

Imagine design create: how designers, architects, and engineers are changing our world

Interview with Hugh Dubberly

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You have said that design is stuck. What do you mean?

Design practice does not learn. As a profession, we don't even know how to learn.

We're stuck.

Trapped in the past. Unable to move forward. Unclear on what forward might mean. Lacking mechanisms to build and share knowledge. Lacking even a model of design knowledge.

In fact, the problem is so structurally embedded, so pervasive, so deep, that we don't see it.

Can you give an example?

In 1985, in Boston, the AIGA held its first national conference; speakers included Nicholas Negroponte (a famous technologist) and Milton Glaser (a famous designer). Twenty years later, the AIGA conference returned to Boston and again included Negroponte and Glaser.

In his 2005 speech, Negroponte talked about the One Laptop Per Child project. Glaser showed some beautiful posters and talked movingly about human rights.

What struck me was how much things had changed in Negroponte's world and how little things had changed in Glaser's world.

During the intervening twenty years, computing power, storage capacity, and network speeds doubled more than ten times, while costs remained roughly the same. Personal computers grew from toys to necessities. Mobile phones, the internet, and social networks arrived.

During the same twenty years, the big changes in design were not about design; they were about technology—computers and the internet—changes forced on Glaser's world by Negroponte's world.

What this examples shows is that the world of computers evolves. Like the worlds of biology and physics, it has learned how to learn. It bootstraps existing knowledge to create new knowledge.

That's what academic disciplines do, but it rarely happens in design.

Why not? What's holding design back?

The short answer is: Art schools. Most design programs are housed in art schools. And art school teaching still follows a medieval model: Master and apprentice.

Studio courses are mostly about socialization—sharing and creating tacit knowledge through direct experience. Students learn by watching one another. Teachers rarely espouse principles. Learning proceeds from specific to specific. Knowledge remains tacit.

Practice is much the same as education. Over the course of a career, most designers learn to design better. But what they learn is highly idiosyncratic, dependent on their unique context. The knowledge designers gain usually retires with them.

Rarely do designers distill rules from experience, codify new methods, test and improve them, and pass them on to others. Rarely do designers move from tacit to explicit.

But aren't things changing?

Slowly. Publishing has become a requirement for tenure in design programs at major universities, but studio work remains the overwhelming factor in tenure decisions.

Publishing matters less in second-tier universities and independent art schools. And it is almost a black mark in for-profit design schools, where practical experience remains the main criterion for hiring.

Making things worse, art school tenure committees include non-design faculty, with little appreciation of design research.

The focus on design research at a few top schools is a positive development, (e.g., IIT/ID, CMU, NCSU, Royal College, Delft). Journals such as Design Issues, Visible Language, and Interactions publish interesting articles. But design journals are not widely read. And design research rarely affects practice or teaching.

(A few design blogs are widely read, but they aren't building lasting knowledge.)

Why isn't design research making a difference?

Design doesn't have feedback loops that include funding, research, publishing, tenure, and teaching. These feedback loops ensure quality. Without them, design will remain stuck.

In contrast, engineering, medicine, and biology have strong feedback loops. Government and industry fund research, which leads to military, health care, and commercial applications. Peer reviewers look for breakthrough papers and filter out those that tread old ground. Tenure can be awarded on merit. And graduate students and professors are able to attract VC funding, start companies, and apply their ideas (e.g., Sun, Netscape, Yahoo, Google).

Setting up strong feedback loops for building design knowledge will be difficult. Existing institutions are unlikely to change. We need new ones.

What's the solution?

Visually-oriented design programs should be left to do what they do well.

Design should move out of art schools and into its own professional schools, alongside schools of business, law, and medicine.

Drawing and form-giving are not the essence of design. Seeing patterns, making connections, and understanding relationships are.

Modeling, mapping, and visualizing information should replace figure drawing. Systems theory and process management should replace 2D and 3D foundation courses. Social sciences and communications theory must be part of design curricula (e.g., ethnography, cognitive psychology, economics, rhetoric, semiotics).

Instruction should shift from an emphasis on making to a balance of making, observing, and reflecting.

The case-study teaching method works well in law, business, and medicine. We need to write and teach design cases. We need to integrate design cases and other research into studios.

Why does this matter? What are the practical consequences?

Value is created by developing new products and services. But we don't really know how to design products, services, or organizations. That great products occasionally emerge is something like magic. (Design thinking remains a special form of this magic.)

Product management is not yet a discipline. It isn't taught in design schools or in business schools. We have no theory of product management. We don't even have a theory of products.

Those are giant holes.

What's more, design is no longer concerned only with things. Increasingly, design is concerned with systems—and now systems of systems or ecologies.

In a sense, these systems are alive. They grow and co-evolve.

Designers and product managers cannot always control them. Instead, they must create conditions in which they can emerge and flourish.

All this requires new thinking and new knowledge. It requires design practice to learn.