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Do You Really Need a 3D Printer, and Other Essential Questions You Need to Ask about a Museum's Makerspace

Paul Orselli

If you like the idea of creating an active learning environment where museum visitors can use interesting tools and materials while engaging in open-ended design experiences—what is now called a "makerspace"—then this article is for you!

Let's be honest: many funders are excited about STE(A)M and "making," and it is a real consideration to figure out how to take advantage of this attention. However, a makerspace goes beyond cosmetically rebranding a worn-out "recycled crafts" area without changing anything but the gallery signage (a superficial approach at best), or buying a dozen 3D printers to outfit new high-tech "21st Century STEM Occupations Gallery."

Let me pause here to stipulate that I love the idea of 3D printers, in a Jetsons/Sci-fi/World's Fair type of way. The promise of using a tabletop device to create absolutely anything out of any material (even food!) is pretty amazing. The reality, however, is you can spend hours designing a widget the size of a quarter that then takes even more hours to print successfully on the 3D printer… only to often find out that it hasn't. When they work, they're magic, but they're not that simple to operate.

And yet this doesn't prevent thousands of museums and libraries every year from plunking down grant money for a 3D printer simply because they believe (or have been told) every makerspace needs one. Sadly, many of those devices eventually become expensive, high-tech doorstops.

The focus on 3D printers exemplifies how the development of makerspaces in cultural and community organizations can be susceptible to a "Ready, Fire, Aim!" mentality. Makerspaces are perceived as cool and eminently fundable, but often museums start planning spaces and purchasing equipment (Laser Cutters! 3D Printers! Robot Kits!) without considering what a makerspace is all about, and what the qualities of the most successful spaces are. So here are five key questions to consider when developing (or rethinking!) a makerspace in your museum:

1 Do You Need a 3D Printer?

This is ultimately a question of choosing the right tools for the job. 3D printers are cool—no doubt! But is it the best tool for your museum's situation? I would rather see a well-staffed and thoughtfully laid out space with low-tech opportunities than high-tech tools gathering dust in a corner because nobody can use them (or they don't relate to the goals of the space). Which leads us to…

2 Staff Over Stuff?

An unstaffed or unfacilitated makerspace is a wasted space. The best interactions in a good maker space will certainly involve staff and visitors learning together. Does the stuff (tool and materials) you provide help foster those human connections? Are there enough open-ended and new opportunities for visitors (and staff!) to explore together to keep things interesting? Have you thought about what makes a good makerspace staff person, and where you might find them? (Hint: they may already be in your museum.)

Forming creative partnerships with makers in the communities around your museum can be mutually beneficial. This could be as simple as recruiting artists/tinkerers to showcase their work and how they make it to your visitors. You could also recruit retired tool and dye makers, seamstresses, or NASA scientists.

3 Product or Process?

Is it important for you and your visitors that every experience in your space produces a tangible, completed product that can be taken home? Or do some experiences, like painting murals or adding to a large art piece, offer visitors a chance to participate in collaborative opportunities that will grow and change over time? Be careful with managing expectations. If visitors always think your space will provide a make-and-take activity, do you have the capacity to deliver? Do you want to?

4 What Does Your Making Environment Look Like?

Many makerspaces have adopted a rough, workshoppy, "toys for boys" aesthetic that can be off-putting for many people (male or female) who are unsure of their making skills and interests. Why not mix up the look and feel of different areas in your space so you don't stop potential makers dead in their tracks as they peek through the door?

5 Who Are Your Creative Partners?

The best maker spaces grow and evolve based on the ideas and contributions of their users, and these users can extend beyond museum visitors. Forming creative partnerships with makers in the communities around your museum can be mutually beneficial. This could be as simple as recruiting artists/tinkerers to showcase their work and how they make it to your visitors. You could also recruit retired tool and dye makers, seamstresses, or NASA scientists. Makerspaces offer extraordinary potential for tapping the community and increasing museum engagement.

Like most truly interesting exhibit and programmatic experiences, makerspaces do not lend themselves to simplistic formulas or solutions. These spaces are complex beasts that require constant care to function well, much less grow and evolve. But taking the time to consider the questions above will help you keep your programmatic goals in mind, and your tools and materials in order—with or without 3D printers!

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