voya

voice of youth advocates

▶ **VOYA NONFICTION HONOR LIST 2012**
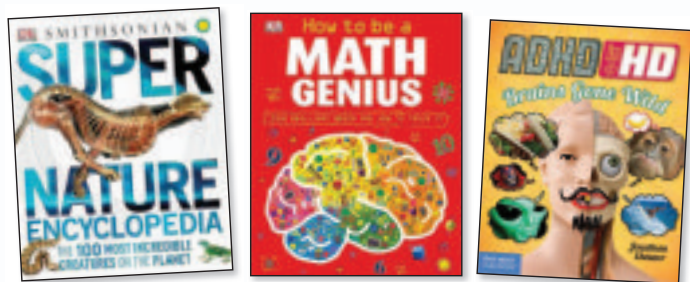
▶ **LIBRARY AS MAKERSPACE**

▶ **NOTEWORTHY BOOKS IN SPANISH FOR YOUNG ADULTS**

Making Education More Powerful

How Learning Labs are Transforming Out-of-School Learning for Youth

▶ **SUSAN HILDRETH**

Every afternoon, teens stream through the doors of the YOUmedia lab housed in the North Dade Regional Public Library in Miami. Young voices start to fill the air with podcast recordings they write and produce using brand new Apple computers. In the next room, young people edit self-produced documentary films with Final Cut Pro, industry-standard software for film production. YOUmedia Miami's state-of-the-art technologies, including Adobe CS-5 Suite graphic design software and Garage Band music recording software, keep teens coming back to the center. Personal support from teaching mentors and peers, coupled with endless opportunities to pursue their passions, help young people connect their interests to potential career paths and life goals.

YOUmedia Miami is an inspiration for the recent development of Learning Labs in our country's public libraries and museums. They are one part of a new, research-based approach to education called Connected Learning. It is learning that is highly social, interest-driven, and relevant to young people.

MENTOR BRANDI AT THE LEARNING LAB IN COLUMBUS WALKS A STUDENT THROUGH A "KICK-STARTER" TECHNOLOGY PROGRAM.

CONNECTED LEARNING IN ACTION: A NATIONAL NETWORK WITH LOCAL IMPACT

As educators, our objective is to prepare all of our youth to meet the challenges of today's global economy and to obtain the higher-order skills that 21st-century jobs demand. As of 2010, 59 percent of U.S. jobs require skills acquired through a postsecondary credential. By 2018, this figure will increase to 63 percent of all jobs, a trend that is likely to continue to grow. Schools cannot shoulder this burden alone. Communities and families must also provide engaging and effective learning opportunities for youth.

Community-based institutions like libraries and museums are well-positioned to engage students with personalized learning experiences and support. Over the past two years, a national network of twenty-four public libraries and museums has been planning, designing, and beginning to open Learning Labs. These programs have received support from the Institute of Museum and Library Services and the John D. and Catherine T. MacArthur Foundation. These grantee organizations are in the planning and development phase; however, a handful of pilot Learning Labs opened this year. While they continue to refine their models, these organizations have seen the important role that this framework can play in fostering mentorship and building community networks.

THE POWER OF MENTORS

For too many young people, their next step beyond high school is unknown—or, at least, how they will get to that next step is unknown. Many young adults, particularly those from less privileged communities, have limited exposure to available opportunities and career choices. At the core of Learning Labs are skilled mentors who model pathways for youth and support the development of youth identity as creators, users, and teachers of digital media. Learning Labs help teens pursue their interests, build a supportive network of mentors and peers, and link their passions to academic achievement, a meaningful career, or civic engagement.

As libraries and museums plan their Learning Labs and begin to launch pilot programs, we repeatedly hear how important good mentors are to creating a place where teens can connect, collaborate, and learn.

"People are always the most expensive resource, but you really get what you pay for," said Julie Scordato, teen services specialist at the Columbus (Ohio) Public Library, which just launched a pilot Learning Lab in February.

Mentors at the Columbus Learning Lab help teens shift from simply replicating what they see online to bringing their own ideas to life. Instead of simply sketching concepts for new clothing designs, mentors help teens learn about the fashion industry and how to create clothes on their own. Instead of just designing on paper what a robot could look like and do, mentors help teens build them. The mentors are a constant source of confidence and encouragement to these teens, many of whom may not receive this type of support in other aspects of their lives. Mentors are also critical to the development process, application of new programs, and evaluation of operations in the Learning Labs. Each day, the two Columbus mentors write down their experiences in the Learning Lab to keep track of successes and improve wherever they can.

In the first few weeks of the piloted Learning Lab, Brandi, a mentor at the Columbus Learning Lab, noted each day that many of the students were overwhelmed by the amount of time a new project or learning a technology skill could take. To help jumpstart the kids' involvement, she created "kick-starter" projects designed to take only thirty minutes to complete. The kick-starters have been tremendously successful in easing students into new technologies and projects, and helping them start long-term skills development. Some Learning Labs are also incorporating mentoring into their development and planning processes. The public library in San Francisco developed a mentor-led, paid youth advisory board comprised of local teens. It is an active decision-making voice that recently provided input and feedback to the architects designing the physical space of the Lab. The students were excited to see their architectural ideas reflected in Lab's construction.

Cathy Cormier, the manager at the library's teen center in San Francisco, said that the mentor-led teen advisory board has really engaged the youth as active stakeholders, and it empowers them to see the Learning Lab come to life reflecting their ideas and input. With the guidance of adults on staff, the teens are encouraged to make thoughtful and informed decisions about the programming and space. They are gaining real-life skills and knowledge and are learning how to collaborate with each other—a perfect example of Connected Learning in action.

WHAT IS CONNECTED LEARNING?

Connected Learning, developed with funding from the John D. and Catherine T. MacArthur Foundation, is a research-based education approach that makes learning relevant to young people, to real life and real work, and to the realities of the digital age, where rapid change is constant. Connected Learning links young people to their interests, to inspiring peers and mentors, and to online tools, so that they can build on the learning that they do in school and at home.

The goal of Connected Learning is to develop lifelong learners who have the higher-order skills, including critical thinking, creativity, communication, and collaboration, needed to succeed in today's economy and to become global citizens. This is an approach proven to better engage young people and help them achieve more lasting learning outcomes.

CREATING LOCAL NETWORKS

In addition to providing teens with unique, captivating places to pursue their interests, institutions are benefitting from the process of planning and designing Learning Labs as well. Developing the Learning Labs has helped create unique, powerful, and sometimes unpredictable partnerships among community organizations.

In St. Paul, Minnesota, the public library system and the city's Parks and Recreation Department know that a significant overlap exists in the kids that use their services. After hearing about the first Learning Labs grant opportunity in 2011, the St. Paul public library reached out to its longtime unofficial partner to submit a formal partnership proposal.

Together, the two city departments are pioneering a blended service model that combines the activities and goals of the library and the Parks and Recreation Department. A new facility, set to open in 2014, will house a library, a parks and rec center, and the co-created and managed Learning Labs space. In the meantime, they have formed an advisory committee which meets weekly and a teen advisory group to help define current and ongoing activities.

Creating new community partnerships that advance youth learning and opportunity is a tremendous, if not unforeseen, outcome of the Learning Labs grants.
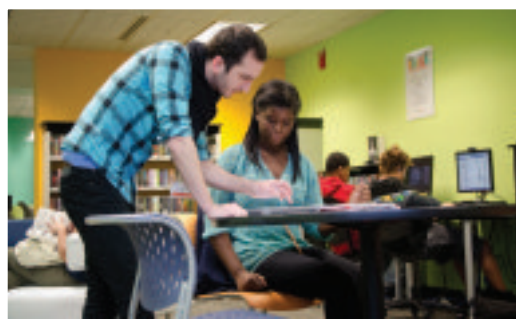
TEENS ARE ENCOURAGED TO EXPLORE AND "GEEK OUT" WITH THE LAB'S TECHNOLOGY AND GUIDANCE FROM MENTORS.

effective learning opportunities for young adults. By building on our existing strengths and fully using the tools of our connected age—just as generations before us harnessed the advances of their times—we can help create the makers and lifelong learners that our era demands.

Museum and library staff, by nature, are eager to help kids learn and master new skills. If we want to strengthen our role as community anchor institutions, expand our community of patrons, and provide relevant, high-quality learning opportunities for young people, we need to change the way we work with youth. As our institutions change, we need to find new ways to engage our community's young people and ensure they benefit from the rich learning opportunities around them. We can do this by building on our existing programs and by complimenting what we and our partners already do well with new approaches that engage young people, foster their interests, and help them to become the makers and producers of their own learning path.

Learning Labs can bring learning to life for teens across our country. ■

Georgetown University Center on Education and the Workforce. "Help Wanted: Projections of Jobs and Education Requirements through 2018." http://www9.georgetown.edu/grad/gppi/hpi/cew/pdfs/FullReport.pdf.

OUR OPPORTUNITY: JOIN THE MOVEMENT

We have a unique opportunity to help make libraries and museums even more relevant and to "own" learning in a new way by providing

Susan Hildreth was appointed by President Obama in 2011 to lead the Institute for Museum and Library Services (IMLS) and is serving a four-year term at the Institute.

WHAT ARE LEARNING LABS?

Learning Labs are programs and spaces in museums and libraries where Connected Learning comes to life. They are places where young people, with the support of adult mentors, can build on their own interests and use their curiosity as a guide to experiment, create, and discover their talents. Equipped with engaging digital media tools, Learning Labs empower and motivate learners to identify and pursue their true passions—and turn those passions into pathways to new skills and knowledge. Soon, learners become creators and makers of ideas and content.

Learning Labs ensure all students have opportunities to engage in learning outside of the classroom by:
• Providing teens with a robust and supportive network of adult mentors and peers that encourage them to stretch their learning, explore new interests, and dream big,
• Closing the gap between school-based learning and interactive, hands-on learning outside the classroom, and
• Taking advantage of technology and the Internet's ability to help young people develop knowledge, expertise, skills, and new literacies.

For example, at Learning Labs, young people can discover how a basketball connects to the physics concepts in their homework assignment; how a favorite song relates to writing poetry; or how elements of design are required to transform an empty block into a thriving community garden. And when peers and mentors offer encouragement and guidance, those connections can form deep and lasting roots.

The Youth Maker Library

▶ **ERINN BATYKEFER**

When I walked into Sector 67 (*http://www.sector67.org*), a community makerspace in Madison, Wisconsin, for a tour with librarians from Madison Public Library, my initial thought was, "*This feels like a high school tech ed shop.*"

There was a scroll saw in one corner and a welding table in another, and the place was stacked with scrap wood, metal, plastic, and foam used in a variety of projects. But the closer I looked, the more I realized that Sector 67 was like a high school tech ed shop directed by something other than a standard curriculum . . . something like *community interest*.

While my group toured the space, I saw a variety of awesome tools and projects in the works: There was an industrial sewing machine where someone was creating a leather work project; a pottery wheel and a variety of clay sculptures; an arcade console that had been re-programmed with vintage games; a series of computers the self-described "nerds" used to write new code for video games and other programs; a Makerbot 3D printer; and a 3D scanner. People can pay to join the makerspace and enjoy the collaborative use of all of the space's resources at any time. Folks do have to be trained in the use of equipment like lathes, kilns, and saws before they can freely use them.

Sector 67 is a makerspace dedicated to providing an environment where people can learn and teach techniques for creating next-generation technology. This means software, hardware, electronics, iPhone/Android applications, and games, in addition to art, sewing, pottery, glass, and metalwork
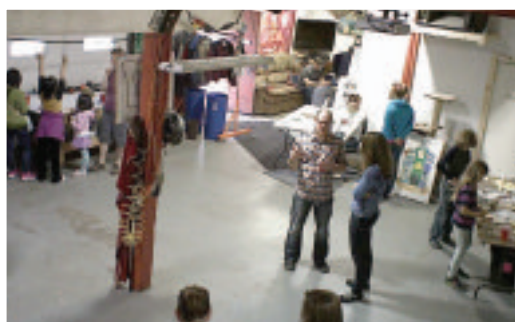
THE SECTOR 67 WEBSITE INCLUDES A WEBCAM THAT FEEDS NEW PICTURES OF WHAT'S HAPPENING ON THE MAIN MAKING FLOOR EVERY 30 SECONDS. THIS IMAGE WAS TAKEN ON SATURDAY MAY 4 AROUND 11:30 AM.

TWO STUDENTS WORK TOGETHER TO EDIT THEIR LATEST FILM AT THE CLP-EAST LIBERTY LAB, JANUARY 2013.

projects. Makerspaces like Sector 67 create a community of shared tools, know-how, and resources for creative projects, and they nurture the practice of "learning by doing." The splash page of the Sector 67 website declares the principles they carry out in the shop: "Zero experience necessary, only enthusiasm to learn required."

Sound familiar?

MAKER CULTURE AND LIBRARIES

It makes sense that libraries would be drawn to a skill-share and materials-share collective like a makerspace. On the most basic level, libraries are about connecting people with information: The first item on the Library Bill of Rights (*http://www.ala.org/advocacy/intfreedom/librarybill*) says, "Books and other library resources should be provided for the interest, information, and enlightenment of all people of the community the library serves." What's cool about this basic tenet is that today's interpretations of "information," "resources," and "enlightenment" are evolving to include the kind of synergistic community knowledge-sharing that happens at places like Sector 67.

Makerspaces interpret the "free access" tenet of librarianship broadly, encompassing not only free access to the DIY manuals and information that inspire makers' creative ideas, but also free access to the materials, brainpower, and manpower to make their

ideas happen. If we take Sector 67 as a model, we can see how a makerspace crystallizes the main attributes of maker culture:

It's collaborative. Makers work on projects with one or more people, engaging with the project as a group. Making becomes a social activity; problem solving becomes a group effort.

It's facilitated. Makers interact with and learn from skilled professionals and hobbyists who are willing to share their expertise and techniques.

It's incremental. Maker culture promotes an approach to learning that relies on accruing a skill set over a period of time, usually by working through a big project step by step, and learning what you need to know to accomplish it as you go.

At the Library as Incubator Project, we define the *library* makerspace in the same kinds of terms, but with more of a focus on outreach, partnership, and education, than a traditional makerspace or hackspace might. Here's our definition:

Makerspaces – *n. pl.* Collaborative learning environments where people come together to share materials and information, and to learn new skills. Makerspaces are not defined by a specific set of materials or spaces, but rather a mindset of community partnership, collaboration, and creation.

Libraries exist to provide free, egalitarian access to information, but the information landscape—especially when it comes to youth patrons—is wildly different than it was even five years ago. Your seventeen-year-old patrons? They were in first grade when **Facebook** was founded. They were teens before **Instagram** even existed, and now they take and post hundreds of pictures on their phones. For half of their lives, **YouTube** has been a popular place to not only watch videos of red pandas sneezing, but also to create and share their own videos. The way teens interact with information is participatory, and it *creates new information.*

The maker movement emphasizes peer-to-peer skill sharing, collaborative learning, and hands-on practice, ideas, and techniques that fit into the library's focus on open education, lifelong learning, and information literacy—especially if we define "information" broadly. As Lauren Britton notes in her excellent article series about makerspaces in libraries, "We are no longer just consumers of information, we are also creators of information—information that can be uploaded, blogged, shared, liked, and tweeted. The information that our patrons create, on a daily basis, is valuable. It is a part of our community" (*http://publiclibrariesonline.org/2012/10/a-fabulous-labaratory-the-makerspace-at-fayetteville-free-library/*).

Physical and digital materials like books, magazines, movies, and music are great, but there is information out there that can't be purchased, catalogued, and put on the shelf in order to provide access. How can you connect teens with the information inside an

LIBRARY PARTNER DJ HANK D LOOKS ON WHILE A STUDENT AT A HIP-HOP ON L.O.C.K. WORKSHOP AT THE CLP-EAST LIBERTY LAB TRIES HER HAND AT THE TURNTABLE.

artist's head, for example—her skills and ideas and the years she has spent honing her craft?

The difference between reading a book about printmaking and *seeing* a printmaker cut a design into a linoleum block—being able to ask her questions about the block you're working on—is huge. Not everyone has access to this kind of information because it's active; it *requires* participation, not just rote learning. So when a library offers activities that provide an access point for teens to engage the part of the brain that responds to hands-on learning, the library becomes not just repository, but *laboratory*. And it is facilitating the whole learning process.

What all this boils down to is something really interesting: the intersection of maker culture and youth services. As librarians, we need to find a way to facilitate access to an expanding pool of information, and as youth librarians, we also need to create a space in which teens—what they think, how they feel, and what they create—matter.

HOW THE LIBRARY MAKERSPACE CAN SPECIFICALLY BENEFIT YOUTH

At the Wisconsin Science Festival in September 2012, creativity expert Sir Ken Robinson gave the keynote lecture. His famous TED talks advocate for a radical change in our education system—one that would acknowledge, value, and cultivate many different kinds of intelligence, rather than relentlessly forcing students to conform to "achievement" standards that can be tested with a scantron exam. The current system, he argues, creates "good workers," but not "creative thinkers," and it squanders the potential of millions of young people. In his Science Festival lecture, he made several points that provide context for the discussion of library makerspaces and their potential to serve the educational and developmental needs of youth:

• Creativity needs to be encouraged, at the very moment when the structure of our education system is doing much to discourage it.

• Creativity is not for a "special sort of people." It is for and inherent in everyone.

• Creativity is a process. It is a process that can be learned or taught.

• Cultivating a space for creativity is about "climate control." Given the right circumstances, opportunity, and attitude, creativity has a shot.

Youth librarians strive to provide emotional, educational, cognitive, and developmental support to their teen patrons. It's a huge and necessary job, and not an easy one, especially when we add the massive cuts to education and library services that many states face annually and the devastating effects of standardized test curricula to the usual struggles of growing up. But libraries are unique among educational institutions—they promote and facilitate two forms of self-directed learning: informal learning, which is outside the scope of a state or federal curriculum; and autodidactic learning, in which someone learns something on their own. This means that libraries are perfectly

THE HIP-HOP ON L.O.C.K. WORKSHOPS AT THE LABS COMBINED HANDS-ON EXPERIMENTATION WITH A STUDENT-DIRECTED MINI-LECTURE WITH VIDEO EXAMPLES BY A LOCAL EXPERT FROM THE PARTNERSHIP ORGANIZATION.

situated to cultivate a space where creativity can happen—to "control the climate"—and give youth patrons the opportunity and the means to explore the full range of their intelligence.

There is potential for a library makerspace to not only foster creativity in new and important ways, but also to help librarians support key aspects of adolescent development. Let's consider the changes that most adolescents go through between the ages of twelve and eighteen:

Younger adolescents will experience great changes in their cognitive abilities: synaptic pruning will streamline how they process information, allowing for greater problem-solving skills and reasoning.

Teens' limbic systems—which control emotion, behavior, and motivation—are in flux, creating a need for new ideas, experiences, and even risks (in addition to strong reactions and mood swings).

As part of the general cognitive shift, teens may have a hard time differentiating between what others think and their own preoccupations (usually, they assume others will judge them as harshly as they judge themselves).

Teens who are early- or late-bloomers may feel isolated by an out-of-step transition and may suffer socially (Coleman).

Couldn't a library support all of these transitions with a makerspace?

Cognition: Library makerspaces can provide a safe space where teens can develop and hone their new cognitive and learning abilities through hands-on activities. They can expose teens to new skills, new people, and new ideas on a constant basis. Makerspaces allow for participatory learning, a kind of educational engagement that Project New Media Literacies identifies with these principles:

-heightened *motivation* and new forms of *engagement* through meaningful play and experimentation;

-learning that feels *relevant* to students' identities and interests;

-opportunities for *creating* using a variety of media, tools, and practices;

-*co-configured* expertise where educators and students pool their skills and knowledge and share in the tasks of teaching and learning; and

-An integrated system of learning where *connections* between home, school, community, and world are enabled and encouraged. (*http://www.newmedialiteracies. org/2011/04/the_characteristics_of_ partici/#more-1194*)

"Makerspaces can provide students *and* teachers opportunities to exercise these elements of participatory learning and to form . . . affinity spaces, communities formed around passions and shared interests" (The Unquiet Librarian).

New ideas, experiences, and risks: The DIY method of "try it and see if it works," so useful when creating something totally new, can also provide enough risk to satisfy some teens' thrill-seeking

TEENS USE LIBRARY MATERIALS TO FIND INTERESTING IMAGES TO COPY ONTO TRANSPARENCIES DURING A CYANOTYPE PRINTING WORKSHOP AT MADISON PUBLIC LIBRARY, PART OF THEIR INNOVATIVE MAKERSPACE PROGRAMMING MODEL CALLED "THE BUBBLER."

A LIBRARY AS INCUBATOR PROJECT VOLUNTEER HELPS STUDENTS GET A PIECE OF LIGHT SENSITIVE WATERCOLOR PAPER. THE PAPER HAD TO BE KEPT IN OPAQUE GARBAGE BAGS TO KEEP IT FROM BEING EXPOSED TO TOO MUCH LIGHT BEFORE THE DEVELOPING PROCESS.

behavior. Clearly, a service like this can provide a safe space where adolescents can not only develop and hone their new cognitive and learning abilities, but also be exposed to new skills, new people, and new ideas on a constant basis.

Self-perception: The collaborative environment of a well-run library makerspace also allows for non-judgmental interaction. In addition to the potential for a makerspace to provide cognitive and emotional support for adolescents, as outlined above, the social and educational opportunities that skillshares provide are equally good and, in some cases, necessary. The key is the essentially collaborative educational model of the DIY movement: Little can be accomplished without the support of other makers, either by sharing materials, collaborating directly on a project, or simply talking through a problem. Adolescent egocentrism is part of the general cognitive shift, but with social implications: "Essentially, the individual finds it difficult to differentiate between what others are thinking and his or her own preoccupations" (Coleman 45), and this deficit may contribute to the idea of an "imaginary audience" that the adolescent is constantly performing for, assuming others will judge her in the same way she might judge herself (46). The collaborative skillshare of a makerspace, however, forces interaction with a *real* audience, one that is unlikely to judge very much, if at all, and likely to value very different skills than those held up in other contexts. The dissonance between what is expected and what actually occurs in the context of a makerspace—where creating, trying new things, and process are highly valued, even if the product doesn't work—may serve to support adolescents as they learn to understand others' views, and internalize a more realistic social construct and vision of themselves.

Tough Transitions: Maker clubs or meetings at the library can also support early- or late-bloomers as well. As Buffy J. Hamilton notes, the participatory engagement a makerspace facilitates is an opportunity for teens to form "affinity spaces," which she defines as "communities formed around passions and shared interests." The library is already a safe haven for many teens who struggle with an out-of-step transition, but makerspaces have the potential to create a community where physical development is negligible as social currency. Desirable, successful traits (and points of pride) for maker culture include a willingness to try something new, ability to acquire and apply a new skill, and the tendency to get obsessed with a new project—creative impulses that are often suppressed in school, and which have nothing to do with how tall or physically developed you are. Given the opportunity to build something new and to take control of their world by re-making it, early- or late-blooming teens can bolster their confidence and relate to peers in a new and positive way.

STEM / STEAM: MAKERSPACES AND EDUCATION

President Obama's "Educate to Innovate" initiative "encourages young people to create and build and invent— to be makers of things, not just consumers of things," at a time when arts, tech, and media programs are being cut from public school curricula, yet teens and "emerging adults" are expected to be creative thinkers and have a level of skill with the latest technology, in order to segue into higher education or enter the workforce. Literacy, of course, is the linchpin of library service, especially for youth, and right now, the world *expects* young people to have a level of transliteracy—"the ability to read, write, and interact across a range of platforms and tools"—in order to be successful. The library makerspace can provide a necessary bolster for education because it gives us a way to promote multiple, integrated literacies; it's an environment that can help teens learn to create and communicate across platforms.

As we move into an ever more tech-heavy world in school, work, and leisure, we simultaneously move into a future of library spaces and services that focus less on traditional library collections, and more on library community-building and skill shares. At the same time, we are also re-formulating what it means to be an adolescent, how we define the transitions inherent in this phase of life, how long it takes to reach "adulthood," and what is necessary to successfully pass that threshold. The confluence of these trends is the library makerspace: A public space for making of all kinds—tech, art, craft—that can not only fill in the gaps in an increasingly partial and myopic public education system, but also support marketable skills-based learning for older adolescents who will be expected to acquire high-level technological skills to function in an increasingly wired society and workforce. And let's not forget perhaps the most compelling reason to consider makerspaces as a legitimate youth service in libraries: Makerspaces are fun!

THE MAKERSPACES: TWO EXAMPLES

Examples of makerspaces abound, and are as different as the communities they serve. There are even virtual iterations of makerspaces, like *MAKE*'s Maker Camp, which took place during the summer of 2012. Using **Google Hangouts** as a videoconferencing platform, Maker Camp hosted workshops for an audience of teens. Experts introduced a new project each day, and campers created the projects on their own, facilitated by hangouts that allowed them to ask questions of the experts and to troubleshoot collaboratively.

Though many physical makerspaces, like the Fayetteville Free Library FabLab, originated as a tech-heavy fabrication space like Sectory 67, the template for a makerspace is simply a collaborative

A FINISHED CYANOTYPE PRINT. LOCAL ARTIST ALIZA RAND, WHO SPECIALIZES IN CYANOTYPE PRINTING, FACILITATED THE WORKSHOP WITH A BRIEF LECTURE ON THE HISTORY OF THE ART FORM, AND AN EXTENSIVE HANDS-ON WORKSHOP USING LIBRARY MATERIALS. THIS FINISHED PRINT FEATURES CHARACTERS FROM THE POPULAR *CHARLIE & LOLA* BOOKS.

PHOTO BY ERINN BATYKEFER

skillshare; the materials used and the stuff made could be anything. This template is perfect for teen services because it is so flexible: It can accommodate both traditional art and craft projects and extend to tech-based building or digital media projects, depending on your library's resources. Remember, you don't have to be an expert to make this work. Outreach and partnerships are the keys here; the makerspace itself and the programs that are a part of it serve as a way to organize "community knowledge" and provide access to it. In a way, it's just like collection development.

CARNEGIE LIBRARY OF PITTSBURGH'S *THE LABS*

Carnegie Library of Pittsburgh overhauled their teen services beginning in the summer of 2012 so that makerspaces would be the central service at four branch libraries. These branches were chosen specifically to support area teens who would not have access to technology education in school and who did not have many options for after-school programs.

The Labs @ CLP, as these digital media centers are called, is an example of a "hybrid space," somewhere between structured curriculum and free exploration. The Labs supply both equipment (like iPads, digital cameras and recorders, and editing software) and expertise in the form of Labs Mentors, who teach weekly classes in animation, photography, sound editing, and other skills. Mentors are also on-hand during open Labs hours when teens can come in to work on their own projects and get one-on-one help.

The Labs don't limit themselves to in-house expertise, though: their most successful programs rely on partnerships with local arts organizations like Pittsburgh Filmmakers, Hip-Hop on L.O.C.K., and Hack Pittsburgh. In a DJ workshop organized in partnership with Hip-Hop on L.O.C.K., for example, a local DJ surveyed participating teens about their favorite artists and songs, and used that information to talk about the roots of hip-hop as an art form, with video examples of classic acts and innovations. The teens got a chance to work with the DJ to experiment with a variety of effects and sounds using turntables, gaining confidence as they went.

In this model, teens at the Carnegie Library of Pittsburgh are able to learn about a lot of cutting edge equipment, software, and marketable skills through the process of creating and sharing their own digital art, and they're also forming a network of real-world connections with knowledgeable, supportive adults. And the library did not have to purchase turntables or expect their librarians and mentors to become experts in hip-hop and DJing—they just had to know who the experts were, and connect teens with those people.

> The Labs don't limit themselves to in-house expertise, though: their most successful programs rely on partnerships with local arts organizations like Pittsburgh Filmmakers, Hip-Hop on L.O.C.K., and Hack Pittsburgh.

A LOCAL MAKER SERVES AS AN EXPERT FACILITATOR DURING MAKER PROGRAMMING FOR THE BUBBLER, LIKE THIS SCREENPRINTING WORKSHOP.

MADISON PUBLIC LIBRARY'S *THE BUBBLER*

The Bubbler at Madison Public Library is a unique iteration of a library makerspace in that it is a programming model that is not tied to a specific space. It takes the outreach and partnership aspect of successful library makerspaces a step further by hosting pop-up events at all the library's branches. These workshops are taught by local artists and other experts, who bring with them not only specialized knowledge, but also equipment and supplies. This keeps library costs down, and also strengthens the library's ties to its community—specifically the arts community.

The Bubbler got its start as a programming idea specifically for teens, in a concerted effort by MPL to develop a variety of creative after school activities for youth. The pop-up model was practical because it allowed all branches to host Bubbler programs, and also because it gave outreach librarians the opportunity to bring drop-in programs, like animation stations and other technology, directly to the places where teens were already spending time, like community centers and after school programs. Like The Labs at CLP, these sessions provide opportunities to learn new technology and skills through digital projects, and rely on the assistance of mentors who can help troubleshoot.

The Bubbler concept has since expanded to include programming for all ages and specific programs that mix teens, adults, and the elusive twenties and thirties sets. This cross-generational approach to maker programming, paired with strong arts-based partnerships, allows for a lot of exchange between guest experts and students, and among students of all ages as well—teens and adults collaborate with one another in a uniquely participatory environment, where the tasks of teaching and learning are shared for the benefit of everyone in the room.

The Bubbler's recent Cyanotype Workshops are a good example of this approach. Local artist Aliza Rand shared knowledge and expertise and contributed materials in the form of watercolor paper painted with a special blend of light-sensitive chemicals that participants would use to create "photograms" under a UV light. Rand began by showing a brief series of slides which included an outline of the chemical process of cyanotype printing, examples of different printing techniques, and a look at the work of Anna Atkins, an English marine botanist who was the first female photographer, and whose beautiful and rare photograms served as inspiration for the hands-on workshop which followed. The library leveraged its extensive collections of illustrated books, including titles on art and design, natural history, anatomy, and even favorite children's books, as a way to showcase the collection and provide useful and interesting material for creating cyanotype prints.

The rest was up to the participants, who talked, experimented, and shared materials for over two hours, learning from the guest artist and one another, regardless of age. When the program was over, everyone had made something new *and* had met someone new. ■

LINKS AND RESOURCES

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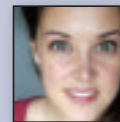
Tapping into Teens' Creativity and Turning Libraries into Makerspaces

▶ **KAREN JENSEN**

Richard Florida, author of **The Rise of the Creative Class**, is celebrating the ten-year anniversary of his work with a new edition. An interview with Florida on NPR reinforced the idea of transforming libraries into creative spaces, also called makerspaces. Cities thrive, Florida states, when elements are put into place that attract "creative" people; people who create art, ideas, and new technology. The public library is a perfect place to promote creativity among the teens in your community.

According to Florida, the Creative Class, a group of people that focuses on creation, whether it is the creation of art or technology, will be the driving influence for the future. They are the artists and scientists and innovators and they will be the driving force of the future. The communities that thrive in the future will be those that can attract and keep the Creative Class.

There is an emphasis in our culture right now on creativity. Best Buy has recently announced what they are calling the College Innovator Fund (*http://www.inc.com/maeghan-ouimet/best-buy-launches-college-innovator-fund.html*) in which they are giving away over $100,000 in a quest to find the next innovative idea. Sprite has introduced its Sprite Films contest (*http://www.sprite.com/films?WT.srch=1*) and allows the public to vote on a top film on its website. Google "public library makerspace" and you will get a look at the discussion that is happening in the library world, too. There is this growing acknowledgement that libraries make great makerspaces; the shelves are filled with the resources needed to pick a creative outlet and get started.

As the former teen services librarian at Marion Public Library, I put more of an emphasis on technology in my programming to spur creativity. Whether it is learning how to create posters and bookmarks using a graphics package, or learning how to put together and edit videos, there is a wide variety of ways that you can help teens improve technology skills while encouraging creativity.

I put together an afterschool program called the Teen Tech Tribe. MPL had a four-computer learning lab that was an ideal space to meet with a small group of teens. Our first completed project included putting together a short Animoto promo ad for our Teen Summer Reading Club. At one of the after school Teen Coffee Houses, we took pictures and then we used the free version of Animoto to edit our video.

The Library as Incubator Project (*http://www.libraryasincubator.org*) shows how art and libraries go hand in hand. The site highlights a wide variety of library projects that focus on the arts and give ideas to inspire libraries to fulfill their role as artistic centers. It is a good resource to go to for inspiration, and they take submissions so that you can share your own success stories.

Many authors share the art submitted to them by teens that is based on their books. Invite teens to come to your library and create their own fan art. You can host a book and art discussion group in which teens share their artwork and talk about the books that were the inspiration.

Margot Wood is a photographer who has put together a website, The Real Fauxtographer, which highlights her book-inspired art. (See page 26.) She set a goal to do a variety of pictures inspired by the YA books she was reading. Using The Real Fauxtographer project as a guide, a photography workshop would be another great way for teens to use technology, be creators, and demonstrate the connection between books and art.

Making your library a makerspace involves little more than opening your meeting room and inviting your teen patrons to come and create. Many of them will have their own materials that they can bring with them. This can be an unstructured creative time when teens draw, knit, or whatever they choose.

You can also develop specific art or technology projects for teens to make. For example, Altered Books uses discarded library books to create art; there are a lot of ideas for this on the Teen Programming in Libraries Pinterest group started by Heather Booth. The Public Library of Mount Vernon and Knox County in Ohio recently had a staff member who dabbles in graphic design do a GIMP workshop. GIMP (*http://www.gimp.org/*) is a free program you can download online.

Art through the Ages was a program in which I set up stations where various types of art throughout history were featured, and teens created their own versions. Station 1 was prehistoric art in the form of cave-wall painting. Brown butcher paper on the wall served as our cave wall, and books about cave paintings and hieroglyphics were used for reference to create our prehistoric mural. The final station was futuristic art in which old computer parts were used to create robot sculptures. The stations in between included projects such as stained glass, decoupage, impressionism, and more.

Display the teen-created artwork in your library. If you have the space, dedicate wall space for a rotating teen artwork display. A bulletin board or hanging clipboards can display the art, or you can do what Justin the Librarian has done and create a teen art gallery in your library. (*http://justinthelibrarian.com/category/libraries/make-art-for-the-library/*)

Becoming a makerspace promotes the 40 Developmental Assets (*http://www.search-institute.org/developmental-assets*) by providing a space for creative activity. The more assets teens have, the better for your teens and your community. ■

RESOURCES ABOUT MAKER SPACES

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*Karen Jensen is the youth/teen services librarian at the Betty Warmack Branch Library in Grand Prairie, Texas. She has been a teen services librarian for almost twenty years and has been a reviewer for **VOYA** since 2001. Jensen is the creator and administrator of the Teen Librarian Toolbox, a blog where she shares her passion for all things library and teen services. Her previous articles include "Mpact, An Asset Builder's Coalition, Working with Community Agencies" (**VOYA** 2011) and "If You Feed Them, or Not, Will They Come? Programming for T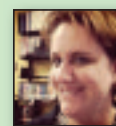eens with Allergies"(February 2012).*