

On the Case Study Method of Research and Teaching in Design

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Case studies have a rich history for exploring the space between the world of theory and the experience of practice. It is one thing to have an idea and another thing to make that idea concrete and real. Designers, by the nature of what they do, must become skilled at moving between those two places. But recognizing and understanding the transition from the one place to the other, and back again, is difficult. Case studies are a useful tool for research and teaching that focus on the transition between theory and practice. The format has been widely used in other disciplines, and it can be used effectively in design.

Law schools first showed the way for the case study approach, beginning in 1870.¹ Before that, law was taught by the Dwight Method, which emphasized memorization and recall, and left much of the practical learning to apprenticeships. Christopher Langdell changed that way of teaching when he arrived at Harvard Law School. He believed that, at its root, the art of practicing law involved understanding core principles and being able to apply those principles in different situations. Of course, the legal profession was fortunate in this respect, because there already existed an infrastructure by which cases were written to explain and interpret the principles used to reach legal judgment. When Langdell started teaching, he had his students read the original sources, which were the cases, and develop their own conclusions, guided by conversation and discussion in the classroom. The dialectic of discussion, rather than simply memorizing the grammar of the law, enabled the student to better understand legal principles and their possible application in different situations. Langdell set in motion a teaching approach that initially was met with resistance but, by 1920, became the dominant teaching mode in law schools and continues to this day.

Around 1920, the Harvard Business School began exploring the possibility of using the case study approach in their graduate program.² They, too, realized the need to prepare students for the job of making and implementing decisions in a murky world. The biggest hurdle was the lack of existing case studies, so Wallace P. Donham, the dean of the Harvard Business School, created a group known as the Bureau of Business Research, which developed and wrote case studies from 1920 to 1925. These cases served as a starting place, and the writing of additional case studies became an integral part of a law professor's duties.

1 David A. Garvin, "Making the Case" *Harvard Magazine* (September–October 2003): 58–59.

2 *Ibid.*, 60–61.

The case study method continued to make inroads into new professions when the Harvard Medical School adopted it in the mid-1980s.³ Professors there realized that the art of practicing medicine lay in the connection of scientific and medical principles with the unique social contexts in which doctors found themselves making decisions. Since the need to constantly be learning new techniques and approaches is more prevalent in the medical profession than in the law or business professions, the case study method evolved from being a practical example of principle in context to a catalyst for learning previously unknown principles. When what one already knew did not answer the question, one sought out other ideas that could. This was dialectic in a productive form, moving from the known to the unknown, seeking new ideas and methods.

In each instance of case study adoption, there was an understanding that problem-solving lay at the core of the professional experience. Scholarship could teach the underlying foundation of knowledge that informed the topic, but could not always make clear the process of analysis. Case studies are not a perfect solution to the problem. They cannot tell what decisions should be made, but they can connect the student to social phenomena, real life experience, and existential situations in a way that helps to sharpen thinking and inform decision-making.

Much of the groundwork for the use of case studies in design was laid in the last decade. For example, the continuum of design theory and design studies has developed a view of designers as problem-solvers who employ diverse methods and techniques. In turn, design research has evolved into a formal component of the design process. However, designers have not yet made the leap to writing and using case studies as an important part of design education and research development.

There may be several reasons for this. First, unlike law, business, and medicine, the principles underlying the design process are not well documented, articulated, or agreed upon. The pluralism of the field is a significant reality. While most design processes follow a similar pattern, they are subject to many variations in practice, based on personal idiosyncrasies as well as differences of circumstance and product type. Indeed, design processes sometimes are thought of more as corporate or organizational intelligence than public knowledge. As a result, a method of creating and developing a product often is regarded as privileged, proprietary information that cannot be shared with the public. This secrecy does not lend itself to in-depth examination by outsiders. Consequently, there is not a repository of cases from which to draw. Companies, themselves, sometimes attempt to conduct case studies of their work, but the results usually lack the objective rigor necessary for an effective case study and the report ends up serving primarily as a marketing piece.

In fact, the tendency in design to publish what amount to marketing pieces in design magazines—self-promotional articles

3 Ibid., 62–64.

on the work of a designer—has clouded the value of case studies as a tool of research and teaching. Without following the discipline or rigor of well-conceived case study methods, the numerous descriptive articles that merely report on a design course, or a new product or a new technique, pass for case studies but seldom are more than anecdotes when viewed from the perspective of research.

A second reason for the relative dearth of case studies in design involves the practice of design as an art. Well-designed products often are attributed to the genius of an individual or the innovation of a moment; and designers may be reluctant to believe that there are universal ideas to be extracted from these stories.

A third reason may involve the form of the case study itself. Among existing design case studies, most are written in the form of business case studies. While this is reasonable, given the position of design within business and industry, it may shift attention away from some of the core elements of design practice that are typically de-emphasized in a business case study of design. The influence of business considerations on design thinking is certainly important, but research in design requires a better understanding of other issues as well. The nature of a design case study deserves close attention if it is to serve the various needs of research and education.

As a research method, the case study is a recognized tool of the social scientist in gathering qualitative information. There are several types of case studies described and documented in the literature of the social sciences and elsewhere. For example, there are types such as exploratory, critical instance, program effects, and narrative case studies. In a sense, case studies are exploratory and descriptive by nature, identifying a phenomenon and placing it in the literature for further pursuit by other methods of research. But the limitations of case studies also are well discussed, making it important to follow the formal rigor of case study structure such as described by Robert Yin in *Case Study Research: Design and Methods*.

The application of case study methodology in the social sciences has correlations with the emerging field of design research, but the connection runs deeper than that. Formal case study structure requires researchers to determine a problem, make initial hypotheses, conduct research in gathering information and making observations, revise hypotheses and theory, and tell a story. These all are acts that are strikingly similar to the work of a designer. The result is that the act of researching and writing a case study easily can be seen as an application of the design process.

The integration of case studies as a way of teaching and learning is a more complex undertaking. To understand how to make case studies useful to designers, we first must understand how designers design. Historically, designers and design education have focused on the making of an artifact, whether that artifact is a communication or an industrial product. Project-based education and studio-based education have been central features of design education from early

Figure 1
The Four Orders of Design

	Symbols	Things	Actions	Thoughts
Symbols	Graphic Design			
Things		Industrial Design		
Actions			Interaction Design	
Thoughts				Environmental Design

in the twentieth century, if not earlier. This means that the core principles of the discipline are taught through practice, and are presented as part of a solution for a specific problem. For this reason, the learning from one project may not survive in the transition to other projects and problems. While the principles embody an element of theory, they are not presented as theory, but as rules-of-thumb and the slowly acquired wisdom of teachers and masters.

As a result, design case studies have a more difficult, two-part job of establishing theory and, at the same time, creating or recreating a bridge back to the practical. At a minimum, case studies provide examples for designers and students, and these examples can be a powerful, effective way to connect ideas and action. But there is a further opportunity in design case studies, the opportunity to begin talking about theory as theory instead of merely a practical application of wisdom and rules-of-thumb.

Case studies and studio education can work effectively together when the teacher begins to follow the dialectical, conversational approach of Christopher Langdell at the Harvard Law School: helping students enter the conversation, rising to theory and moving into application, and then moving back again in reflection. This may be an ideal in design education, but few teachers have truly mastered the art of this form of teaching. Nevertheless, the example of other professions that have made the transition to effective, theory-informed conversation should be encouraging for a new generation of design educators and researchers. The hope is that making a stronger connection with theory will illuminate principles that designers can use in their practice.

The possibilities of theory should not be lost on designers. Theory can provide opportunities to grow in one's practice by exposing previously unseen connections and relationships, as well as providing context for understanding changes that already are happening. For example, we can look at the theory of fourth-order

design (Figure 1). Fourth-order design provides a way to make new connections between what we make and how we make it.⁴ The traditional first- and second-orders of design have focused on communication through images and symbols, and the construction of things or artifacts. The transition in design practice, when viewed as a move into third- and fourth-order design, expands the designer's concern toward actions and thoughts. In making that move, design is opened up to the world of human experience and the systems, environments, and organizations within which human interactions take place. This does not reduce our respect for graphic products and industrial products, but places them in a new context for design thinking. The idea of fourth-order design becomes a theoretical instrument—a tool for helping designers discover new possibilities and opportunities within a problematic design situation. Case studies such as “Design for Organizational Change: Ziba Design and FedEx” begin to assemble empirical evidence that illustrates the theory of fourth-order design, and suggests ways in which the theory itself may be extended and studied further. This generally is the role of case studies: to develop theory and practice in close relationship for the benefit of everyone involved in the enterprise of design.

4 Richard Buchanan, “Design Research and the New Learning,” *Design Issues* 17:4 (Autumn 2001): 10–12.