



Design thinking: A creative approach to educational problems of practice



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ARTICLE INFO

Keywords:

Creativity
Teachers
Teaching
Problems of practice
Design thinking
Design

ABSTRACT

The problems educators face in professional practice are complex, varied, and difficult to address. These issues range across teaching and learning topics, to social or community issues, classroom climate issues and countless others. Such problems are multifaceted, cross-disciplinary, human-centered, and rarely solved through simple or linear solutions. Grappling with them requires educators to think creatively about educational problems of practice. But given the challenges and expectations facing teachers, creativity is often seen as leisure in teaching practice. While creativity is considered a core 21st century thinking skill, many people are hesitant to self-identify as “creative,” or are uncomfortable with intellectual risk-taking and open-endedness. We suggest that design thinking may provide an accessible structure for teachers and teacher educators to think creatively in dealing with educational problems of practice. We examine a qualitative study of a graduate teaching course framed around using design thinking to creatively approach educational problems of practice. We discuss thematic takeaways that teachers experienced in learning about and using design thinking skills to approach educational problems of practice. Implications suggest that design thinking skills may provide habits of mind that benefit teachers in creative problem navigating.

1. Introduction

The problems educators face in practice are complex, diverse, and often difficult to address. These issues range across teaching and learning topics—such as lesson and curriculum development, student motivation and engagement or disciplinary issues—to concerns around school climate, relationships with parents or community, and others. Such problems of practice are multifaceted, cross-disciplinary, human-centered, and rarely solved through simple, linear solutions (Bullough, 2012). Grappling with them requires that educators think creatively about educational problems of practice.

Creativity is a core 21st century thinking skill for students (Mishra & Mehta, 2017). We suggest that it is also vital for educators; yet given the challenges and expectations facing teachers, creativity is often seen as classroom leisure (Berliner & Glass, 2014; Root-Bernstein & Root-Bernstein, 2017). For many, creativity remains a sought-after, yet daunting and intimidating skill (Williams, 2002). In the face of creative thinking or problem solving, many people are reluctant to self-identify as “creative,” or are uncomfortable with intellectual risk-taking and open-endedness (Weisberg, 1986). Because the open-endedness of creative work is challenging, people need a flexible structure to guide creativity, as a way to “intentionally work through getting stuck” (Watson, 2015, p. 16).

It has been argued that design thinking provides a flexible, accessible structure to guide educators (Rauth, Köppen,

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Jobst, & Meinel, 2010) and scaffold their creativity in dealing with problems of practice. Just as creativity is a key 21st century skill (Robinson, 2011), Pendleton-Jullian and Brown (2015) assert that design thinking skills are core literacies for 21st century creativity. While design thinking has most often been used in business or product/service design, it has increasingly received attention in education. However, the relative newness of design thinking in teaching and education means there is much that we do not know. While there is much discourse, there is still a dearth of educational research on the subject. To begin to address and consider these ideas, we share a qualitative study of a graduate teaching course, about using design thinking to creatively approach educational problems of practice, along with process and creativity themes about educators' experiences in using design thinking for problems of practice.

2. Dissolving creativity myths

Creative thinking is often mythologized as an inherent trait, rather than a developed habit of mind or approach (Cropley, 2016). Stretching back to Plato's belief in the muse, there has been a mysterious element to creativity and a common assumption that only rare or exceptional people have creative insights (Starko, 2005). Sternberg and Lubart (1991) note that people today continue to presume that creativity is spiritual, or simply inherent in nature, and cannot be developed or enhanced. Despite educational discourse around the need for creative teachers, these myths continue through practice (Henriksen & Mishra, 2015). Many teachers do not receive avenues or opportunities to engage or develop their creativity (Henriksen, 2011). Current educational policy is often constricting and unsupportive to teacher creativity; and teachers often feel uncertainty about their own individual creative potential—making it difficult to identify and enact creative solutions to problems of teaching practice.

While challenges and myths propagate around creativity, scholars have discussed possible approaches toward creative thinking via design thinking. Design is an interdisciplinary domain that employs approaches, tools, and thinking skills that help designers devise more and better ideas toward creative solutions (Kelley & Kelley, 2013). The term “design thinking” refers to cognitive processes of design work (Cross, 2011; Simon, 1969)—or the thinking skills and practices designers use to create new artifacts or ideas, and solve problems in practice.

We begin this article with a discussion of design in relation to creativity, to consider how it may inform teacher education by helping teachers create solutions to problems of practice. We describe a graduate design thinking course for educators, aimed at engaging design creativity to address educational problems of practice. Finally, we share a qualitative study, examining how in-service teachers experience and learn from design thinking skills for creative professional problem solving. Our findings explore a trajectory of themes, from teacher participants who worked through five core design thinking skills: Empathizing, Defining Problems, Ideating, Prototyping, and Testing. Implications suggest that design offers thinking skills and practices that can support teachers in creatively addressing problems of practice, by deepening their capacity to address such issues.

3. Everyone designs: design thinking, creativity, and education

A basic, often-cited definition of creativity describes it as the process of creating ideas, artifacts, processes, and solutions, that are novel and effective (Cropley, 2003; Fox & Fox, 2000; Oldham & Cummings, 1996; Zhou & George, 2001). Design is the creative process of intentionally developing something that does not yet exist. Thus, both analytical thinking and divergent creative thinking are key to design processes (Kelley & Kelley, 2013). Design lies at the intersection of art and science, and applies to a wide range of human-centered disciplines through creative work (Cross, 2011; Weisman, 2012). A designer's work is iterative and often idiosyncratic, but designers' creativity and design choices are scaffolded and informed by common processes (Buchanan, 2001). These design thinking skills give flexible support and grounding to the open-ended arena of creative practice (Hoadley & Cox, 2009; Watson, 2015).

Herbert Simon (the Nobel Laureate who founded design as a professional field) stated a definition of design that reflects its applicability to human-centered problem solving:

Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state (Simon, 1969 p. 130).

In this, design crosses many fields of human endeavor around complex problems and creative solutions. Buchanan (2001) notes that design involves using human ability for creative problem solving around ideas, processes or systems that serve needs. Design involves directing creativity towards goals, actions, and purpose around real world issues (Collins, Joseph & Bielaczyc, 2004; Hoadley & Cox, 2009). This situates design as a creative problem solving and thinking approach for human-centered professions, such as doctors, nurses, engineers, and others—most notably, educators.

3.1. Teachers as designers: design thinking and education

Scholars have discussed design as a theoretical lens for education (Mishra & Koehler, 2006; Kirschner, 2015; Norton & Hathaway, 2015). Schön described how human-centered professions call for “an epistemology of practice implicit in the artistic, intuitive processes which [design and other] practitioners bring to situations of uncertainty, instability, uniqueness and value conflict” (1984, p. 49). This underscores design as a creative and reflective process—an ongoing dialogue between processes, people, and materials in practitioners' work.

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