



**PICTURESQUE PLAZA.** Harvard Law School's Wasserstein Caspersen Clinical center is pedestrian-friendly along Massachusetts Avenue, with varied landscaping and views into classrooms. To the rear, a second-floor landscaped courtyard and green roof create an elevated quad: an oasis for conversation or lunch, for students to indulge in sun-and-study biathlons, and for small functions. The green spaces also helped the building secure a LEED Gold certification for energy and environmental design.

## Talking about Teaching

EVER SINCE the Harvard Initiative for Learning and Teaching (HILT) was launched in late 2011, it has catalyzed conversation on cognition and learning, course design, classroom spaces, educational technology, and assessment through a series of innovation grants to faculty members and an annual symposium. Its second symposium, on May 8—attended by several deans among the audience of hundreds—suggested the variety and reach of educational experiments under way in every Harvard school. The edX online venture, formed in May 2012, has ridden a national wave of interest in massive open online courses (MOOCs), but HILT, operating less visibly, likely engages more

faculty members and students in enhancing on-campus education.

HILT director Erin Driver-Linn, the associate provost for institutional research, introduced the conference theme: what are the essentials of good teaching and learning at a time of disruption and innovation for universities? Innovation may seem risky and time-consuming, but “Education with inert ideas,” she said (citing Alfred North Whitehead’s 1916 essay, “The Aims of Education”), “is not only useless: it is, above all things, harmful.”

Driver-Linn discerned “a spirit of innovation” at Harvard, ranging from edX to new curricular and course offerings, and in the 50 or so HILT-supported faculty experiments. The aim was “innovation informed by evaluation and grounded in practice”—and shaped by a commitment to analytical assessment and by the institution’s educational culture.

Provost Alan Garber, alluding to “a time of turmoil and uncertainty in higher education,” with threats to federal research funding, tuition, and other revenues, said universities had to take control of their own destinies by posing questions to

### I N T H I S I S S U E

- |    |                           |    |                   |
|----|---------------------------|----|-------------------|
| 50 | Harvard Portrait          | 56 | University People |
| 50 | Online Overdrive          | 58 | The Undergraduate |
| 51 | Governance at Issue       | 59 | Brevia            |
| 52 | E-mail Update             | 62 | Sports            |
| 53 | Yesterday’s News          | 63 | Alumni            |
| 54 | Systematic Drug Discovery | 68 | The College Pump  |
| 55 | “The Girls of HBS”        |    |                   |

themselves. HILT had enabled Harvard to “think in new ways about how we teach and how we learn,” and the faculty had demonstrated its readiness not only to “ask hard questions but to experiment.” As the HarvardX leader, Garber underscored that online innovations were *not* a diversion from classroom education (like his own freshman seminar). “The future is not really about *online* education,” he said. “It is about *rethinking* education” to improve learning outcomes.

• *The Science of Learning.* The three psychologists on the symposium’s first panel addressed cognition and learning, emphasizing the importance of *practice and cumulative engagement* with a subject in order to master it, and of *perspective* on the part of teachers who need to know what their students *don’t* know in order to help them learn.

Daniel T. Willingham, Ph.D. ’90, professor of psychology at the University of Virginia, explained that critical thinking—the desired outcome of so much learning and education—“is hard, it’s taxing...It’s not obvious that it’s going to pay off.” The best way to inculcate such thinking, he said, is lots of practice, which makes this a “curricular issue”: looking beyond one course to the deep problems in a discipline, and devising a *curriculum* that cumulatively teaches students how to approach such problems.

Katherine Rawson, associate professor of psychology at Kent State University, who studies strategies that promote durable learning, noted that as students progress through their education, they are asked to learn ever more content, and to learn more outside the classroom—but receive less guidance about *how* to learn. Common study techniques (rereading or highlighting texts) are the *least* effective, she said. The *most* effective ones—self-administered testing (for example, she joked, via the “f” word—flash cards) and other forms of practice—are used least. She detailed the efficacy of “successive relearning” of foundational knowledge: drilling oneself on new foreign-language vocabulary, for instance. Teachers have to help students use such techniques, she said; she provides course study-guides.

Pierce professor of psychology Daniel Gilbert underscored part of Rawson’s message from a different angle. His two-year-old granddaughter, he noted, “hid” by covering her own eyes, assuming that if she

could not see, she could not be seen. Piaget, he said, observed, “Children think everybody thinks like them,” and learn, over time, that this is not so. Yet experiments have shown that knowing the outcome of a problem or test—as teachers do—*changes* one’s prediction of how others will behave or answer: a serious matter for instructors trying to gauge what their students know or can grasp. Skillful teachers have to take this human tendency into account.

• *The Art of Teaching.* On the second panel, Jennifer L. Roberts, professor of history of art and architecture, made the case for *decelerating* education by reintroducing Internet-era undergraduates to the virtues of deep patience and close attention. She requires her students to prepare for an intense research paper on a single work of art by examining the object closely for three hours. Students emerge “astonished by what they have been able to see.” Vision—seeing—has come to mean instantaneous apprehension, she said, but “There are details, relationships, and orders that take time to see.” For Roberts, these were some of the fruits of “teaching strategic patience”—of giving students permission to slow down and exercise their unknown faculties.

Psychometrician Andrew Ho, assistant professor of education and research director of HarvardX, then made the case for assessment in support of the art of teaching. Given rising criticism of tuition costs and demands for more value from education, he said, such testing was good offense.

The third speaker, Jonathan L. Walton—Plummer professor of Christian morals, Pusey minister in the Memorial Church, and professor of religion and society—delivered a stem-winding sermon on the importance of passion, not just expertise, for teaching. He told how his parents prepared for a fish dinner: his mother drove to the local Winn Dixie supermarket—but his father phoned a buddy, readied his tackle, drove to Florida, chartered a boat, and, as often as not, after failing to hook anything, swung by the supermarket on the way home. His mother was expert, but his father was passionate—and Walton, saying he learned far more his dad’s way, concluded, “Let’s go fishing.”

• *Innovation, Adaptation, Preservation.* The day’s final panel turned to the vexing issue of effecting change. UPS Foundation professor of service management Frances X. Frei said the human drive to perform to

high standards collides with deep devotion to others (children, students), making it difficult to achieve desired levels of excellence. She also explained that Harvard Business School has found that its case method of teaching—*talking* about what to do—no longer suits all the challenges its students will meet; thus, the new field-immersion course for first-year M.B.A. students is focused on learning by *doing*. Frei said the innovation worked because it was designed to complement and reinforce the case curriculum.

Harvard School of Public Health dean Julio Frenk, surveying his faculty’s centennial-year revision of its curriculum, said instruction was being designed around competency-based learning, with modular, experiential units accommodating students at various points in their professional lives. The mix of online and face-to-face instruction would vary with the purpose: greater reliance on the former for “informative,” expertise-oriented learning, and progressively more personal instruction for “formative” (values and professional) and “transformative” (leadership) courses. Among institutional hindrances to change, he listed a cultural factor: how to shift from the term “teaching *load*” to one that gives teaching a value equal to research.

The final speaker, Nan Keohane—president emerita of Wellesley and Duke, Harvard Corporation member, and Rockefeller Distinguished Visiting Professor at Princeton’s Woodrow Wilson School—briskly listed attributes of higher education worth defending in the online era. She said it would be “desirable” to preserve institutional loyalty (of faculty, students, staff, and alumni); the traditional undergraduate rite of passage to adulthood; shared extracurricular activities not available online; and the beautiful campuses and treasures in libraries and museums that many institutions possess. Among the “essential” attributes to retain if higher education is to serve the future, Keohane identified: accessibility for all who are ambitious, curious, and prepared; the canon of human achievements in every field; works that are not classics—tax records, deeds, letters—but needed to understand human history; “the marvelous symbiosis between teaching and research, for both teachers and students”; and “the community of teachers and learners.”

• *The Way Forward.* After an “innovation fair” exhibiting nearly four dozen HILT-

## HARVARD PORTRAIT



Bill Jaeger

**Bill Jaeger** never meant to become a union organizer: when he arrived at Harvard in 1984, shortly after graduating from Yale with a degree in Russian studies, he planned to work at the Russian Research Center and then go to graduate school. But with workers in his office and across Harvard unionizing, he was drawn in. “I saw some really thoughtful, really impressive people throwing themselves into that,” he says. Jaeger grew up outside St. Louis, where his father was an accountant for McDonnell Douglas. After high school, looking for more diverse geography, he headed to Yale, where he met his wife, Susan Mintz, while singing in the glee club. They now live in Arlington, where he enjoys watching European professional soccer with their two sons and plays recreationally with an over-50 club called the Arlington Pond Dawgz. At Harvard, he gave up on a master’s degree after a semester and joined the unionizing effort full time in 1986. As director, he now represents the Harvard Union of Clerical and Technical Workers’ 4,600 members in negotiations with the University—which can involve as many as 60 to 70 formal meetings a year. This past March, nine months after their contract expired, HUCTW and Harvard settled on a new three-year agreement. Jaeger, a careful, measured speaker, says HUCTW makes use of what is known formally as an “interest-based approach,” and the union has never gone on strike. Even so, settling the contract, and pushing forward on talks about health insurance, have made for a “really tough year.” But it was because the agreement was slow to arrive that more of the Harvard community was able to join in a discussion about labor. “That wouldn’t have happened,” he says, “if this had been a quiet, quick, smooth negotiation.”

funded educational experiments, President Drew Faust celebrated the campus conversations about teaching during the past 18 months and cited the importance of conducting such experiments with an eye toward both future extension and assessment of their effectiveness. She also unveiled a second round of HILT grants, including much larger “Cultivation Grants”—from \$100,000 to \$200,000 apiece, with up to five conferred annually—in an effort to scale innovations up at the level of departments, larger organizations, or whole schools. Assuming HILT’s efforts to seed and support educational innovation flourish, Driver-Linn will need to find a bigger venue next year.

For a more detailed report, see <http://harvardmag.com/hilt-13>.

## Online Overdrive

THE FRANTIC pace of expansion and experimentation in online education—spurring HarvardX and its edX partnership with MIT, and its principal for-profit competitors Coursera and Udacity—has if anything sped up in recent weeks. Herewith a snapshot of new alliances; intriguing new applications for massive open online courses (MOOCs); some emerging criticisms and counterreactions; and future course offerings.

- *Global reach.* On May 21, edX announced 15 new partners, bringing the total to 27. They include Cornell; a second liberal-arts college, Davidson; and, of particular importance, 10 international institutions, among them Peking and Tsinghua universities, in Beijing, the leading schools in China; Kyoto University (Japan); Seoul National University (South Korea); and two Hong Kong affiliates. Rival Coursera now lists 81 affiliates around the world, including several museums; Yale became a partner in mid May, having acted on a faculty committee’s recommendation to create an academic director of online education and a standing committee to advise its provost. Yale intends to offer four general-interest Coursera courses in the coming academic year, and will separately pursue its for-credit online language courses with Cornell and Columbia.

- *New audiences and approaches.* Beyond these institutional and geographic expansions, MOOC providers have introduced new teaching applications. First, Coursera rolled out free professional-development courses