2017 | Volume 8, Issue 1 | Pages i-ii

SPECIAL ISSUE ON MAKERSPACE DESIGN CASES

Mary Jo Dondlinger¹, Julie McLeod², & Chris Bigenho³ ¹Texas A&M University Commerce; ²Good Shepherd Episcopal Schools; ³Greenhill Academy

According to the New Media Consortium (NMC), makerspaces are "informal workshop environments located in community facilities or education institutions where people gather to create prototypes or products in a collaborative, do-it-yourself setting." The NMC Horizon Reports for K-12 Education and for Higher Education have listed makerspaces as "important developments" for the last 2-3 years (2014-2016). Also referred to as hackerspaces, hack labs, and fab labs, these community-oriented spaces provide tools and resources for innovators to carry out their ideas. Makerspaces have quickly risen to the forefront in educational conversations, and many community organizations, schools, and institutions of higher education have created makerspaces in their facilities and campuses. Additionally, many are on the verge of developing a makerspace for their organization. While lists of equipment and supplies for makerspaces are readily available to those seeking to develop a makerspace, resources documenting the design of a makerspace, the philosophy that informed the design, or the programs implemented within a makerspace are considerably less plentiful. This special issue of makerspace design cases is intended to fill that void.

Recognizing that a makerspace can and—some argue should be as unique as the organization that creates it, we invited design cases on makerspaces in community, K-12, and university settings for this special issue. In particular, we called for manuscripts to chronicle the learning intended to take place in the designed makerspace, rather than solely the design of the makerspace itself. Given that the spirit of the maker movement is to organically support new ways of thinking and problem solving through hands-on design, construction, and iteration, makerspaces in all their variety are spaces designed for various learning or thinking moves to occur.

Copyright © 2017 by the International Journal of Designs for Learning, a publication of the Association of Educational Communications and Technology. (AECT). Permission to make digital or hard copies of portions of this work for personal or classroom use is granted without fee provided that the copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page in print or the first screen in digital media. Copyrights for components of this work owned by others than IJDL or AECT must be honored. Abstracting with credit is permitted. The first four articles in this issue represent space and curriculum designs for various K-12 makers. Holbert, Thanapornsangsuth, and Villeroy describe the challenges of a maker design case that engages fourth graders in designing toys for preschoolers. Wallace, Banks, Sedas, Glazewski, Brush, and McKay share their design of a middle school maker environment in which students build tabletop aquaponics systems, exploring questions about food, food systems, and sustainability. Henderson, Vogel, and Campagna chronicle the design of several middle and upper division makerspaces aligned with their school's philosophy and vision to "put people in the world who make a positive difference" by engaging learners with technology, making, and design thinking. Shepherd, Kvenild, Smith, and Buss's "Unspace Case" details a maker design centered around a public school library whose minimal dedicated space expanded opportunities for public participation, partnerships, and shared resources as the library sought to acquire and circulate STEM resources for K-9 teachers and students.

Dovetailing with the ideas represented by "The Unspace Case," the next two articles highlight makerspaces in public or community settings. Knochel presents a mini mobile makerspace design to support arts curriculum. Halverson, Lakind, and Willett describe a makerspace that--rather than a singular face-to-face or online place--is a *systemwide approach to making*. Called "The Bubbler," this makerspace is stretched across the public library system of a mid-sized Midwestern City and represents a physical place, a series of programs, and an approach to working with patrons of all ages across the library system.

The last four articles represent makerspaces in university contexts. Two of these offer makerspace design cases for teacher education. Dousay chronicles the processes, considerations, and decisions from initial design to the funding of the space and how it aligned with the teacher education mission at the University of Wyoming. Koole, Epp, Anderson, Hepner, and Hossain designed their space to help pre-service teachers become more comfortable with technology, while ensuring inclusivity across age, gender, and culture. Krummeck and Rouse describe a university-wide makerspace, proposing two methods to promote students learning through making in a university makerspace: designing for a maker culture, and designing maker-based learning experiences. In the final article in this issue, Oliver, Moore, and Evans describe a virtual makerspace for students enrolled in an online graduate course on informal learning.

This special issue provides insight on not only the design of makerspaces, but also the varying philosophies that drive

and thrive within the designs. More importantly, the design cases shared here show how makerspaces are designed to support specific kinds of thinking and learning. Some makerspaces are designed to broadly support creativity and innovation; others are more focused on solving specific types of problems. Moreover, readers will find a variety approaches to designing makerspaces, designing learning for makerspaces, as well as the iterative process of design of and in makerspaces.