

Specialized Research Courses for Design Undergraduates

To be published in Innovation, Winter 2014

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Elizabeth Sanders is an associate professor at The Ohio State University. She has been teaching design research at OSU since 1992 as an adjunct faculty member while working fulltime in industry as a design research practitioner. She joined the OSU design faculty fulltime in 2011 and teaches research now at both undergraduate and graduate levels.

In recent conversations, we have been comparing notes on how research is taught at Art Center and Ohio State. With the growing demand in industry for design research practitioners, we see a compelling case for offering specialized research courses in undergrad industrial design programs, and we thought we would share how our programs are doing this.

Research at Art Center College of Design

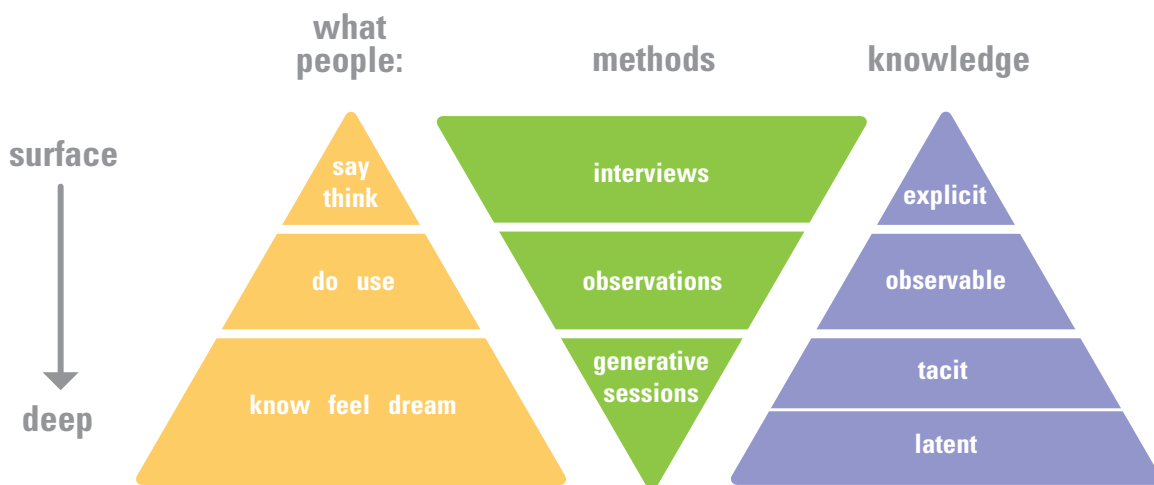
I designed Art Center's first dedicated required course for design research in 1991. It started as seven weeks of research concurrent with the 7th-term product design studio (the 7th term is equivalent to the first semester senior year), but evolved quickly to 14 weeks of research on a separate topic. In 1996, I also helped integrate research into the beginning product design studio co-teaching as research specialist with a design specialist. This course is still co-led in the same way.

The ID Research course eventually became independent from the design studio. To teach advanced-level research methods, the course needed 14 weeks, while the design studios dedicated only four or five weeks to research. Not only was there not enough time to teach research methodologies with any depth in the studios, the students experienced conflict between the different research time lines for the two connected courses, so we separated them.

Students gained command of research methods in ID Research in the 7th term, but needed that expertise earlier in the curriculum. We moved the course to the 5th term and began to expand research offerings in all studio courses. We also developed a research-only course in the 2nd term that provided an overview of

all research methodologies used in design. This combination lecture and studio provided a hands-on introduction to design research methods at a beginning level. This course is still required of all majors, but in the Product Design program we recently replaced it with expanded research phases in all studio courses, advancing in complexity, length and breadth as students move through the curriculum.

Design research is now integrated into all studio courses, starting with a basic understanding of interviewing and observational techniques (understanding what people say and what they do) and introducing the concept of generative tools (understanding what people make). This instruction is repeated term by term, incrementally adding complexity and advanced knowledge.



Liz Sanders and colleagues at the Delft University of Technology use this diagram to show how different research methods uncover different kinds of knowledge. (From "Contextmapping: Experiences from Practice" which appeared in CoDesign, available at www.maketools.com/papers-2.html)

We broadened the curriculum to include specialized research courses and components: two courses teaching life-cycle analysis and other research for sustainability; a course in color, materials and trends research; in situ ethnography for social impact design for our DesignMatters studios; and branding, positioning and entrepreneurial research for the 7th- and 8th-term studios.

In 2007 I developed advanced methods for teaching research for the ID Research course. Students learn to select and frame a topic and develop a research plan (weeks 1–4). They specify and recruit participants and conduct field interviews (weeks 5–9). The fieldwork includes three generative tools; students learn a rationale for choosing the right set based on the knowledge they seek. Building on knowledge from earlier terms, this is where students design and conduct research at a professional level.

Learning to frame, plan and conduct field research is not enough. Weeks 9–13 teach a systematic set of tools for analysis. In the past, analysis consisted of clustering sticky notes, standing back and asking ourselves “What have we got?” We found this insufficient; the conclusions were thin and obvious. Systematic analysis now uncovers insights that lead to viable, nonobvious design opportunities.

The research concludes with a presentation of these insights and their concomitant opportunities—fuel for the ideation phase. It is not enough to organize and present findings. Through the rigor of the analysis, our students are required to develop a point of view that informs a set of recommendations for action based on the insights from the research.

The research curriculum at Art Center continually evolves based on observations from faculty and feedback from the students. For the future, we are planning advanced design research labs as well as a track for design research specialization.

Research at The Ohio State University

Design research has been an integral part of the undergraduate design curriculum at OSU since 1968 when two courses in design research were offered to all undergraduate design students. From 1968 to 1992 these courses were taught by design faculty members using a combination of lectures and hands-on exercises. In addition, design research has always been a component of the design studios.

When OSU transitioned from the quarter to the semester system in 2012, design research grew from two quarters to three semesters of required courses for all the design students at the undergraduate level.

Design Research One is required of all the design majors (industrial design, interior space design and visual communication design) in the first semester of their sophomore year. This is the foundational course in the design research curriculum. Students start with quick hands-on exercises to learn how to conduct and analyze research methods that fall into three categories: what people say, what people do and what people make.

They work in same-discipline teams on the first research project in which they are asked to evaluate a product, environment or communication by investigating what people say, do or say they do with regard to it. Their research findings feed into their final design studio project in each discipline.

For the second project they conduct experiential design research on a topic of their own choosing. In mixed discipline teams, they investigate what others say, do and make with regard to the experience domain. At the end of the semester

the students create individual design research portfolios that showcase the methods and tools with which they have had first-hand experience.

Design Research Two is required of all design majors in the first semester of their junior year. The mindset practiced for this semester is one of *designing with* people in contrast to the *designing for* people mindset that was practiced in Design Research One.

The students are presented with the choice of about 10 prearranged projects. Each project has a “client” from the outside who has agreed to help the students connect to people with whom the students will establish a participatory relationship. For example, the theme this year is healthy eating, and the clients include civic innovation activists, local nonprofit organizations, university experts and OSU Medical Center professionals. The student teams will use their design research and relationship-building skills to engage their client and other stakeholders in a co-designing process with a focus on the generative phase of the process. Working on real projects that have social impact is a challenge, but one that can be very rewarding.

Design Research Three is required of all design majors in their senior year. The students are separated into their majors now and are taught by a design faculty member from their major. This enables the students to learn about advanced-level discipline-specific research topics.

Several growth opportunities for design research at the undergraduate level are being considered at OSU. The first step would be to add more faculty with expertise in design research so that we can include more activities for teaching design research to those who minor in design and so that we can prepare for the first major in design research at the undergraduate level.

The Important of Specialized Design Research Courses

Design research needs to be covered in specialized workshop courses outside the studio in undergraduate design programs. Students need this dedicated time to learn to plan and use the complex array of methods now in place in our profession. Lecture-only courses do not give the hands-on experience students require. Four or five weeks out of a term-long design studio brings an understanding of how research is integrated into the design process, but is not enough to give the robust knowledge students need.

The insights and observations we ask undergraduates to make require a level of experience and maturity they might struggle to have. Understanding the intersecting values, requirements and points of view of the designer, the client, culture and society as a whole requires design literacy at an advanced level. Our undergraduates need the opportunity to immerse themselves in research in order to meet this challenge.