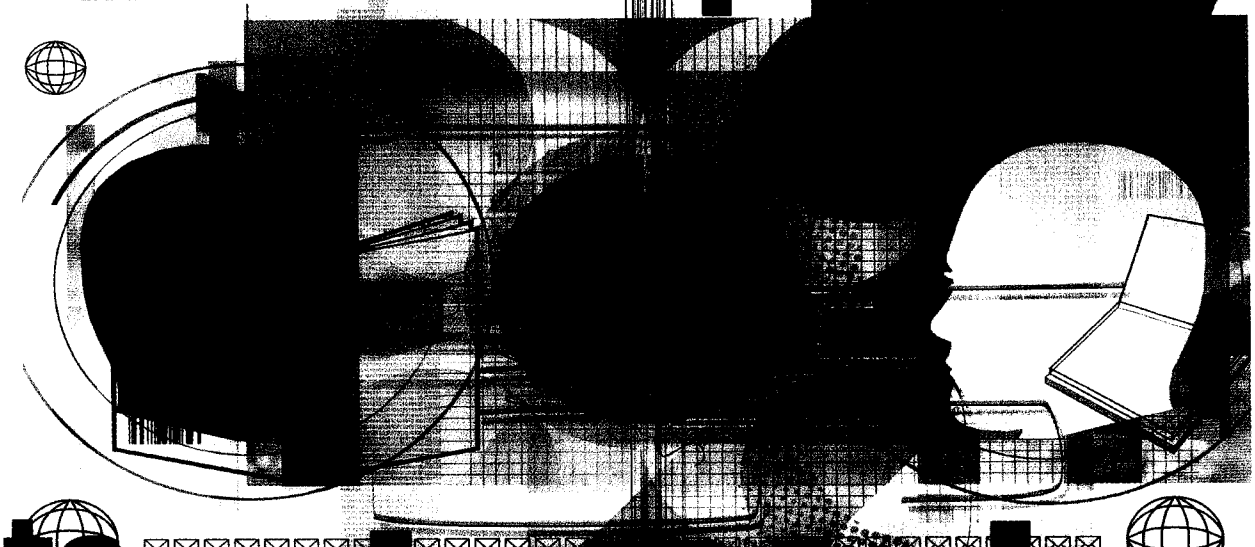
What Happened to e-Learning and Why?



A critical report on e-learning innovation has sparked debate on both sides of the issue.

BY REBECCA SAUSNER

One way academics know they're breaking new ground with their research is by the number of speaking invitations they receive after publication. Another gauge might be the level of vitriol their critics muster both in rebuttal papers, and these days, on academic listservs and bulletin boards.

By both these measures, "Thwarted Innovation: What Happened to e-Learning and Why," written by Robert Zemsky of the **University of Pennsylvania** and William F. Massy, professor emeritus at **Stanford University**, has been the academic equivalent of an earthquake since its publication in June.

- "It's almost as if Bill and Bob are historians writing about how the promise of the American West, after several hundred years, turned out to consist largely of LA freeways and Las Vegas casinos," wrote Carol A. Twigg, executive director of the Center for Academic Transformation at **Rensselaer Polytechnic Institute** (N.Y.), in her newsletter, "The Learning MarketSpace."
- "By analogy, we feel that they have damned the truck that is taking sustenance to the hungry because the truck doesn't work well enough!" wrote John Bourne and his colleagues at Sloan-C, a consortium of institutions and organizations committed to quality online education.
- "Such a caricature of ivory tower (research). (The study) contradicts itself throughout the piece, doesn't understand its own historical perspective and lazily relies on one private sector pundit for 15 pages of criticism," wrote Stephen Cervieri, director of sales and marketing for Distance Learning Inc. (DLI).

What's all the fuss about? "Thwarted Innovation" makes the case that e-learning hasn't lived up to the hype—that growth isn't what was predicted; that the creation and adoption of learning technology has stalled; and that, despite the availability of new

technology, no major changes have occurred in the way teaching happens in higher education.

Some of these points are true, for sure, given the realities of e-learning today. But, critics say, the authors are too eager to declare a bust considering the number of students enrolled in online degree programs and the multitude of successful ventures and cutting-edge experiments going on in the arena.

Thwarted, or Just Plodding?

Massy and Zemsky came up with a neat breakdown of the innovations made possible by e-learning technologies, allowing any institution to easily gauge where they are on the continuum. They posit that the first phase of integrating e-learning would be faculty embrace of course enhancement applications, like the use of PowerPoint to create lecture notes or using e-mail to contact students. Nearly all IHEs have reached this point, with only the diehards resisting these innovations.

The second phase would be the use of course management platforms, like WebCT and Blackboard. Just about everyone is here also, with about 97 percent of two- and four-year schools using some type of course management system, according to Market Data Retrieval's 2004 survey of 5,500 IHEs.

The third step, and this is where the "thwarted" in "Thwarted Innovation" comes in, would be the creation and use of subject-specific learning objects within a course, such as financial simulations in a business class, or lab simulations in a science class. Everyone acknowledges that use of these objects, such as are available from Multimedia Educational Resource for Learning and Online Training (MERLOT), is fairly rare.

The fourth stage of innovation would be the total redesign of existing courses, away from education as usual to a more interactive, learner-oriented model, that both improves learning outcomes and saves money. Despite some evidence to the contrary, Massy and Zemsky argue that this isn't happening in American IHEs.

For most of the conclusions and assumptions in the nearly 100-page-long "Thwarted Innovation," there seem to be critics. Many of the complaints about the study are definition problems that have yet to be resolved: What is e-learning vs. distance learning, vs. online education, etc.? In their paper, Massy and Zemsky aren't just talking about internet-based distance education, what Sloan-C calls asynchronous learning networks; they're also talking about the use of technology in traditional on-campus classes and corporate education environments.

"The bottom line we've come to is we're really talking past each other," says John Bourne, executive director of Sloan-C and editor of the *Journal of Asynchronous Learning Networks*.

The other major complaints center on the research methodology. Rather than survey hundreds of IHEs for their report, Massy and Zemsky instead embarked on a sort of anthropological study in which they interviewed faculty and administrators at six schools several times over a period of 15 months.

"The six schools selected for the study are not a representative sample by anyone's measure," wrote one critic on Sloan-C's listserv.

The last major tenet of the criticism—and one that Massy and Zemsky might agree with—is that it's just too soon to evaluate the success of e-learning, or dub it a bust.

"What are they expecting? I have a 13-month-old baby, I'm not ranting and raving over why he can't jump rope," says Cervieri of DLI.

Reality Check

The reality about the adoption of internet-based distance education is probably somewhere in between what the two sides would assert. Sloan-C forecasts that there will be some 2 million people taking online courses this fall; **University of Phoenix** alone has 109,000. Independent researchers at Market Data Retrieval found that 55 percent of the 5,500 accredited two- and four-year IHEs surveyed offer accredited degrees online, only a slight increase from the 54 percent in 2003; 47 percent offered degrees online in 2002. So though many new students are taking internet-based courses, the number of schools adding programs has slowed significantly.

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—Carol Twigg, "The Learning MarketSpace"

"Whether this is a one-year stall or an overall flattening out, I think it's just too early to tell," says Kathleen Brantley of Market Data Retrieval.

The other truth raised in "Thwarted Innovation" is that most online education offerings are flat—they're still primarily based on text and pictures, with little use of audio, video, graphics, simulations, or even asynchronous discussions. Once professors figured out how to load their existing notes and lectures onto Blackboard or WebCT, they stopped innovating.

A corollary to this is that many faculty members don't want to see distance education, e-learning, or some hybrid of these take hold. Many are understandably skeptical that this model can equal or exceed the success of traditional classroom learning. Others are unwilling or unable to change how they teach to make use of technology, or don't have the institution support to do so.

Carol Twigg found this out after helping administer a $200,000 Pew

Foundation grant to redesign an introductory-level course at Rensselaer Polytechnic to take advantage of learning technology, improve learning outcomes, and save money. After the redesigned course was successfully implemented with 3,600 students, showing cost savings and better learning, faculty complained that they preferred the lecture-based model. As a result, the school opted to give students a choice between formats, with about half choosing each.

"These (post-redesign) changes suggest a lack of departmental and institutional commitment to reducing costs and increasing student success," Twigg wrote in an article examining the results of 10 such redesign grants.

UMass Online has generated $14 million in revenue.

But it's Twigg's work on redesign (see below) that finally acknowledges the elephant in the room when it comes to e-learning and distance education: the money. Recent high-profile successes like **UMass Online** have turned their distance ed programs into moneymakers (UMass says it generated $14 million in online revenue last academic year, with 90 percent of that pumped back into the traditional campus system). But at many schools distance education is simply bolted to the outside of the existing educational structure, Twigg says. The result is often a black hole that eats money with little to show in the way of increased learning or cost savings.

"In that situation, technology becomes part of the problem of cost containment rather than part of the solution," Twigg says.

Redesign Road Map

Massy and Zemsky are correct in advising that we watch the leading edge of e-learning to see where the lagging center will be in a few years. They also say that redesigning existing courses is necessary in order to fulfill the promises of e-learning. What they miss is that this process has been happening on a small scale since 1999, and is being replicated by more and more programs each year.

With an $8.8 million grant from the Pew Charitable Trust, Twigg launched the Program in Course Redesign at Rensselaer Polytechnic Institute in 1999. Since then some 30 IHEs have been given grants of $200,000 each to redesign a large-enrollment introductory course at their schools. Conducted in three rounds of 10 schools each, the IHEs were given flexibility as to how the courses were redesigned—some became fully online courses, others were hybrids that met in person and online, and others retained the traditional course structure but added technology-based activities outside of class. The grant required each institution to develop a detailed cost analysis of both the traditional and redesigned formats, as well as to map educational outcomes of each version.

"If you think about every other industry, in the country, in the world, technology is seen as a way to contain costs," Twigg says. "We wanted to show people that you can get a return on your information technology investment, and use it as a way to contain costs and improve learning."

Some highlights of the results from the second round of 10 schools, which completed their projects in July 2002:

- The schools averaged a 38 percent cost reduction, with collective savings of about $1 million for the 10 courses.

Redesign at Florida Gulf Coast University

Florida Gulf Coast University opened in 1997 with a strong bias toward using instructional technology, and the staff dollars to support this approach. The school was much more successful than anticipated in attracting first- and second-year students, and soon found the demand for a required course, "Understanding Visual and Performing Arts," exceeded its supply of qualified instructors. After adding sections and instructors, they realized the course was adrift, with each instructor teaching it differently and few meeting stated learning goals.

If something weren't done to remedy the situation, the course would be eliminated from the required curriculum.

Faced with this reality, administrators applied for a Pew Charitable Trust grant to redesign the course, hoping that Carol Twigg's methodology would help them save money and improve the learning outcomes of the class.

After the redesign, the course maintained several of its most important components, says Jim Wohlpart, chair of the Humanities and Arts division at FGCU.

First, students still had to complete four essays based on their experience viewing works of art in the community. But a software program grades the two shorter essays; the longer essays are graded by preceptors, usually graduate students or former students trained to do the work.

Students were also required to take part in discussions regarding art works, though these discussions now took place on web boards moderated by preceptors. They'd also have to take a final exam, also available online. One faculty member now leads the entire course, which includes more than 1,000 students.

The results: The school was able to save the course because it is now meeting the established learning outcomes. And costs have been cut from an average of $129 per student to $62 in the redesigned format.

"This redesign project has really blown everybody out of the water," Wohlpart says.

But that doesn't mean he thinks all courses should be handled this way.

"I'm too much of a traditionalist. If we could have staffed the classes, paid for them, and had really good instruction, that would have been a better experience," he says. "I think we need to use technology carefully and appropriately. In this case we would have lost the course if we didn't do the redesign."

- Nine of the 10 reported improved learning outcomes, while one reported no significant difference.
- Six of the 10 projects showed improvement in course completion rates; two reported no change; two reported problems with students dropping or withdrawing from the class.

(For detailed analysis of each project, see www.center.rpi.edu. Also, see the sidebar on the redesign project at Florida Gulf State University.)

As Twigg and her colleagues refine their redesign model, they're finding it's fairly easy to replicate. Organizations in states from Hawaii on east are now using the Rensselaer model to encourage course redesign with their states. The Ohio Learning Network is giving out eight to 10 grants of $40,000 each to assist IHEs in redesigning courses, based on Twigg's approach.

"Content constantly needs to be redeveloped," says Kate Carey, executive director of the Ohio Learning Network. "What we're doing is trying to put some dollars on the street for institutions to look specifically at large-enrollment courses and make changes in content using technology that results in higher, better learning, and lower costs."

> **"I think those who peer skeptically at e-learning also have to back off and give it some time."**
> *--Robert Zemsky, Univ. of Pennsylvania*

Object Lessons

The other area that Massy and Zemsky believe innovation has been thwarted is in the use of learning objects, like simulations, audio or video, to enhance learning. They're right—there's not much on the market for IHEs to buy; building these applications is costly; and freeware available on sites like MERLOT is not a comprehensive solution. But the supply of these types of programs is expanding, as publishers, tech vendors, and even schools see a market for the products.

One promising source: The **Wharton School at the University of Pennsylvania** received $10 million from alumnus Alfred P. West Jr. in 2001 to build a "learning lab" where the types of course objects Massy and Zemsky talk about are created. By the end of this academic year Wharton expects to have 20 different homegrown applications that allow students to experience market simulations in areas such as finance, negotiations, marketing, and forecasting.

A Wharton student survey has found that 87 percent of students said the tools significantly enhanced (21 percent) or enhanced (66 percent) learning in class; and 79 percent felt the simulations were more effective than lectures in maintaining their attention and engagement.

Buoyed by student and faculty reception of the web-based learning tools, Wharton struck a deal with Pearson Addison Wesley to package and sell the applications to other IHEs around the world.

"Wharton was very focused on looking at new ways of learning. That's what our dean wanted to do; that's what Wharton has been known for—innovation in learning," says CIO Deirdre Woods.

The Next Wave

Learning from these successful e-learning models is one way to help fulfill the promise of distance education and educational technology. Other developments that Zemsky, Massy, Twigg, and other experts consider critical:

1. A dominant design of quality e-learning and distance education methodology must emerge, based on successful learning outcomes and proven cost efficiencies. Much like PowerPoint has become a dominant design in the first level of education technology innovation, and Blackboard and WebCT in the second, there needs to be research-based consensus on what makes good e-learning and distance learning.

2. Technology must be used to go beyond automating what's already possible. This means faculty must go beyond PowerPoint and Blackboard and utilize things like audio, video, asynchronous discussions, simulations, etc.

3. Before (1) and (2) can be fully realized, faculty and administration must commit to the idea that higher education needs to be improved, Massy and Zemsky believe. Within this, they must also focus on what students want when it comes to e-learning and distance education.

Maybe the biggest problem with "Thwarted Innovation: What Happened to e-Learning and Why" is just its use of the past tense. Perhaps if Massy and Zemsky had titled it "What's Happening in e-Learning and Why," their ideas would have been met with fewer rebuttals. Zemsky acknowledges that perhaps the whole issue just needs time.

"I think those who peer skeptically at e-learning also have to back off and give it some breathing room," he says. "If you've got somebody watching your every movement, you tend not to be very graceful when you move." U

Resources

Alfred West Jr. Learning Lab at Wharton
www.wharton.upenn.edu/**learning**

Distance Learning Inc.
www.dli.com

The Learning MarketSpace
www.center.rpi.edu

Market Data Retreival
www.schooldata.com

Multimedia Educational Resource for Learning and Online Training
www.merlot.org

Ohio Learning Network
www.oln.org

Sloan Consortium
www.sloan-c.org

University of Massachusetts Online
www.umassonline.net