Carolyn Foote

Making Space for Makerspaces

LIBRARIES have been too long thought of as a warehouse—a place to go to get things. But they've always been much more than that: a place for interactions between librarians and teachers and students, a place where students create projects with the assistance of the library staff, a place where students go to interact with ideas.

Makerspaces in school libraries are a natural fit with the mission of the library—and they are springing up in public libraries all over, providing excellent models for school libraries to model their own spaces after. At first I admit that I viewed makerspaces as a fad, but the more I have learned about them and the more examples I have seen of them, I've realized they can be a very powerful fit with the library mission. After all, we aren't just about print literacy; we are about "understanding the world we live in" literacy.

WHAT IS IT?

So, what can a makerspace be?

A makerspace can be a temporary program or event where students are invited to come in to "make" items, or it can be a permanent part of the library setting, a physical area that is specifically created for students. It can also be what Erica Compton from the Idaho Commission for Libraries identified during her American Library Association (ALA) presentation—"stealth programming"—where you simply provide a table with materials for students to explore as they pass by (powtoon.com/p/fhuo1LXJsV1). It can even be a "pop-up" program, where the library hosts or promotes events that take place elsewhere in the school building.

A formal makerspace isn't limited to the typically thought of set of 3D printers and tools; rather, it needs to closely mirror the curiosities of your own student community. Therefore, the space could have one setup all the time, or a series of different "engagements" for students to experience and explore over time. It can be programs and activities for patrons more traditionally associated with makerspaces, or unconventional ones such as the Idaho Commission for Libraries' branches that hosted an event for kids to build giant cardboard Angry Birds. It can be a series of online challenges such as those shared on this past summer's National Writing Project's Summer of Making and Connecting connected learning massive open online course (blog.nwp.org/clmooc/makes/search-makes).

THE IDEA BOX

An excellent example of evolving engagements is the Idea Box at the Oak Park (Ill.) Public Library, which Buffy J. Hamilton shared in her presentation at the Texas Library Association conference in April. The library uses its large, front glass plate window area as a space for rotating makerspace types of exhibits (tinyurl.com/buffymakerspace). One month they might have artists working in the front window, and in the next month, they might have an area where library visitors can post their wishes and dreams on sticky notes on the wall. It evolves every month, with the input of the community.

As spaces such as these flourish and grow, we have to keep in touch with the needs of our population. What interests and desires do our students have? Curios-ity about gadgets? A need for support for writing? A desire to learn "crafts"? An area for students fascinated by illustration or graphic /comic design? An area for creating healthy foods? During her presentation at ALA, Compton shared that some of the Idaho Public Libraries are even experimenting with a seed loaning and contributing space, tying into the needs of their community.

WHY IS THIS A FIT?

One of the strongest reasons for bringing in makerspaces to a school library is to bring STEAM (science, technology, engineering, art, math) into the library curriculum and programming. School libraries and media centers have long been supporters of traditional print, visual, and media literacies, but the sorts of literacies our students need extend far beyond arts, literature, and media. Hamilton pointed out in her TLA presentation that makerspaces support inquiry and questioning, problem solving, and collaborative social learning since students generally work together—all skills libraries work to support. It also can flip the role of novices and experts, where younger students may have more expertise than adults or older students, as Hamilton pointed out.

And in the era of standardized testing, some of these literacies get "crowded out," however important they might be to our particular students. Furthermore, the focus on standardized testing has squeezed out time for students to pursue their individual passions. The library has always stepped in as a place to supplement and grow students' individual interests, so a makerspace is an excellent way to support them. At the high school level, the formal courses stu-

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dents take are often limited by their credit requirements, so informal ways to engage with other interests is also a plus.

BEING IN A MAKERSPACE

At an Invent to Learn @ISTE event in San Antonio planned by authors Gary Stager and Sylvia Martinez, I had the opportunity to be a student of "making." Stager and Martinez provided a number of items for participants to "play with" throughout the daylong workshop, from conductive paint (paint that conducts electricity) to conductive clay, to programmable Arduinos to batteries, and so on. Each table was layered with instructions and supplies to use, but we were left on our own to explore the items along with the other attendees. It was an eye-opening learning experience, one that I think would be similar for students.

First off, I'm not the most science-oriented person, and I faced a struggle understanding what the different pieces did and how to use them. (I didn't even know clay could be conductive.) Second, I noticed there were interesting dynamics among the female and male participants, which was a different dynamic than I'm accustomed to. This provoked thought about what we design for our students. Do we design spaces more geared toward males/females? How do we invite *all* students into whatever we create? If we are doing more "soft skills" such as crafts, what about something such as letting students create and print their own textiles?

Lastly, giving myself the time to "play to learn" required relaxing my mindset. But the benefit of working through those things is that I learned to practice the "two feet" rule and find a group that I could collaborate with. I learned what all these little gadgets were capable of, which gave me a sense of accomplishment, and I learned to suspend my need for linear learning and allow myself to explore. I had to work through my own mental constructs to set aside my self-judgment in terms of science in order to begin to "play." How beneficial would it be for our students, male and female, to have this social learning opportunity—ways to "explore to learn?"

HOW-TOS

We held our high school library's first makerspace day last spring with the help of our robotics team. They provided a 3D printer and their competition robots, which we supplemented with LEGOs, robot building blocks (the very popular ZOOB-Bots), a duct tape "making area," and so on. Other than the robots, the biggest hit and source of curiosity was the 3D printer, which attracted a diverse group of interested students, both male and female. Robotics students got the opportunity to explain "how things work" to their peers and to their teachers, which was rewarding for them. And students who were tactile had robots (ZOOB-Bots) and LEGOs to "play with" and explore. This event began as a partnership with our robotics teacher who I approached to help, which is one way to get maker events organized in your library. Teachers from many departments could be a part of the process—from science to math to home economics, depending on the purpose of the makerspace designed.

Outside partnerships are another option in our time-limited schedule for bringing makerspace types of activities into the library. Partnering with outside entities also is a public way to bring the community into the school library. Allen Public Library in Fort Wayne, Ind., partners with a local "maker" group that brings in all of the supplies and equipment for the library's programs and teaches patrons how to use them (tekventure.org/maker-station). How powerful would it be if school libraries partnered with community members who bring their expertise and have the opportunity to see a 21st-century library in action?

At my own campus, I decided to start with events, rather than creating a dedicated space, because our student population is highly engaged in AP courses and might be more attracted to "events" than to a permanent sort of space. By making it an event, I can change the nature of the activities to appeal to different parts of our student population. And over time I can come to understand if we need to focus in on one particular area more than others. It also allows me to schedule them when I have time. School libraries don't have the same sort of staffing that public libraries do, and in fact sometimes there is only one librarian.

After hearing about the variety of makerspaces public libraries and local municipalities are experimenting with, I'm ready to dive in. Libraries are already about exploring ideas and remaking them into something new and unique. Expanding that vision to help students explore their varied passions and interests outside the core curriculum provides a much needed support to our students as lifelong learners. That makes makerspaces an idea to watch. ◼

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