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Seeking Evidence of Impact: Towards evidence-based practice

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seeking evidence of the impact of our technology-based innovations and practices in support of teaching and learning
“Does it work?”
“Does it work?”
“Does it work?”
“Does it work?”

<your project goes here>
“Does it work?”

Do the students learn “better”?  

Do the faculty teach “better”?  

Are the students more engaged?  

Are the student evaluations “better”?  

Is it “efficient”?  
So... do we

Know what we mean by “evidence”?

Know what we mean by “impact”?

Know how to best gather evidence?

Know how to best analyze impact?

Know how to have evidence improve practice?
Why collect evidence now?
pressure
Enormous fiscal pressures
Enormous fiscal pressures

Huge demand for HE

accountability
Standing call for evidence-based practice
1. Establishing and supporting a culture of evidence

“Given that college education is now one of the most important and expensive investments for American families, the call for accountability in higher education has intensified.”

“Colleges and universities... are recognizing the need for better systems that move beyond counting objects (such as computers, books, and so on) to measuring learning outcomes.”
What administrative leadership and support might be required?

What learning outcomes need to be tracked?

What groups on campus need to be represented during this process?

How translate the data into best practices?
“Most campus assessment activities... continue to be implemented as additions to the curriculum... rather than being integral to teaching and learning. [It] centers on “doing assessment” rather than on improving practice... Although firmly established in the mainstream by the year 2000, assessment as a movement is still striving for the cultural shift its original proponents had hoped for.”

Peter Ewell, pages 16–17
Pressures from unrelenting change
Unprecedented technology change

Major cultural change
October 4, 2010, 06:32 PM ET

Why McGraw-Hill Bought Blackboard

By Jeff Young

Today McGraw-Hill Education announced that it has bought a lecture-capture company called Tegrity Inc, putting the textbook publisher squarely in the education-software business. Officials say they made the move because of the importance of "user-generated content" as textbooks go digital.

McGraw-Hill had already been working closely with Tegrity—through a formal partnership that began in 2007. Last year the publisher started selling a series of textbooks called McGraw-Hill Connect, which integrates the Tegrity lecture-capture software with electronic versions of popular titles.

Tegrity, based in Santa Clara, Calif., says it has about 200 college customers. The companies would not reveal the cost of the sale or other details.

"Students place a high degree of value in the content the instructor offers—what's being presented in class, that's what's going to be on the exam," said Michael Berger, senior director of marketing for Tegrity. He added that the publisher now realizes the value of that content and wants to be able to better integrate it into the classroom.
Why Blackboard bought McGraw-Hill

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Higher ed under pressure
The paradigm is shifting?
## New paradigm

<table>
<thead>
<tr>
<th>Transmission model</th>
<th>Constructivist model</th>
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<td>Memorization facts</td>
<td>Understanding schemas</td>
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<td>Fixed roles</td>
<td>Mobile roles</td>
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<td>Individual work</td>
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<tr>
<td>Instructor brings content</td>
<td>Students bring content</td>
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<tr>
<td>Summative assessment</td>
<td>Formative assessment</td>
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<tr>
<td>One path</td>
<td>Multiple paths</td>
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</tbody>
</table>
The course today

- Formative assessment
- Summative assessment
- Content
- Website
- Lecture preparation
- Research methods
- Student project design
- Use of new media
- In-class pedagogy
- Syllabus
“Improvement in post-secondary education will require converting teaching from a ‘solo sport’ to a community-based research activity.”

–Herbert Simon
Heads Up

Why Universities Are Streamlining Their Curricula

By Gary A. Olson

States can no longer afford unchecked expansion of academic programs without a commensurate reduction of the weak ones.
Students starting school this year may be part of the last generation for which 'going to college' means packing up, getting a dorm room and listening to tenured professors.

Undergraduate education is on the verge of a radical reordering. Colleges, like newspapers, will be torn apart by new ways of sharing information enabled by the Internet. The business model that sustained private U.S. colleges cannot survive.

“The typical 2030 faculty will likely be a collection of adjuncts alone in their apartments, using recycled syllabuses and administering multiple-choice tests from afar.”
Traditional higher education is left with only one choice: innovate in order to stay relevant.

Openness is a fundamental value underlying significant changes in society and is a prerequisite to changes institutions of higher education need to make in order to remain relevant to the society in which they exist. There are a number of ways institutions can be more open, including programs of open sharing of educational materials. Individual faculty can also choose to be more open without waiting for institutional programs. Increasing degrees of openness in society coupled with innovations in business strategy like dynamic specialization are enabling radical experiments in higher education and exerting increasing competitive pressure on conventional higher education institutions. No single response to the changes in the supersystem of higher education
The Record Industry's Decline

Record sales are tanking, and there's no hope in sight: How it all went wrong

BRIAN HIATT AND EVAN SERPICK  Posted Jun 28, 2007 2:29 PM
Don’t we already know what works?
The No Significant Difference (NSD) Debate
“...there are no learning benefits to be gained from employing any specific medium to deliver instruction.”

1990s

“There are 355 research reports, summaries, and papers cited in which no significance difference was reported between the variables compared.”
So Russell:

“Technology is not neutral…”

“The truth [is]... that students are not alike.”

“...the real challenge facing educators today is identifying the student characteristics and matching them with the appropriate technologies.”

So Russell:

“The value of interactivity—especially synchronous interactivity—according to comparative research is, at best, suspect.”

So Russell:

“There no longer is any doubt that the technology used to deliver instruction will not impact the learning for better or for worse.”

“The confounding factor here is that each medium consists of many attributes that may affect the value of the medium’s instructional impact.”

“To credit or blame the delivery medium for learning ignores the effectiveness of the instructional design choices made while creating a learning event.”

Educause Quarterly, No. 2, 2001
online!  F2F!

hi tech!  low tech!

formal!  informal!

X!  not X!
Less filling!

Tastes great!
The latest installment
Evaluation of Evidence-Based Practices in Online Learning
A Meta-Analysis and Review of Online Learning Studies

released August 2009
“... on average, students in online learning conditions performed better than those receiving face-to-face instruction.”
Effectiveness of Fully Online Courses for College Students: Response to a Department of Education Meta-Analysis

released July 2010
“the ... report does not present evidence that fully online delivery produces superior learning outcomes for typical college courses, particularly among low-income and academically underprepared students.”
“...we find modest evidence that live-only instruction dominates Internet instruction.”

http://papers.nber.org/papers/w16089
“Students attending classes in... technology-enhanced learning spaces exceeded final grade expectations... suggesting strongly that features of the spaces contributed to their learning.”

“Different learning environments affect teaching-learning activities even when instructors attempt to hold these activities constant.”
online! F2F!
It’s perplexing...
Distraction factors

aka: “X is making us stupid”
“Far from making us stupid, these technologies are the only things that will keep us smart.”
“... home computer technology is associated with modest but statistically significant and persistent negative impacts on student math and reading test scores”
When I was 12 years old, I read most of the plays of George Bernard Shaw. That's not to say that I understood the plays of George Bernard Shaw, or even that I passionately loved them. They just happened to be around the
An Ugly Toll of Technology: Impatience and Forgetfulness

By TARA PARKER-POPE
Published: June 6, 2010

Are your Facebook friends more interesting than those you have in real life?

Well

Share your thoughts on this column at the Well blog.

Has high-speed Internet made you impatient with slow-speed children?

Do you sometimes think about reaching for the fast-forward button, only to realize that life does not come with a remote control?

If you answered yes to any of those questions, exposure to technology may be slowly reshaping your personality. Some experts believe
Evidence-based practice
Perspectives from CNI

- Clear goal
- Methods
- Informal aspects of learning
Clear goal - “So What?”

- Are you looking at impact:
  - To contribute to a campus program, e.g. accreditation review, Provost’s initiative?
  - What could you demonstrate that would have genuine importance?
  - Can you articulate your goal clearly and is it compelling?
  - Can you operationalize your goal?

- What matters to your institution?
Methods

- Qualitative as well as quantitative - triangulation
- Understand what you will do with the data, how you will report it
- Pre-test your instruments
- Work with assessment experts
Informal aspects of learning

- Students spend more time learning outside of class than inside a classroom
- Libraries and computer labs are key informal learning venues
What questions might address the impact of learning spaces?

- Do learning commons enable students to accomplish different types of course projects?
- Do learning spaces encourage more time spent on studying?
- Do learning spaces have a role in student retention?
- Do learning spaces have a role in developing a sense of community?
Help us identify:

- Good questions
- Useful and efficient methodologies
- Partners
- Exemplars
- Key studies
Questions for discussion

What challenges do you face with respect to gathering evidence of impact?

What can the ELI program do to help you meet those challenges?
Challenges: Responses from CNI Attendees

- Understanding privacy issues
- Pressure on grant-funded projects to demonstrate impact on student learning – how to measure in very granular form – how to demonstrate that one factor has an impact on learning
- Long-term impact of what students learn – very difficult to measure but a more accurate reflection of learning
Challenges: Responses from CNI Attendees

- Comparing different types of collections or activities; how to compare across entities; how to develop consistent methodologies that would work in multiple environments

- Problems are hard to address on grand scale; consider tackling smaller (humbler) measures like hours of engagement outside of class; identify aspects, activities that you’d like students to do more of
Challenges: Responses from CNI Attendees

- What are the metrics that our own universities are using to benchmark against other universities, i.e. retention, US News factors; research rankings (NRC)
- Link to Next Generation Learning Challenges, relating to US government challenges
- Learn from sports field – statistics and gaming industry in terms of engagement
What can ELI do to help?
Responses from CNI Attendees

- Make sure that folks from different types of institutions are engaged in this initiative
- If some outcomes can be packaged into toolkits including things like checklists, that would be useful; whitepapers less useful
- Practical is good
What can ELI do to help?

Responses from CNI Attendees

- Is there a grand narrative or direction from the ELI perspective, for ex. that good instructional design leads to better learning?
- Make sure that the project doesn’t result in a sense that “that’s all there is” if scaled back too much
- Longitudinal studies – works well with overall philosophy of medical education and lifelong learning
Our current alignment
Most important indicators of impact?
Select 3 most important:

- Reports: 60%
- Satisfaction: 55%
- Outcomes: 41%
- Teaching changes: 40%
- Engagement: 32%
- Grades: 13%
- Retention; graduation: 12%
- Cost/efficiency: 12%
What’s hardest?
Where to begin: 3.85
How best to measure: 3.86
Effective analysis: 3.07
Gathering evidence: 2.77
Communicating results: 1.9

scale 1 to 5
Methods routinely used
check all that apply
Consensus on “evidence” and “impact”? 
<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>TO SOME EXTENT</th>
<th>NO</th>
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<tbody>
<tr>
<td>Within my campus unit</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Among the faculty</td>
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<td></td>
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<tr>
<td>Among support staff</td>
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Challenges
understanding the research questions
what counts as evidence (what data should I collect?)
dependence on poor data sources
money; funding for analyst position
lack of expertise
how do learning spaces factor into this?
creating a culture of assessment
What should ELI SEI do?
Build Community

- community of practice
- share practices
- share data/evidence
Provide Tools

templates; sample surveys

case study collection

road map

deliver “legos”

ways to help faculty use data

how to best communicate results
Provide Services

- review publications
- recommended tool set
- do it all for free or low cost
- create referral network
- PD opportunities
- webinars, workshops
- external review service
What will ELI SEI do?

VOX POPULI
VOX DEI
Community

- ELI Annual Meetings:
  - 2011: subtheme
  - 2012: major theme
- ELI Focus Sessions 2011
  - Spring (online; April 13-14)
  - Fall?
- EDUCAUSE regionals

- Workshops
  - @ ELI 2010 (4)
  - @ ELI 2012
  - @ E 2011
  - ELI online
  - @ NERCOMP

- Webinars
  - Jan 10: Analytics
Community (2)

- Presentations
  - DET/CHE Dec 2010
  - ECAR Dec 2010
  - CNI Dec 2010
  - League for Innovation March 2011
  - IU Fort Wayne April 2011

- Publications
  - E Quarterly
  - E Review
  - @ E 2011
  - ELI online
  - @ NERCOMP
  - ELI white papers, briefs
  - 7 Things series
Community (3)

- EDUCAUSE 2011
  - Pre-conference workshops
  - CIO track
  - Teaching & Learning track
Tools and Services

- Case studies library / series
- White papers
- Briefs
- Tool exemplars and templates

- Workshops & seminars
  - ELI Online (how-to’s)
  - NERCOMP June 2011
  - ELI 2011 Annual Meeting (3)
  - EDUCAUSE 2011 conference
WE WANT YOU!
Take the survey!

Have colleagues take the survey!

http://www.surveymonkey.com/seisurvey
http://www.educause.edu/ELI/SEI

As the pace of change and the support for technology integration grow, questions about what provides the best information and what learning changes and improvements have taken place are common. In many institutions, the themes of collaboration, participation, and openness have greatly changed the teaching and learning landscape. In light of these changes, what new methods for collecting evidence of impact might need to be developed?

Established practices and good data have made inroads in these areas. Often, however, they are scattered, disconnected, and at times even in competition, making it challenging for the teaching and learning community to discover and compare their merits. Bringing these together can provide a more holistic view of the overall picture.
Resources

Read about the latest research and community websites, reports, and other resources. Here you will find white papers, articles, and contact forms for new information.

Special thanks to Kristin Thomas and Hazel Son for their assistance in developing the resource list.

<table>
<thead>
<tr>
<th>Books</th>
<th>Articles</th>
<th>Websites</th>
<th>Research/Reports</th>
<th>White Papers</th>
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</table>

This revised and greatly expanded edition of the 1988 handbook offers teachers at all levels how-to advice on classroom assessment, including what classroom assessment entails and how it works, and also how to plan, implement, and analyze assessment projects. Twelve case studies that detail the real-life classroom experiences of teachers carrying out successful classroom assessment projects are featured. It also includes fifty classroom assessment techniques, step-by-step procedures for administering the techniques, and how to analyze your data.

What makes a great teacher great? Who are the professors students remember long after graduation? This book, the conclusion of a 15-year study of nearly a hundred college teachers in a wide variety of fields and universities, offers valuable answers for all educators. The short answer is—it’s not what teachers do, it’s what they understand. Lesson plans and lecture notes matter less than the special way teachers comprehend the subject and value human learning. Whether historians or physicists, in El Paso or St. Paul, the best teachers know their subjects inside and out—but they also know how to engage and challenge students and to provoke impassioned responses. Most of all, they believe two things fervently: that teaching matters and that students can learn.

Designed to be used by college faculty members in groups and in workshops, this volume details a collaborative process for investigating teaching and learning issues. Discussion uses problem-based discussion, integrating teachers’ experience with recent research and theory on learning. It also provides assessment and research projects that can be used in the classroom.

This book explores values, purposes, methods, and theories as they relate to innovation, technology, and educational evaluation. It
Opportunities for Engagement

The program will consist of a variety of online and face-to-face opportunities: meetings, workshops, focus sessions, and webinars—all united around the theme of seeking evidence of impact. Check back here for the ongoing schedule of activities.

- ELI Web Seminars in the latter half of 2010 and early 2011.
- **ELI 2011 Annual Meeting.** The call for proposals for the ELI Annual Meeting (February 14–16, Washington, D.C.) will explicitly request proposals on the theme of gathering evidence of impact. A portion of the annual meeting’s sessions and activities will be devoted to initiating the exploration of this theme.
- ELI 2011 Spring Focus Session in April 2011, a two-day online conference devoted entirely to the theme of gathering evidence of impact. Leading practitioners will present on effective practices, and institutions implementing these methods will report on their results.
- ELI 2012 Annual Meeting in Austin, Texas, will include presentations and discussions on the evidence of impact theme.

Get Involved and Contribute

The success of the Evidence of Impact initiative is highly dependent on collecting best practices. Do you know of effective practices in this area you’d like to share? Tell us about it and get involved!
Send me email

mbrown@educause.edu

resource suggestions
example projects
ways you’d like to help

what you need
exemplary practitioners
come to ELI events

anything to help SEI help you and colleagues
Questions?

Comments?
Thank you!

mbrown@educause.edu