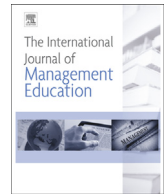


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Teaching design thinking in business schools

Roy Glen ^a, Christy Suciu ^a, C. Christopher Baughn ^{a,*}, Robert Anson ^b^a Department of Management, College of Business and Economics, Boise State University, Boise, ID, 83725, USA^b Department of Information Technology and Supply Chain Management, College of Business and Economics, Boise State University, Boise, ID, 83725, USA

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ABSTRACT

Incorporating design thinking in the business curriculum can provide students and instructors with a framework for dealing with unstructured problems and for managing the innovation process. However, many business students, like many business professionals, experience confusion and frustration when engaging in design thinking projects for the first time. This paper provides guidance for faculty who are considering incorporating design thinking projects into their business classes. For such projects, the complex, iterative process of design thinking is structured to include six phases: problem finding, observation, visualization and sense making, ideation, prototyping and testing, and the design of a business model enacting the innovation. Guidance is provided to the instructor for managing the activities and challenges faced in each of these phases. The Appendix summarizes this information in a practical format for the instructor.

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1. Introduction

To address messy, ill-structured problems decision makers are increasingly attempting to incorporate the thought processes and methods underlying design practice. The term “design thinking” has been coined to describe the general outlines of these approaches. While key attributes of design thinking have been articulated over the course of several decades (Buchanan, 1992; Cross, 1982; Rowe, 1987), design thinking practices are now being applied to such areas as product innovation, business strategy, organizational change, and healthcare. Applications have been extended to community services and social innovation (Brown, 2009; Dunne & Martin, 2006; Liedtka, King, & Bennett, 2013; Melles, Howard, & Thompson-Whiteside, 2011).

For the last few years, we have been utilizing the design thinking approach in our undergraduate and graduate business classes. In this paper, we introduce the key features of the design thinking pedagogy to the interested, but uninitiated instructor, and describe what we have learned from our experiences. Our goal in this paper is to show, based on our experience, how teachers can successfully incorporate design thinking into their classes. We start with a discussion of the core characteristics of design thinking, then demonstrate their application in a phased approach adapted to a business pedagogy. Key challenges faced by students (and hence instructors) during the initial design thinking experience are raised and addressed throughout the discussion.

* Corresponding author.

E-mail addresses: rglen@boisestate.edu (R. Glen), csuciu@boisestate.edu (C. Suciu), cbaughn@boisestate.edu (C.C. Baughn), ranson@boisestate.edu (R. Anson).

2. Background: core characteristics of design thinking

Design thinking differs in principle from analytical and linear problem solving approaches generally found in business schools (Glen, Suciú, & Baughn, 2014). The analytic approach emphasizes planning and optimizing objective, predefined criteria. This approach is most appropriate when the problem is clearly understood, relevant data are available prior to action, and the past is a good predictor of the future. On the other hand, design thinking is appropriate in uncertain, complex situations—particularly those in which people are the key evaluators of the “goodness” of the solution. Design thinking’s process and methods facilitate rapid learning and understanding of the situation and people involved, while allowing for iterative generation and testing of possible solutions. Facing conditions in which problems or opportunities involve many unknowns, where past data is unlikely to be of much use, and where human beings are enmeshed in the problem and solution, decision makers may find that design thinking provides a much-needed path forward (Brown, 2009; Liedtka, Ogilvie, & Brozenske, 2014). This includes conditions in which the manager or entrepreneur is seeking to create new sources of value.

Below, we list key principles that characterize design thinking, based on the work of noted practitioners (Bootcamp Bootleg, 2010; Brown, 2008; 2009; Lawson, 2006; Liedtka & Ogilvie, 2011).

2.1. Human centered

The design thinking process begins with the world of the user, and tries to develop novel insights into the problems users encounter in everyday life. By necessity this requires the designer to put aside preconceptions and be open to allowing observations to define what problems are worthy of further investigation. This process encourages one to develop empathy—a sense of connection or sharing with the subject. Empathy engages both logic and emotion, stirring insights, intuition, and inspiration. This facilitates the design of more holistic and effective solutions.

2.2. Observation

To understand human needs, design thinking emphasizes observation leading to empathy, insights and analysis. The purpose of observation is to gain an unfiltered understanding of the user’s experience, abilities, and constraints—to “walk a mile in their moccasins.” While analysis involves breaking apart the root causes of a problem, observation is opening up to, and synthesizing, multiple levels of the user experience—physical, emotional, cognitive, and cultural. Typically, in design thinking, observation is far more active than passive. It often involves engaging and interacting with the subject, although it may also make some use of reports, surveys and passive monitoring.

2.3. Visualization

While observation involves sensing information, visualization is a different approach to making meaning of the information. Visualization techniques help a group piece together a myriad of unorganized observational artifacts and feelings in different ways to help spark new connections, perspectives and insights. The techniques tap into empathy and intuition as well as logic and memory, to discover patterns and themes.

2.4. Prototyping

Prototyping is very different in design thinking than in engineering. In engineering, prototyping typically focuses on the development process, transforming something from raw materials into final form. In contrast, design thinking focuses on representing the idea for the purposes of feedback and learning. The point is to generate many throw-away prototypes with the bare minimum fidelity for customers to react to the possibilities and problems with the idea. Creating the prototype should be as fast and cheap as possible.

2.5. Experimentation and active learning

Active learning is the pedagogical equivalent of design thinking in its bias toward hands-on engagement of the learner with the subject. Design thinking places a strong emphasis on doing and an attitude of experimentation (Brown, 2009; Liedtka & Ogilvie, 2011). Both active learning and design thinking assume one must interact with a subject to make appropriate meaning of it. Professional practice, as noted by Schön (1983; 1987), requires more than just technical rationality—the application of systematic principles and procedures reflecting a foundation of existing knowledge. There also needs to be a process for engaging in a situation and using observation and feedback as a means of learning—reflection in action. This entails thinking about, as well as getting a feel for, the situation as one’s actions evolve to produce better results. Reflection in action can be seen in many fields of design, including architecture, product design and engineering design, and is relevant to other professions as well.

Drawing on learning approaches such as Kolb (1984), and Schön’s work regarding reflective practice (1983; 1987), we conceptualize this active learning as a process in which one takes actions that result in sensing new information, which in turn stimulates generation of new insights. Through this “reflective conversation with the situation,” one can come to

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