

Chapter 25

Tinkering Studio at the Exploratorium

Bradley S. Barker

University of Nebraska – Lincoln, USA

ABSTRACT

The Tinkering Studio is located in the Exploratorium Museum in San Francisco, California. The studio is at the forefront of research and evaluation on engagement and teacher professional development in the use of tinkering and making for learning. Divided into two spaces, a floor area for museum visitors and a learning studio for resident artists, allows scientists and exhibit developers to hone their craft and designs. Central to the visitor's experience is the problem space that permits deep engagement of a phenomena and the opportunity to devise meaning through the process of making or in this case tinkering. Tinkering, in the broadest sense, overlaps a great deal with making. Tinkering oftentimes does not lead to a tangible product, and at times there is focus on aesthetics at the cost of functionality as one tinkers. Learning communities can be a challenge in the space due to the drop-in nature of the visits. Learning communities are formed through a carefully designed learning environment that supports social interactions and educators in the space that connect learners. This chapter explores the Tinkering Studio at the Exploratorium Museum.

I think we're just trying to create a sense of joyful learning, and that learning can be fun and playful, and that sense of agency and that you can ask a question and develop a way of coming up with an answer to it. — Lianna Kali

ORGANIZATION BACKGROUND

The Tinkering Studio is housed inside the famous Exploratorium: The Museum of Science, Art and Human Perception, located in San Francisco, California on Pier 15. Opened in 1969, the Exploratorium has served as a learning laboratory to push the boundaries of inquiry-based learning and hands-on investigations for children (Exploratorium, 2018). The Exploratorium encompasses 218,000 ft² (20,253m²)

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with 75,000 ft² (6,968 m²) of exhibit space. The museum has a full-time staff of 245 employees, 250 part-time employees and 126 high-school-aged staff hired as ‘explainers.’ The Tinkering Studio consists of about 1000 ft² (93 m²) of space and is located in the South Gallery of the Exploratorium. Lianna Kali, the Program Leader for The Tinkering Studio, and Deanna Gelosi, Project Coordinator for The Tinkering Studio, provided a tour and answered interview questions regarding the space. The studio, opened in 2013, was purposefully located adjacent to the Exploratorium’s machine shop so visitors can witness museum staff create and work on exhibits in the space. The machine shop has a half-wall, allowing visitors to see and interact with staff in the machine shop, as shown in Figure 1. Kali noted:

... the machine shop is visually accessible to visitors; you can peek over the wall and see people using tools. Especially for some of the ones that are up close, you can ask them questions about, “What are you working on? What’s this machine do? What are you cutting there?” There’s some really neat lathes and things; you can see chips coming off. It’s beautiful.

Figure 1. Looking into the machine shop



The machine shop models tinkering, as most exhibits in the space are built and maintained at the museum and, according to Kali, the process to develop exhibits follows the tinkering process. Developers of exhibits in the space get an idea, build prototypes, and then watch as people interact with the prototypes. The Exploratorium has a dedicated space for exhibit prototypes that allows developers to view their prototypes in action and if they break quickly, pull them back to fix. Kali explained:

... that process that developers go through is what we hope visitors will go through too when they’re in the Tinkering Studio. It might be a different scale of tools and of course, a different time length of how long you’re working on an idea, but that process is really similar.

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