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# Teaching Design Online

**H**ow would you create a design class that must be entirely online, with no in-person, in-studio interaction? It's quite the design problem in itself, isn't it?

The past few years have seen a dramatic rise in the availability of online-only classes. Distance-based learning programs have thrived for quite some time, as supplements or extensions of some core curriculum. But now thanks to Khan Academy, Coursera, Udacity, and others (not to mention a lifetime's worth of lectures posted on YouTube or iTunes), there has been a veritable explosion of such offerings, shaping a popular expectation—certainly among millennial/GenY demographics—to be able to learn pretty much anything, totally online, from economics to programming to human anatomy. And naturally, offerings centered on user experience or HCI or interaction design are popping up too. But what would it mean to translate something that is typically done as an in-person, studio-based model of learning exchange into a purely online asynchronous transaction? What are the considerations and impacts upon instructor roles, student expectations, tangible outcomes, and general pedagogical framework?

I've recently been involved in exactly this situation, having signed up to create an online class on design thinking 101 as an elective for Lesley University in Boston. The course is part of its pioneering undergraduate degree program on UX, which offers a fully online, accredited design program. I've been serving as the instructional designer for this class, so it could be taught by any qualified

faculty at Lesley, not just me. It's certainly been an illuminating and at times quite trying experience that I am, as of this writing, finishing up, all to be integrated into the school's official learning management system (LMS), Blackboard.

I'd like to share my perspectives on this process, in the hopes of stimulating useful debate on this topic of online teaching—a great challenge for HCI professionals!

First, let's acknowledge that there is something uniquely challenging when moving a *design* course online. Why is that? Design (whether administered as HCI or fine arts or D-School) is fundamentally a practical activity aimed at shaping informed perspectives and tackling embodied problem solving via experimentation, testing out theories in some materially manifested form (i.e., concepts with tangible outcomes for evaluation: a device, an app, a system model, a video, and so forth).

Indeed, a studio or lab space with collaborative, project-based inquiry is what drives pretty much all design programs of good repute. Direct, real-time interaction between a teacher and her students is a vital means of wrestling with various

propositions and questions that become embodied as problems for exploration (as exercises, projects, etc.). And that dynamic fosters a depth of investigation with materials such as type, color, motion, behavior, ergonomics, and affordances, from screens and pixels to circuits and sensors and beyond, as we advance into the emerging areas of robotics, wearables, autonomous vehicles, and so on.

The numerous benefits of a live studio context with the combined presence of students and instructor(s) together include:

- Immediacy of conversations undisturbed by filters/technologies
- Development of trust and rapport via question/answer dialogues
- The challenging of assumptions with “right here, right now” stimulation of ideas and questions from other students (or re-addressing/re-explaining in other ways, with physical gestures and demonstrations)

- The generation of eureka moments of insight through students witnessing (via whiteboards or screens or being in the shop, etc.) how such ideas manifest in making something, or simply by pointing out to students examples that illustrate abstract points (literally, show and tell).

All in all, the studio context enables a rather ultra-high-definition resolution—way better than 4K HDTV!—of educational experiences for developing design aptitude and skills.

And let's not forget the raw physicality in the exploration of ideas! Making a quick prototype right there to validate a claim and then literally picking it up, playing with it, debating its qualities—this all yields a memorable, grounded experience of learning, echoing John

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Dewey's "doing and undergoing" in forging comprehension as a testament to the vitality of a truly educational interaction. It is an experience enabled by the active environment of a studio, supporting the journey to inquire, interpret, understand, manifest, and learn.

But what about a class that exists solely via the interfaces of an online learning system; how does design learning even happen? It's all quite different! There is only a Web browser to access predefined course materials housed within a perhaps unnecessarily complex LMS software suite, whose difficulty may rival that of the enterprise business apps that all teachers and students must use daily. Plus, there are layers of interpretation occurring at a distance

and asynchronously: outlines, folders, files, annotations, updates. Are students getting the updates and truly checking out the docs?? Who knows!

But let me back up a bit. As part of my deal with Lesley University, I was required to participate in a four-week seminar on instructional design—yes, an online class on how to design an online class, so quaintly meta! This class provided tools

and frameworks to help me shape a syllabus with identified learning activities and specific outcomes per a rigorous structure (i.e., Bloom's Taxonomy as the main reference). But more important, this class offered a chance to *feel* what it's like to take a class purely online for an extended time—that's right, gain some *empathy*—particularly as a busy professional with a hectic schedule, compelled to work on group projects with other classmates who are in different time zones.

Some big questions and issues surfaced immediately:

How do you persist and balance multiple *modes of presence* with an online class, with distributed asynchronously interacting students and instructors? There's

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the teaching presence (offering guidance and feedback), a social presence (classmates collaborating and dialoguing), and the cognitive presence (the students' intellectual engagement). All of this happens quite fluidly IRL (in real life) but must be actively sought or managed when online.

Related, how does a class form *collegial bonds of interaction* that may naturally and easily develop in a regular semester studio class? For online-only, such class dialogues are conducted asynchronously via interface constructs like discussion forums, comments on journal entries, and time-shifted video posts. It definitely raises questions around developing social bonds and collegial rapport, as well as the accuracy of interpretation of textual exchanges, emotive reactions, and so on. Identity and authenticity (not to mention the timeliness) of communications, as with any social online medium, form another hump to get over in enabling productive class dynamics.

How do you evolve your approach from an *adaptive model of dynamic feedback* with students to a more *static, prescriptive model* of detailed, predefined lesson plans? Indeed, a big part of the value in teaching is the guidance from students to see if they "get it" and how much iteration on your part is needed to evolve your methods to foster their learning. For an online class, everything—and I do mean EVERY reading, exercise, and assignment—must be verbosely detailed with generous instructions, with nothing taken for granted. Remember, you are not there to demonstrate how to perform an activity, as you would in a real class, and answer inevitable questions or clarifications. Clean-slate thinking is required; you must truly assume nothing!

What is your *role as a teacher* in a completely online situation? In a studio context, you most likely are the central authority figure, a demanding coach, and an empathetic guide to help students along the path of understanding, which depends upon those modes of presence described earlier. However, for online teaching, your presence is more fragmented

and there's more emphasis on peer learning via online chats and discussion forums, with time-delayed, back-and-forth feedback on posted assignments. So you're more like a facilitator leveraging the LMS tools at your disposal to guide communications along, which is also amplified by office hours and email. It's a bit more of a quiet and subtle role, since students aren't showing up to a place and seeing you in person gesturing with your hands and expressing your professorial guidance with your face.

Oh, and speaking of time, get ready to experience severe "time dilation" of class exercises, due to the asynchronous nature of the class. What I mean is, something that takes just 10 to 15 minutes of real-time, extemporaneous demo and explanation (e.g., showing the class how to do paper prototyping or wireframing) could take WEEKS due to allowance for reasonable time periods for studying background materials, digesting detailed instructions, setting up milestones for check-ins, reflecting back in a virtual chat room, and responding to those reflections. Not efficient at all, but it is a desperately crucial expectation to contend with for online classes, as a general pattern.

And, let's face it, your students are interacting, as their primary conduit, with the interface of the LMS system to access readings, write notes, post assignments, and engage with the instructors. The structure and personality of that LMS are vital to enabling a smooth, efficient experience, to truly enable not just learning but also the experience of being a student (or a teacher). Not to be forgotten—content strategy is crucial! As a course designer, part of your job is to make your lessons easy to scan, digest, and act upon. In this era of glance, scan, and react (thanks Facebook and Twitter!), expect that literacy model to be applied to your course materials, for better or worse.

Clearly there's an array of issues that make it quite challenging to enable any kind of design learning online, compared with what's

possible in a studio context—the disembodiment; asynchronous, fragmented attention; distributed tools; and interference from poorly designed online tools that get in the way. And do we really want education simply distilled to an app that's highly transactional and prescriptive? Would John Dewey approve? I think not.

So what does all this mean for the future of teaching design online? And how do we preserve the stellar qualities of a studio or lab model of design learning while respecting the constraints of the online medium? Is it truly possible?

I am optimistic as technologies improve (high-resolution video, virtual reality, robust discussion/threading systems, truly fluid UX across channels and devices); and we in the field of HCI must continue to develop novel approaches to express virtual presence and interactivity as new kinds of digital literacy emerge. Great potential remains as technology accelerates to simulate truly high-resolution communications, with greater fidelity of nuance and engagement so that the virtual feels truly live and physical—even visceral, not simply a pale simulation. Imagine an LMS system that fully takes advantage of VR with AI services, personalized chatbots, and highly responsive conversational interfaces as mechanisms to compensate for today's deficiencies, making the educational experience a dynamic online marvel that truly activates learning. And yet we must be realistic: There are critical constraints as new forms of educational development emerge. Let's remember that in the end, regardless of the medium or interface, to teach is to illuminate, guide, enable, and inspire others to take a path of discovery and mastery, whose fruits bear out in reality, beyond any classroom or screen.

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