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Is 'Design Thinking' the New Liberal Arts?

By Peter N. Miller

The "d.school," or Hasso Plattner Institute of Design at Stanford University, to use the formal name that no one at Stanford ever does, sits in a newish building just behind the main Quad, inconspicuously nestled among the other buildings of the School of Engineering to which it belongs. The engineering school has divisions of aeronautical engineering, an earthquake center, mechanical engineering, and also a division of product design. But the d.school is something very different.

It sees itself as a training ground for problem-solving for graduate students that "fosters creative confidence and pushes them beyond the boundaries of traditional academic disciplines." Whereas design schools elsewhere emphasize the design of products, Stanford's uses what the local culture calls "design thinking": "to equip our students with a methodology for producing reliably innovative results in any field."

What is design thinking? It's an approach to problem solving based on a few easy-to-grasp principles that sound obvious: "Show Don't Tell," "Focus on Human Values," "Craft Clarity," "Embrace Experimentation," "Mindful of Process," "Bias Toward Action," and "Radical Collaboration." These seven points reduce to five modes — empathize, define, ideate, prototype, test — and three headings: hear, create, deliver. That may sound corporate and even simplistic, but design thinking has been used to tackle issues like improving access to economic resources in Mongolia, water storage and transportation in India, and elementary and secondary education and community building in low-income

neighborhoods in the United States.

This essay is the second in a series on how new ways of thinking about material culture, past and present, are reshaping teaching and learning. Click here to read part one.

John L. Hennessy, president of the university, and David Kelley, head of the d.school, have been having a conversation about what the d.school and design thinking mean for Stanford. Hennessy sees them as the core of a new model of education for undergraduates. Two such classes on design thinking have already been created: "Designing Your Life," which aims to help upperclassmen think about the decisions that will shape their lives after graduating, and "Designing Your Stanford," which applies design thinking to helping first- and second-year students make the best choices about courses, majors, and extracurricular activities. Both are popular. Kelley argues for incorporating design thinking into existing courses across the humanities and sciences.

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Hennessy and Kelley see design thinking as something valuable for all undergraduates, not only those interested in design or

engineering. When we are talking about a way of thinking that all students should be exposed to because it enhances their understanding of everything else they do, learning and living, then we're actually on familiar terrain. Because what's happening in Palo Alto right now is really about the future of the liberal arts.

Is design thinking the new liberal arts?

Last semester I taught simultaneous video-linked seminars with my friend and colleague Michael Shanks. I'm a historian working in New York City at the Bard Graduate Center. He's a classical archaeologist teaching at Stanford. The course focused on the practices developed by early modern antiquarians to study artifacts from the past that lived on into the present, and argued that those same methods could be used today by designers interested in the experiences people have with objects. Michael teaches in the d.school in Stanford and brought design thinking into our classroom in New York. By the end of the semester I was fascinated enough to head out to Palo Alto to immerse myself in the ways of the d.school. What I discovered got me thinking about more than design thinking. A very important experiment in humanities higher education is going on.

Last year the d.school offered more than 80 courses, enrolling 1,250 students. Some courses are for a full 10 weeks and others, "pop-up" courses, for four weeks or sometimes only for a weekend. The "pop-up" courses don't give grades and don't count toward a professor's teaching load. As a rule, d.school classes are team-taught by up to six instructors from different disciplinary and professional backgrounds, but the school itself has no dedicated faculty of its own. Students come from all over the university, and the courses are oversubscribed; there is also real pressure from undergraduates wanting to take the two graduate-level offerings. These enrollment figures suggest that whatever it is the d.school is doing, it's working.

Stanford d.school

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Walking around the d.school, one encounters the full range of courses: some lectures, some bench work, some sitting around tables. But all of them buzz with energy, all of them feature teams of students working collaboratively, all of them involve coursework based on problem solving. It's like the famous business-school case method made practical, opened up from the challenges facing businesses to the challenges facing all people.

Design at Stanford began in the engineering school and grew out of the product-design program, itself born of the union of art and mechanical engineering. Launched in the mid-1960s, the master's-degree program was open to students in art and engineering, and included what were then new types of courses like "How to Ask a Question" and new materials-based projects like constructing a wooden ship and racing it on the campus lake.

A second crucial influence came from outside Palo Alto, from Esalen. Founded by two Stanford graduates in 1962, Esalen had

became an "antihumanities" institute, with lectures, seminars, retreats (and Eastern philosophy, music, and more), but no grades or credits. Bernie Roth, a young Stanford faculty member in the design division, attended a faculty retreat at Esalen in the mid-1960s and brought what he had learned there into courses and programs that focused on creativity and empathy. Today Roth is the academic director of the d.school.

A third important influence came from the world of commerce. Kelley, who was a master's-degree student in mechanical engineering in 1977, and who taught at Stanford off and on afterward, brought the emphases on creativity and empathy to a company he helped found in 1978, which eventually became IDEO — and created Apple's first mouse. At IDEO, empathy became "human-centered design," shifting the focus from designing products to designing the experience of using the products. IDEO brought in psychologists, behavioral economists, and anthropologists to work alongside product designers, and together they tried to think their way into the mind of the consumer.

Self-conscious reflection on the design process put thinking about how to design on the same level as the thing designed. The success of the approach is reflected in the way IDEO the design company became, little by little, IDEO the design-thinking company, and its subsequent move into areas increasingly remote from traditional product design. IDEO showed how the process of designing, say, a car could be abstracted from the specific product and used to develop "toolkits" to tackle more complex design problems, like building clean-water systems in Africa, a neighborhood association, or a school. With the formalization of the abstract notion of process as "design thinking," IDEO became a consulting group.

In 2005, Kelley turned to an IDEO client, Hasso Plattner, co-founder and later chief executive of the software giant SAP AG, with the idea of creating a home for design thinking at Stanford. A

gift of $35 million from Plattner launched the d.school; Kelley is credited with leading its founding.

Larry Leifer, professor of mechanical engineering and director of the university's Center for Design Research, calls the half of the d.school building that isn't occupied by mechanical engineering "IDEO.edu." Standing next to a poster of the animated character Bob the Builder, Leiffer explains that at the d.school, "We build people first, then things." Indeed, the emphasis has shifted from traditional product design to the process of designing, and now to the process of designing producers, and even people — all with the aim of "social innovation." And that, in turn, gets at the core of what is significant about the d.school's work for the rest of academe, and for the humanities in particular: Human-centered design redescribes the classical aim of education as the care and tending of the soul; its focus on empathy follows directly from Rousseau's stress on compassion as a social virtue.

That's why Hennessy's discussions with Kelley aren't just about Stanford's future, but about all of ours. Harry J. Elam Jr., vice provost for undergraduate education, elaborated on Hennessy's thinking: "The d.school is not unlike a center for teaching and learning on steroids: Pedagogy and design thinking inform how to portray content and learning goals." In other words, Stanford's administration put two and two together: If the d.school already represented a kind of insurgent consultancy, why not focus that consulting work on Stanford itself? If collaborative project-based learning, real-world challenges, and multidisciplinary research architectures were already being taught in the d.school, why not leverage that experience for Stanford as a whole?

Asked whether the administration was aware that the d.school was furnishing the university with nothing less than a new educational model, Elam answers, "Yes. The simple answer is yes." One vision of what that might mean is the Stanford2025 exhibition project, an attempt to reimagine undergraduate experience. Instead of a four-

year-and-out program with a progressive narrowing of focus, students have a "mission" instead of a major, and "loop" in and out of the university throughout their work careers, with punctuated periods of different kinds of learning, and with fact-based expertise giving way to skills-based expertise.

Stanford d.school

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For Leifer, the d.school is a kind of anti-university. Universities and their academic disciplines, he says, provide "context-independent knowledge." The world and its problems are not, however, organized by discipline. Even if humanists still tend to look down on "applied" learning, Leifer argues, knowledge has to fit the shape of the problem, not the other way around. The d.school's learning is all "context-dependent," pulling whatever it needs from any discipline in order to solve specific problems. The "d in d.school," he says, refers "not to design but to demilitarized." He gestures to one side of the atrium. "Mechanical engineering: a body of knowledge that is extended and defended." Pointing to the other side: "This is the anti-establishment, no journal, no research, no labs, no students, no degrees, no faculty." In between, where he

stood, was an agora-like open space in which students milled about, and where, equally, they can stage exhibitions, gather for events, or sit drinking coffee.

Could it be that every university needs a "d.school"? Do disciplines, in order to evolve and advance, need some place in which to play and from which to be provoked?

That is the role institutes can play within the current ecology of higher education. With independent identities, budgets, staff, and, most important, vision, they can offer a space for play and for focus. Native to Europe, they are still relatively rare in the United States. Anyone who has come across the arcane two-volume survey Forschungsinstitute: Ihre Geschichte, Organisation, und Ziele (Research Institutes: Their History, Organization and Goals) and leafed through its 782-page second volume, an A to Z listing of institutes in Germany in 1930, when the book was published, can glimpse a world that could have been ours, but never was.

That same year, the Institute for Advanced Study was being founded in Princeton, N.J., in explicit imitation of what existed in such number in Germany. Since then, the Warburg and Courtauld institutes have flourished in London, as have the various Max Planck institutes around the globe. In the humanities, in the United States, we can point to the relatively late creations of the Getty Research Institute, the research unit of the Sterling and Francine Clark Art Institute, and the many humanities centers that have sprouted on university campuses.

The institutes support fellowships, intellectual projects in specific fields, and collecting; the centers have opened up new kinds of cross-disciplinary questions. Both, however, remain places where scholars take refuge from teaching and administrative demands — to be left free to do creative work. But the real labor of shaping students and making careers is still in departments.

By standing outside the professional structure of the disciplines — graduate training and tenure and promotion — institutes remain free to ask questions and follow less-frequented tracks across the intellectual landscape. The d.school — officially, after all, the "Hasso Plattner Institute for Design" — embraces this extradisciplinary position (they call it "multidisciplinary"). Research conducted at Stanford's Center for Design Research, for example, shows that the greater the degree of linguistic diversity in a project team, the greater the degree of linguistic invention over the course of the project. Diversity, in short, begets creativity.

We are far away from the old vision of humanities scholarship brilliantly captured in a casual aside by the French historian Fernand Braudel. Presented late in life with highly original works of scholarship, he asked if they were written in prison — the presumption being that conversation was generally inimical to creativity. The Stanford research seems to show the exact opposite: If one wants to promote original scholarship, one ought to bring together as many people as possible from as many different disciplines as possible. Almost by definition, that kind of creative interchange cannot happen in a university department precisely because there is simply too much that is held in common. Disciplines are about answers, or mastery, and therefore favor convergence. Institutes can be more open to questions, and therefore divergence, because they are freed from gate-keeping, whether intellectual or professional. By the same token, humanities centers may also be too much a part of existing university structures to stand outside.

The challenge is how to not be too departmental, but also not too cut off from department life. The answer may turn on rethinking the separation between "research" and "teaching." IDEO's many design-thinking tool kits always include an extended treatment of research. One of the d.school's basic courses, "Research as Design: Redesign Your Research Process," aims to improve "the research process to make us more innovative scholars or scientists."

Sounds good, right? But research in the d.school and research in the surrounding university's humanities departments is very different. In the latter, research is about finding answers to the discipline's questions. In the d.school, it is a process not of finding answers but of discovering questions, the questions that the subsequent design phase — in IDEO terms, "ideation" and "prototyping" — is supposed to answer.

Research-as-questioning is a much freer and more playful approach to discovery. It keeps us in closer contact with our natural disposition to curiosity and wonder. It is also much closer to pedagogy. Shaping classes to share the excitement and skills of doing research as opposed to communicating content could be another way of "flipping" the classroom, but one in which research centers could actually help rethink teaching.

On the other hand, as university-based readers of the IDEO tool kits would immediately see, research in the design world is very closely linked to action-oriented solutions, i.e. to client needs. In fact, close attention to the way "research" is described in IDEO's own publications shows that it is all conducted in the present tense, with no sense that the past matters to the present. Everything is ethnography. Libraries, archives, museums, the great repositories of the human past are rarely called upon for help. That puts a contradiction at the heart of design thinking, given the premise of a human-centered design practice, and the fact that we humans are all sedimentary beings in whom the past lives on and helps shape our experience of the present.

A truly human-centered design, if it takes culture at all seriously, would have to take pastness seriously. As my colleague Michael Shanks, one of the very few tenured professors of humanities teaching regularly in the d.school, points out, design thinking needs to be seen as "necessarily archaeological and represents what prior generations called 'the liberal arts' — the belief that knowledge from and about the past is important for living well in

the future." In our class, students studied antiquarians — the early modern scholars of the material world who are the ancestors of all those who now study material culture.

Looking at their historical scholarship, our students isolated a series of practices modeled on the "method cards" developed by IDEO to actually help designers work. These antiquarian cards are anything but. Turns out that the antiquarians whose very names used to breathe their distance from us, and their distaste for us, are speaking to us. Shanks and I plan to teach a pop-up course in the d.school in which these cards would be used by design students to tackle complex present problems — and test the presumption that the past is a foreign country.

The absence of serious consideration of "pastness" in design thinking is a blind spot. It's also symptomatic of the way in which the balance of basic versus applied research is generally evaluated outside university humanities departments. But aside from the obvious fact that without doing the basic research, we'll never have something we want to apply, the absence of "pastness" — and we can take that to be synonymous with "basic" research for the purpose of this argument — points toward a different sort of problem: of "complexity."

If we think hard about what the liberal arts teach, we find that the study of the past achievements of humans, whether history, literature, philosophy, music, or art, provides us with a richly nuanced appreciation for the complexity of human existence. We may live in a city or a suburb, on a farm or in an industrial slum, born into a family of means or poverty, but on our own we have only our own experiences to go on. What the liberal arts — or humanities — give us are the experiences of those who have come before us to add to our own. These surrogate experiences help us to live well in the world.

Where the liberal arts are about problems — they take the familiar

aspects of life and defamiliarize them in the interest of interpretation — design thinking is about solutions. It's about taking the complexities of life and simplifying them in the interest of problem-solving.

So, is design thinking the new liberal arts?

Not yet.

Those 1,200 students a year taking courses and spending hours learning, some without any expectation of credit, seem almost like they are living out Cardinal Newman's idea of a university. It looks like liberal learning at its best. But without taking the measure of the way the past lives on in the present, and without acknowledging the educational value of defamiliarizing the familiar, if those courses were to replace the classical liberal arts, we would lose precisely the practical value of classical education: seeing ourselves as existing in time and managing a range of imperfect complexities.

Design thinking that took the past more seriously could provide a framework in which humanists and scientists could work together on problems that need to be understood and even solved, such as climate, food, poverty, health, transportation, or built environments. A colleague once told me of a complex research project of the sort beloved by design thinking. It aimed to help farmers in Africa reach some self-sufficiency. But because the project paid no attention to local traditions of food and its consumption, something that went beyond the ethnographically accessible, the farmers ended up refusing to eat the bounty they had succeeded in growing.

Institutes, like the Hasso Plattner at Stanford, can be places of real exploration and new forms of teaching and research; in the world of discipline but not of it. We in the university, at many different organizational levels, may all need our own "d.schools." But for

them to really shape the future of university learning, they will have to do a better job of engaging with precisely what the university was designed to promote, and what design thinking, with its emphasis on innovation, has thus far completely ignored: the past.

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