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Design Thinking Education: A Comparison of Massive Open Online Courses

Abstract The popularity of design thinking is soaring, both as an approach to innovation and as a tool for non-designers seeking to gain a strategic edge over the competition. As more and more people take advantage of Massive Open Online Courses (MOOCs) to bolster their skill sets, it comes as no surprise that design thinking courses have cropped up across various disciplines worldwide, in formal and informal educational settings. In this article, we report on our research into design thinking courses available to anyone online. Our study explored and categorized the different types of design thinking MOOCs available in June 2017. It reveals the what (content), how (pedagogy and assessment), and why of online design thinking courses. The findings we discuss here can support design thinking education not only via the web, but also more generally.

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Introduction

In today's complex, connected digital age, individuals and organizations alike need new tools and skills – entrepreneurial, business, management, leadership, creativity, design, and cross-cultural capacities[1] – that will enable them to strategize and innovate sustainably. To meet the growing demand for such training, higher education providers have begun to make specialized online courses available to wider global audiences. Due to their flexibility, accessibility, and the breadth of subjects available, the popularity of these Massive Open Online Courses (MOOCs) has grown significantly over the last decade.[2] MOOCs are adding to the emergence of micro-credentialing, and enabling learners to supplement their degrees and professional practices with the skills that help them and their employers remain competitive in today's shifting international markets and societies.[3]

Creativity, design, cross-cultural sensitivity, and particularly design thinking are learned by tertiary students in the sciences, arts, business, and medicine alike.[4] Beyond this emphasis in higher education, employers are also focusing on proficiency in these areas among their employees. Organizations from the public and private sectors alike are increasingly turning to design thinking[5] to address wicked problems.[6] Recently, the notion of design thinking has shifted from design as a science[7] to design as a mindset and professional tool for non-designers to develop as a skill.

We need new learning approaches if we are to cultivate design thinking capability – and other twenty-first-century skills – in individuals whose expertise spans multiple disciplines and practices. New technologies have led to new platforms and outlets for online education of all kinds, including design.[8] In addition to face-to-face design thinking courses offered by higher education institutions, MOOCs are providing such content to a wider audience online.[9]

In this article, we will explore how educators are teaching design thinking online to a general and diverse audience. We found a broad range of design thinking MOOC applications. Seven key themes emerged, whose content and pedagogical approaches we will discuss and assess.

Design Thinking Education

Design thinking has gained notoriety across various disciplines because its tools and methods are often associated with innovation.[10] Universities are increasingly incorporating design thinking into their curricula as a result.[11] Long-established components of any design discipline curriculum, design thinking courses are becoming common in business and management education.[12] Design thinking courses often ask cohorts of students from a variety of disciplines – engineering, social sciences, medicine, and education, for example – to solve real, complex problems using a human-centered design approach.[13] In addition to promoting transdisciplinary creative thinking and collaboration, enabling cross-disciplinarity among students can bridge specific gaps in knowledge.[14]

Cara Wrigley and Karla Straker's[15] study of undergraduate design thinking courses forms the foundation for their Educational Design Ladder, a scaffold for the design and progression of design thinking courses within a multidisciplinary context (Figure 1). The ladder reveals that, for design thinking to be successfully taught within higher education contexts across multiple disciplines, "design projects should involve authentic, hands-on tasks; possess clearly defined outcomes that allow for multiple solutions; promote student-centered, collaborative work and higher order thinking" as well as enable multiple design iterations.[16]

The undergraduate Educational Design Ladder demonstrates that the content and pedagogical stages of design thinking must progressively increase in