleges struggle hard to have financial aid keep up with these increases, just as families scrambled to help their kids pay for college. It's getting harder and harder to make that happen.

The affordability crunch is bad enough but it should not obscure another phenomenon, one that I find even more frightening. Paul Krugman calls it the "hollowing out" of the American economy, including the computerization of all "cognitive and manual tasks that can be accomplished by following explicit rules."

Paul Krugman "Degrees and Dollars" the New York Times March 6<sup>th</sup> 2011:  
[http://www.nytimes.com/2011/03/07/opinion/07krugman.html?\\_r=1&scp=1&sq=hollowing%20out&st=cse](http://www.nytimes.com/2011/03/07/opinion/07krugman.html?_r=1&scp=1&sq=hollowing%20out&st=cse)

Krugman was citing the work of David Autor, Frank Levy and Richard Murnane

I saw that hollowing out first hand some years ago when I inadvertently pushed the wrong floor number in an elevator a corporate headquarters I was visiting in New York City. I stepped out into a totally empty floor. When I at last found the senior executive I

was looking for he explained, only half in jest, "Oh yes, that was middle management; we replaced them with computers."

In theory the elimination and exporting of routine jobs should result in innovation and a net increase in jobs elsewhere in the U.S. economy. At this moment it is not clear that this is happening.

But computerization is not the only force eliminating positions that college graduates once held. In addition, as Krugman points out, globalization and outsourcing export jobs, and not just low wage manufacturing jobs.

One example: the pharmaceutical firm GlaxoSmithKline now has 470 research and development workers in China.

Consolidation within companies and mergers and acquisitions among them also contribute to this hollowing out. "It's no longer true", *Krugman* concludes, "that having a college degree guarantees that you'll get a good job, and it's becoming less true with each passing decade."

These shifts in the economy pull the rug out from under a familiar argument on which many leaders of American higher education have long relied – if you go to college you will earn much more than if you stay away.

See for example the ACT Student web site: <http://www.actstudent.org/college/index.html>

That argument may hold up in the long run, but as many recent graduates will attest, "it ain't necessarily so."

"For college educated workers over age 25, unemployment is indeed lower than for other groups. But for college graduates under age 25, unemployment over the last year has averaged 9.7 percent and shows no sign of improvement." "The Economy Slows" editorial, *The New York Times*, May 2, 2011.

Casualties of the dismal job market may not be much impressed by an argument that does not match their experience and is technically fallacious.

For the argument to be valid in a strict sense one would need to compare the earnings of college graduates with the earnings of high school classmates with comparable GPAs and SATs who chose not to enter college but to go into the military, community service, other parts of the work force, etc.

For students still in college the bleak job market puts it on the line: If a college education promised a good job but can't deliver on the promise, why am I here? To answer that question higher education has to shift its focus, and articulate better reasons for attending college, including the long term advantages of developing the ability to think straight, solve problems, speak and write clearly and develop life-long habits of curiosity and continued learning. In a time of tempestuous change such higher level skills may be the best possible life preservers. Students today are, I believe, alert to this consideration. Many of them can also see the importance of studies that enrich life through literature, science, history and the arts. If the job market is bad for all fields, some of them have said to me, why shouldn't I study what I genuinely like?

Students may be more aware of these considerations than some spokespersons for higher education. That may explain why enrollments in the humanities and other liberal arts fields

have, so far at least, held up surprisingly well in economically difficult times. See Cheryl Ching and W. Robert Connor "Liberal Arts I: They Keep Chugging Along" Inside Higher Ed October 1, 2010

**Second, a skeptical public.** Skeptical minds are now everywhere, not localized as in the old saying, "Show me; I'm from Missouri." Today everybody is from Missouri, it seems. To be sure, the American public is not, by and large skeptical about going to college – it's still part of the American Dream, but people today want to see results. They want to do the numbers.

Some of those numbers are tuition and fees, now exceeding \$40,000 at some institutions. Sticker shock is leading some good students to assume they couldn't possibly go to top quality institutions. They can also be frightened away by the debts students accumulate in college.

See Tamar Lewin, "College Loans Weigh Heavily on Graduates" The New York Times April 12, 2011 p. 1. "Two-thirds of bachelor's degree recipients graduated with debt in 2008, compared with less than half in 1993. Last year, graduates who took out loans left college with an average of \$24,000 in debt."

But another number is no less troubling: On average 55.9 percent of full time students entering an American four year college graduate within six years. If you track those who transfer it's about 67%.

Peter Ewell of the National Center for Higher Education Management Systems pointed me to the useful web site:  
<http://www.higheredinfo.org/dbrowser/index.php?submeasure=27&year=2008&level=nation&mode=data&state=0>

Drop out rates are not often perceived as a problem at highly selective colleges, where more than ninety percent of entering students typically graduate within a reasonable period of time. But even in these settings it pays to ask who are the drop-outs and why do they leave.

The commonest explanation is finances, pure and simple. Despite all efforts, financial aid is not adequate. Fix that and all will be well.

That's part of the story. But there's more to it than that. Listen to one college drop-out:

*I dropped out ... after the first 6 months .... So why did I drop out? ... all of my working-class parents' savings were being spent on my college tuition. After six months, I couldn't see the value in it. I had no idea what I wanted to do with my life and no idea how college was going to help me figure it out. And here I was spending all of the money my parents had saved their entire life. So I decided to drop out and trust that it would all work out OK. It was pretty scary at the time, but looking back it was one of the best decisions I ever made.*

Care to guess who this drop-out was? It's one of these five drop-outs:

Paul Allen, dropped out of Washington State College

Michael Dell, dropped out of the Univ. of Texas at Austin

Bill Gates, dropped out of Harvard

Steve Jobs, dropped out of Reed College

Mark Zuckerberg, dropped out of Harvard

Other CEOs who dropped out of college or didn't go to college:  
<http://www.davidtan.org/famous-ceos-without-college-degrees/>

It is Steve Jobs, the most famous apple guy since Adam, in his 2005 commencement address at Stanford. His story reminds us that financial pressures become intolerable if one doesn't have a clear sense of what college is for.

So how well are colleges doing in responding to that question? Programs promising business success are clear and forthright.

Note, for example the publications of the former Trump University, now the Trump Entrepreneurial Institute which Amazon describes in these terms "Trump University books are practical, straightforward primers on the basics of doing business the Trump way-successfully." On the fate of the Trump University see:  
[http://www.huffingtonpost.com/2010/04/19/trump-university-no-longer\\_n\\_542469.html](http://www.huffingtonpost.com/2010/04/19/trump-university-no-longer_n_542469.html)

For comparison I looked at the web sites of some colleges and universities well regarded for their commitment to the liberal arts.

For a study of what college web sites reveal about student learning and assessment on campuses see N. Jankowski and J.P. Makela, Exploring the landscape: What institutional websites reveal about student learning outcomes activities, Urbana, IL, National Institute for Learning Outcomes Assessment (NILOA) (2010).  
<http://www.learningoutcomesassessment.org/documents/NILOAwebscanreport.pdf>

They tell all sorts of good things about the institution – athletic victories, alumni tours, financial aid, fabulous professors, the fun of student life, how to contribute money – everything except why what students will study is really important.

Words such as "vocation," "success," "satisfaction" and "human capital" are rarely used when liberal education is being presented. Why not reclaim such terms, problematize them, point to a deeper understanding of them as Socrates did for wealth or riches in his prayer to Pan at the end of Plato's Phaedrus? It would be especially appropriate for a college in the Christian tradition to reclaim the word "vocation."

To be sure, many colleges affirm learning goals similar to those promulgated by the Association of American Colleges and Universities.

The AAC&U ([www.aacu.org](http://www.aacu.org)) has many valuable publications on liberal education and related topics, including The LEAP Vision for Learning: Outcomes, Practices, Impact, and Employers' Views (2011) and a brochure for students What is a Liberal Education? And Why Is It Important to My Future (2011).

It is not clear, however, that these ambitious and robust learning goals are well understood by students, their parents, the general public, or indeed by faculty.

There is now a move to encourage aspiring entrepreneurs to drop out of college. A program called "Twenty under Twenty" funded by Peter Thiel, (not a drop out himself but a B.A. in Philosophy from Stanford), is offering up to \$100,000 to "foster the next generation of tech visionaries". See

[http://www.thielfoundation.org/index.php?option=com\\_content&view=article&id=14:the-thiel-fellowship-20-under-20&catid=1&Itemid=16](http://www.thielfoundation.org/index.php?option=com_content&view=article&id=14:the-thiel-fellowship-20-under-20&catid=1&Itemid=16) .

Without a strong sense of purpose, it's no surprise that many students are dropping out and many others are academically adrift. And here come some more numbers that skeptic from Missouri and elsewhere may find really troubling:

*Academically Adrift* is the title of a book by Richard Arum of NYU and Josipa Roksa of the University of Virginia, recently published by Chicago Press. It has been getting a lot of attention this spring. The *Chronicle of Higher Education* summarized the study by noting that the authors "tracked more than 2,300 students at 24 different institutions, including selective liberal-arts colleges and big land-grant universities, as well as historically black and Hispanic institutions. Forty-five percent of students showed no significant gain on the Collegiate Learning Assessment between freshman and sophomore year. And 36 percent didn't improve in a statistically significant way between their freshman and senior years. "

The data in the book come largely from the Collegiate Learning Assessment (CLA), a test of critical thinking based on students' written responses to real world decision making situations. Students participating in CLA have to make or break a case for one decision rather than another or defend their own position in an essay written under time constraints.

No one claims that the Collegiate Learning Assessment provides a perfect or comprehensive assessment of student learning. But CLA, unlike some "fill in the bubbles" tests, has "high face value", that is if you look at its questions you will probably say, "Yes, a college graduate ought to do well on such an exam, and a good college education should help them become better at it."

Arum and Roksa also note another distressing number – that students report that they spend an average twelve hours a week studying (p. 69).

The decline in hours spent studying coincides with a period of grade inflation, and its consequence distrust of the college transcript. Cf. Arum and Roksa p. 77

This and other findings in their study are broadly consistent with other analyses of student learning, most significantly with one conducted by the Center of Inquiry in the Liberal Arts at Wabash College. An article based on this study and soon to be published in *Change* magazine reports:

*Our results with a different sample of institutions, a different sample of students, and a different standardized measure of critical thinking closely parallel those of Arum and Roksa. We conclude that the findings of Arum and Roksa are not the artifact of an anomalous sample or instrument and need to be taken seriously.*

*Ernest T. Pascarella, Charles Blaich, Georgianna L. Martin, and Jana M. Hanson, "How Robust Are the Findings of Academically Adrift? The authors go on to say, "At the same time we also point out important limitations in drawing causal inferences from change scores without a control group of individuals who do not attend college."*

Some years ago the Wabash Center of began tracking the cognitive and personal growth of students at nineteen institutions, public and private, large and small, selective and not so selective. More than 17,000 students have been part of this study which uses a dozen well regarded instruments to look at such things as academic motivation, moral reasoning, and personal well-being. The study is ongoing but preliminary results, reported by the director of the Center, Charles Blaich, are now available.

From Gathering to Using Assessment Results is available free of charge on the web site of the National Institute for Learning Outcomes Assessment.

[http://learningoutcomesassessment.org/documents/Wabash\\_000.pdf](http://learningoutcomesassessment.org/documents/Wabash_000.pdf)

The findings point to modest gains in some areas and backsliding in others. The survey found that

- Moral Reasoning, Critical Thinking, Socially Responsible Leadership and Psychological Well-Being all showed gains over four years between 0.32 – 0.58 Standard Deviations (SDs). (It is not clear how much of these gains is attributable to college attendance and how much is due to maturation.)
- Slight gains or small declines were found in Diversity Awareness, Political and Social Involvement, and Openness to Diversity.
- Declines in measures of Positive Attitude Toward Literacy, Contribution to the Arts, and Contribution to the Sciences were found. The biggest decline was in Academic Motivation' from the first year to senior year it went down 0.37 SDs.

In today's skeptical climate Arum and Roksa's Academically Adrift and Blaich's Wabash National Study raise new questions about the overall quality of American higher education and frame the issue of rapidly increasing costs in a troubling way. If educational goals were robust and clear and if progress toward them demonstrable, higher education would be perceived for what it is a pearl worth a great price. The new evidence about student achievement, however, is likely to add fuel to the fires of doubt about American higher education.

**Third, the prevailing theory of change:** The now familiar phrase "the broken business model of higher education seems to me imprecise. It would be more revealing, I believe, to speak of a theory of change that has reached its boundary conditions. Over the past century colleges and universities have used certain assumptions that together constitute a theory of how student learning is improved. Although rarely made explicit and almost never subjected to rigorous evaluation of results, these assumptions have had powerful effects, but may now be reaching the limit of their effectiveness.



This theory of educational improvement is built on three primary assumptions:

First, that student learning will benefit from expanding the number of fields in which instruction is offered and the number of courses within each field

Second, that decreasing teaching load will enable faculty to increase their research 'productivity,' and also free their energies for more effective teaching.

Third, that students learn better in small classes, ideally one on one, rather than in larger settings.

This assumption reflects a foundational myth of American higher education, that the best learning comes about with an inspiring teacher such as Mark Hopkins of Williams at one end of a log and one student at the other end. So said Williams graduate and future US president James Garfield, in 1871: <http://net.educause.edu/ir/library/pdf/ERM02310.pdf>

The myth continues to appeal even though today the log has been replaced by high tech classrooms, labs, libraries and computer centers. It is driven in part by the ranking system used in the US News Best Colleges, which rewards colleges with a high percentage of classes under twenty and penalizes those with many classes enrolling fifty or more.

As a consequence student - faculty ratios must decrease, again with the expectation that good educational results will follow.

The results are not self evident. In the Boston area, for example, US News Best Colleges 2011 reports that the student faculty ratio is 13 to 1 at Boston College, 7 to 1 at Harvard and 3 to 1 at M.I.T. There is little relation, however, between these ratios and another figure US News emphasizes, "Overperformance / Underperformance" when predicted and actual graduation rates are compared. Boston College "overperforms" by 4, Harvard by 3, and M.I.T. "underperforms" by four percentage points. "Overperformance" is, of course, only one indicator of educational quality but the example warns against the uncritical reliance on student faculty ratios.

This theory of educational improvement is not to be scorned. It reflects the vast growth of knowledge over the past century. It is compatible with other ways of improving undergraduate education, including the encouragement of diversity and the establishment of programs such as African-American and Women's studies. It is also compatible with another theory, that if an institution admits only very bright students they will more or less automatically educate one another, provided of course they interact in relatively small classes. In addition, the theory's emphasis on low teaching loads should make possible more active forms of learning than large lectures provide. It may have resulted in increasing levels of student engagement, though I do not know of any firm evidence that this is so. It has certainly made life more livable for faculty members.

But there are complications. For example, the proliferation of courses and majors, not to mention centers and special programs, makes it difficult for a student to make wise selections, unless exceptionally effective advising mechanisms are devised. Faculty in turn may find their energies alternating between intensely specialized research and recurring, often acrimonious debates about which subject matters, if any, should be given priority in the curriculum.



The theory, moreover, certainly drives costs higher and higher, increasing, as we have seen, far more rapidly than family income. As costs go up so does the effort required to alleviate the problem by increasing endowment funds and annual support. The pattern seems unsustainable over the long run. The prevailing theory of change may already have run up against its boundary conditions. Even in the most affluent universities it is hard to imagine that the pattern of the last half century can be sustained for another fifty years.

Over the past fifty years tuition at Princeton University has increased from \$1,450 to over \$35,000, i.e., by a factor of more than 23. The increase has been accompanied by a large increase in student aid, made possible in turn by generous alumni support and the remarkable growth of the university's endowment (from a little over \$186 million in 1960 to \$14.4 billion in 2010, in other words 76 times . During the same period the CPI increased by a factor of approximately 7.) Extrapolate this pattern to 2060 and tuition will be over \$822,000 and the endowment over \$1 trillion.

Thus three systems seem to be converging into an imminent perfect storm -- economic problems, especially the hollowing out of the job market, troubling data about the results of higher education at a time of widespread skepticism, and a theory of educational improvement that seems to be reaching its limits of effectiveness. The combination is a perfect opportunity for those outside academia -- bureaucrats, politicians, and, yes, some foundation leaders as well -- to move in and demand that a new course for higher education be set. Ideas are already circulating about reducing the undergraduate course of study to three years, or providing a stripped-down, low cost alternative to the regular bachelor's degree. Many highly regarded private institutions will be able to resist such measures, but they may face renewed pressure to eliminate the tax exempt status of endowments and charitable contributions.

With these dangers in mind the leaders of many prominent organizations committed to the strengthening of higher education have formed the New Leadership Alliance for Student Learning and Accountability. See [www.newleadershipalliance.org](http://www.newleadershipalliance.org) - The premise underlying the Alliance's work is that the any educationally valid form of accountability must be grounded in the demonstrable improvement of student learning.

The distinctively American form of higher education, liberal education, and its central component, the humanities, may be especially at risk.

See Geoffrey Harpham [The Humanities and the Dream of America](#) (Chicago 2011), especially Chapter Six, "Melancholy in the Midst of Abundance: How America Invented the Humanities."

A perfect storm doesn't sound like good news. Yet, some light can break through even when such a storm seems imminent. In fact, a perfect storm might turn out to be good news, provided of course everyone doesn't hunker down below decks and hope that things will soon return to "normal".

**How a perfect storm can be good news:**

If that strategy won't work, what is to be done? There are, I believe, two possibilities. One starts with budgets, the other with students.

In a time of financial pressure it is not surprising to find administrators and governing boards focused on budgets. While some amenities can reasonably be cut the extent of the financial problems facing many institutions demands stronger measures. This leads to policies increasingly under discussion -- cut the cost of college by offering less and calling it more; cut the undergraduate degree from four years to three; eliminate foreign language and writing intensive courses because they are labor intensive and hence costly; substitute technology for face to face instruction whether it works or not; forget about active learning since it creates pressure for smaller classes; increase reliance on adjuncts; market the institution to students who can pay the freight; eliminate all classes with low enrollments, etc. This approach will almost inevitably lead to sacrificing educational quality for the delusory hope of cost containment. No thanks.

The other approach is to start with students and their engagement and learning. This means one must find out how to improve the educational results, without increasing costs. That, inevitably means using evidence more systematically than in the past, to determine what works and what doesn't. How would such an approach work? The starting point has to be clarity and specificity about what an institution wants its students to achieve, both in mastery of subject matter and in the development of long-lasting cognitive and personal capacities. The goals may vary from institution to institution and even from program to program, but in each case one needs educationally valid ways of seeing how well students are progressing toward those goals; only evidence can show what contributes to such progress and what doesn't. Then, and only then, does one turn to the budget and allocates resources where the evidence shows they will make the greatest contribution to strengthening student engagement and learning.

Such an approach entails a new theory of change and a new way of setting priorities at budget time. It deserves a fuller exposition than can be given here, but let's look at each of its components.

First, the purposes of education: These will vary from institution to institution, from college to college, program to program. But, as we have seen, students need to have a clear sense of the purpose of what they are asked to do in college -- not vague generalities or high-minded platitudes, but specific goals. These will, of course, include understanding in some depth of one or more fields of knowledge. But any truly robust sense of purpose will also aim at the development of long-lasting cognitive and personal capacities. Many colleges have already done this, spurred on in many cases by the LEAP initiative of the Association of American Colleges and Universities mentioned earlier in this presentation.

In a time of rapid and often unpredictable change any plausible answer to questions about the purpose of higher education must include the ways in which such an education helps develop the ability to cope with change. Mastery of the current state of knowledge in one or more fields is important, not least as a way of developing long lasting habits of mind and capacities such as understanding diverse cultures and different modes of thinking. The brains of students are growing during the traditional college-going years that make them ready for new kinds of thinking, asking big questions, and thinking through moral and ethical issues.

See "Watching Charlotte Climb: Little Steps Towards Big Questions, *Liberal Education*, vol. 93, no. 2 (Spring, 2007): 6-13. [www.aacu.org/liberaleducation/le-sp07/le-sp07\\_featureone.cfm](http://www.aacu.org/liberaleducation/le-sp07/le-sp07_featureone.cfm)

Along with the development of these capacities come others -- appreciation of literature, art and music, using evidence as well as the emotion, problem solving, critical thinking, post-formal reasoning, and the impulse to communicate effectively both in writing and in speech. In short, they are ready for a liberal education. As technological, economic, social change becomes more rapid, the importance of developing these long-lasting capacities becomes increasingly evident.

These capacities are not developed in a vacuum, but through engagement with specific subject matter, the more challenging the better.

It may be best then to assess capacities such as critical thinking within specific fields rather than with a one-size-fits-all approach. A project headed by Rachelle L. Brooks of Northwestern University is exploring how to ground the measurement of critical thinking within disciplines for Classics and Political Science.

Most faculty members, I believe, especially those who profess the liberal arts and sciences, believe that their fields make powerful contributions to such development. This claim, however, is not often made explicit, except in occasional bursts of high-minded rhetoric. Since students often fail to see how their daily work contributes to the development of important, long lasting abilities, it makes sense to make explicit how they connect to departmental and course requirements, including class assignments. If that connection is made clear, students will be more likely to engage more deeply with the subject matter of the liberal arts and sciences.

Second: Using evidence about student progress toward these goals: Good methods of assessing students mastery of a field of knowledge – including senior theses or other independent work, well-crafted comprehensive examinations, etc. as well as course grades – have long been available. Despite grade inflation, continue to have their utility. But until recently it has proved far more difficult to observe how students are developing the cognitive and personal capacities that are part of any robust undergraduate education.

In recent decades several promising forms of evidence have become available. Many institutions, for example, are now using electronic portfolios, which, when used systematically with carefully developed rubrics and criteria, can be very revealing about students' progress. Again, the Association of American Colleges and Universities has done much to assist colleges in designing and using such portfolios.

Since multiple forms of evidence are more reliable than any single form, portfolios can profitably be combined with nationally benchmarked tests and surveys, such as the National Survey of Student Engagement, the Collegiate Learning Assessment and the instruments used in the Wabash national Study.

The Wabash Study is co-ordinated with the Teagle Assessment Scholars, an advisory service that visits campuses to assist in the more effective use of assessment data in improving teaching: <http://www.liberalarts.wabash.edu/assessment-scholars/>

These instruments make it possible to see how students at one institution compare to those at peer institutions. The benefits reach far beyond having a well supported story to tell to accreditors, funders and others "from Missouri." They help focus energy and resources on areas where improvements in student learning are most likely to occur. Let us look more closely at this focusing.

Third, focus on what works, not what doesn't: Nationally benchmarked surveys have now produced large data bases, which make it possible to begin determining what educational practices are likely to produce the greatest benefits.

Data from the National Survey of Student Engagement have led to the identification of ten "high impact practices" that benefit students from many backgrounds and increase retention and graduation rates. They are:

FIRST-YEAR SEMINARS AND EXPERIENCES

COMMON INTELLECTUAL EXPERIENCES

LEARNING COMMUNITIES

WRITING-INTENSIVE COURSES

COLLABORATIVE ASSIGNMENTS AND PROJECTS

UNDERGRADUATE RESEARCH

DIVERSITY/GLOBAL LEARNING

SERVICE LEARNING, COMMUNITY-BASED LEARNING

INTERNSHIPS

CAPSTONE COURSES AND PROJECTS

See George D Kuh, High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter (Association of American Colleges and Universities, 2008)

The analysis of such data is still ongoing but has proceeded far enough that to make it possible to identify those practices that contribute strongly to student engagement, learning and their cognitive and personal development. Many of these practices are ones that are already widely used in the liberal arts and sciences. The challenge is not to come up with bright new ideas, but to focus energies on practices that have been shown to be most productive.

Findings from the Wabash National Study are particularly valuable in this regard because the study looks at a wide range of outcomes, from critical thinking to moral and ethical reasoning, to indicators of personal well-being and social and intellectual commitments. The study is now pointing to areas where efforts can best be focused.

Charles Blaich and Kathleen Wise called From Gathering to Using Assessment Results: Lessons from the Wabash National Study.

Preliminary results from the study show that while students in general often show either small gains or actual declines in many areas, there are important differences among institutions. (These seem not directly linked to prestige or selectivity.) Even greater are the differences within an institution – some students are showing dramatic gains while others are regressing. The differences seem to come primarily from certain things that the students encountered, or failed to encounter -- not small classes, congenial faculty members, a generally supportive and caring environment, but these four clusters:

1. Good Teaching and High-Quality Interactions with Faculty
2. Academic Challenge and High Expectations
3. Diversity Experiences
4. Higher-Order, Integrative, and Reflective Learning

This summary phraseology, I fear, does not show what is really path-breaking in this work. For that one needs to look closely at what's in and what's out of each of the clusters. In that way one can identify practices that work in a wide range of settings. Maybe they point to ways in which student learning can be dramatically improved on this campus. "Good Teaching," for example, does not mean getting a round of applause at the end of each lecture or high ratings on the typical course evaluation form, or chatting amiably with students about the Red Sox's prospects this season. Such conversations may actually do harm by giving the message that what the faculty member really cares about is baseball not the personal and intellectual growth of the student. In a similar way, writing assignments can have a negative effect if the papers are not returned promptly. Such delay sends the message that the faculty member does not really care about helping the student improve his or her writing.

Here are some of the Wabash Center's list of educational practices that really work:

- Check to see if students learned the material before moving on to new material
- Design clear explanations of their course or program goals and requirements
- Develop organized classes and presentations
- Provide clear explanations of course goals and requirements
- Engage in high-quality non-classroom interactions that influence students' growth, values, career aspirations, and interest in ideas
- Ensure that students work hard to prepare for their classes and are required to read and write a substantial amount of material
- Challenge students to analyze and synthesize information

Fourth, learning in the departmental major: The findings from the Wabash Study are a good starting point for the improvement of student learning on any campus, but their effectiveness depends to a large extent on what happens in the classroom and in the major. Let's digress briefly to look at this crucial area.

Evidence from various assessments of student learning is already raising important new questions about the effects of individual disciplines on students' cognitive and personal growth. Field content is unlikely to be the whole story -- just reading a novel, or memorizing an equation probably does not make a big difference, but the distinctive cognitive and pedagogical styles of various fields may have a significant effect -- positive or negative. Some provocative indicators are already at hand.

When it focuses on critical thinking, for example, one Midwestern liberal arts college confronted some wide ranging questions. Paul Sotheland at Kalamazoo College traced the changes in student performance on the CLA over four years, division by division, correcting for entering SAT or ACT scores. The largest gains were among majors in the foreign languages, the smallest among the natural sciences.

How was that to be explained? Since the CLA is based on student essays, perhaps the natural science majors simply had not written enough. There is, moreover, that writing long, analytical papers has a powerful effect on critical thinking and perhaps learning more generally. One wonders if at the other end of the spectrum foreign language majors wrote a great deal more than those in other divisions. Did they write more than the humanities and social science majors? Or is it that certain fields attract students who put effort into developing their problem solving, analytical reasoning and written communication abilities? Or are other factors involved? If so what are they and how do we maximize strengths and minimize weaknesses?

We don't know the answer to such questions as yet, but data provided by CLA make it possible to assess the gains in critical thinking ability by majors in various fields.

The material showed "Effect size" (measured in SDs) of gains on both Performance Task and Analytical Writing part of CLA, comparing first year to senior year by stated major field, corrected for entering SAT / ACT scores. In studying the material I excluded fields with fewer than 200 seniors taking the test and those with undeclared majors.

The biggest gains came in fields such as Sociology, Multi- and Interdisciplinary Studies, Foreign Languages, and Math, which tied with Business. The gains were in the range of 0.5 to 0.6 SDs

At the bottom came Economics, Engineering, Physical Sciences, Communications, Liberal and General Studies and Biological Sciences. The gains in these fields ranged from about 0.3 SDs to a little over 0.4 SDs.

The differences among the fields are not great, but are not to be dismissed when the average gains for students over four years is in the 0.5 SD range.

At first this list seemed counter-intuitive. I had expected that rigorous fields such as engineering and the natural sciences would show large gains in critical thinking. As in the Kalamazoo data, these fields seemed to lag in the development of critical thinking and related capacities.

Here is one hypothesis that I believe deserves testing. The CLA is a test of post-formal reasoning that is, it does not seek to find out if students know the one right answer to the problems it sets. On the contrary, it rewards the ability to consider the merits of alternative approaches. That suggests that students who develop the habit of considering alternative viewpoints, values and outcomes and regularly articulate and

weigh alternative possibilities may have an advantage when taking the CLA exam, and quite possibly in real life settings as well.

Foreign languages are, in any event, an interesting test case. Since the study of foreign languages constantly requires the consideration of alternative viewpoints and ways of expressing oneself, their study may provide particularly promising venues for the development of capacities that are very important in today's world. If we start with students and the need to strengthen their engagement and learning, foreign languages have a special claim on attention and resources. But if one starts with purely budgetary considerations, they are especially vulnerable.

Fifth, resource allocation: Does "using evidence" mean that resources would be taken away from fields such as Economics and Engineering where students seem to be making relatively small gains in some cognitive areas, and reallocated to those fields where greater gains appear, such as Sociology and Foreign Languages? Not necessarily, since the data just presented apply to only one cluster of outcomes (post-formal reasoning and expository writing) and are preliminary and in need of further refinement and analysis.

This example does, however, bring us to the nub of the matter since approach suggested here leads to the use of evidence about student engagement and learning as a major criterion for resource allocation.

See Jane V. Wellman, [Connecting the Dots Between Learning and Resources](http://learningoutcomesassessment.org/documents/Wellman.pdf), (National Institute for Learning Outcomes Assessment, 2010). This paper analyzes the relation between spending and student success, and examines existing research on this subject. <http://learningoutcomesassessment.org/documents/Wellman.pdf>

That is what differentiates this approach from older theories of change, where evidence of results was rarely sought and even more rarely used in any systematic way. The approach suggested here aims at iterative improvement based on the systematic use of evidence.

But, it will be objected, evidence about student learning is imperfect, especially in areas of cognitive and personal development. The instruments for collecting such evidence are themselves imperfect.

Of course! As any scholar knows, all evidence is imperfect. It is often incomplete, partial, or subject to biases of various sorts. That is why it is so important that faculty members take ownership of assessment on their campus. Since they are accustomed day in day out to work with problematic evidence, recognize its strengths and limits, observe convergences among multiple forms of evidence, and ultimately draw useful inferences from them. They know better than anyone outsider the academy how to use evidence to make educational judgments.

This means that faculty and like-minded administrators need to reclaim assessment from bureaucratic uses such as convincing accreditors that everything is just fine on campus, and use assessment data for the systematic improvement of student engagement and learning. Many projects are now under weigh doing jut that, for example a multi-year effort by the Council of Independent Colleges to use evidence from the Collegiate Learning Assessment to improve student learning.



For a sketch of how the CLA can invigorate classroom teaching see Marc Chun "Taking Teaching to (Performance) Task: Linking Pedagogy and Assessment Practices" Change, March / April 2010, pp. 22 –290, and <http://www.claintheclassroom.org/academy>

The steadily improving understanding of student learning can not only strengthen teaching, it makes possible better decisions about scarce resources, not least the use of faculty time. In the past it was tempting to try every seemingly bright idea, without any rigorous way of seeing if it really produced results. Now it is possible to use evidence about student learning when deciding how to use one's time or an institution's resources.

Faculty in the liberal arts and sciences have nothing to fear in this, and everything to gain. As scholars they know it is better to have more evidence than less. That is especially the case when decisions about scarce resources are made, and when it is so important to demonstrating to a skeptical public that higher education is really doing its job.

And liberal education? At every stage the approach suggested here points to ways to strengthen liberal education. Robust goals for undergraduate education, attention to the practices that are most conducive to those goals, the use of evidence to better understand the progress students are making and how they can improve – all these are opportunities to strengthen liberal education, not least in a tempestuous time. And the value of the core subject matter of a liberal education, the liberal arts and sciences, becomes more obvious as the pace and unpredictability of change increases. That value is now more demonstrable than at any time in the past.

Humanists sometimes hesitate to insist on this, fearing that any request for evidence of effectiveness will metamorphose into reliance on quantitative data in areas not amenable to such analysis. But the best way to prevent such abuse of evidence is to take the lead in using educationally appropriate means of assessment when available, and to help develop new measures when they are still lacking.

"Depend upon it, sir, when a man knows he is to be hanged in a fortnight, it concentrates his mind wonderfully." A perfect storm can do that as well, and to good advantage, if we are clever enough to put it to use.

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