

AfterSchool

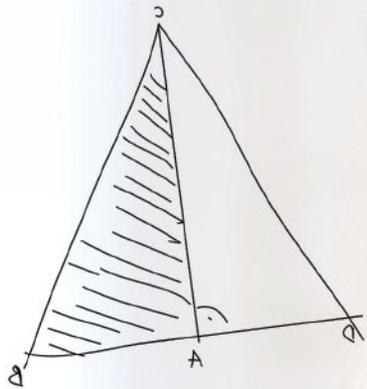
The Official Publication of the National AfterSchool Association

February 2015

Today



A +



TOP TECH TRENDS

IN AFTERSCHOOL

**USING TECHNOLOGY
TO SUPPORT
AT-RISK YOUTH**

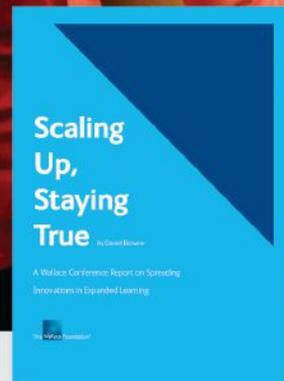
**TECHNOLOGY
& FITNESS
IN AFTERSCHOOL**

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How does it align with your funders' vision?
To your other program sites?



Grantmakers and Thought Leaders on Out-of-School Time: Survey & Interview Report



Scaling Up, Staying True: A Wallace Conference Report on Spreading Innovations in Expanded Learning

Two new reports from Wallace share insights from funders and field leaders on outcomes they seek in afterschool programs, and on the tricky business of scaling up without losing your vision.

These and other free resources are available at www.wallacefoundation.org.

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Winter 2015

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- Joshua Besserman, 21st Century Program Director



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Gina Warner

Technology. The word alone has the ability to both excite and terrify me. It excites me, because I can understand and appreciate the way it makes me more effective and productive in my personal and my professional life. I'm also excited because I've been able to see and experience the doors of learning and the excitement it opens for children. And the whole world of Facetime is still mind-boggling to me!

At the same time it terrifies me, because I feel so unsure of my own technological abilities. Unlike kids today, all of my college papers were typewritten ... and heavily covered in Liquid Paper! I had a party line phone when I was growing up—and it never left its spot hanging on the wall! As a new teacher I used the mimeograph machine daily, filled out all of my purchase orders in triplicate, and wrote my lessons plan out by hand in a spiral-bound book. How can any of us adults—who grew up in such antiquated times—be expected to teach and inspire the digital natives of today?

That's why I was so impressed when I first (virtually) met Pam Simon of Fidgets2Widgets in Eugene, Oregon (True Story, page 24). Pam and her partner, Sydney Ashland, teach kids Robotics, Videography, Minecraft, and more! Surely (I thought) with all of this know-how, Pam must be one of those West Coast tech wunderkinds—sort of like the Mark Zuckerberg of afterschool? Imagine my surprise when I learned Pam was about my age and had been a social worker before becoming a "techie"! I hope you'll enjoy the article about Pam and her Widgetarians, which is inspiring me to tackle my fear of technology!

Whether you suffer from technology fear, are an experienced user, or exist somewhere in between, you'll find plenty to inspire you in this issue! From resources and tools to program profiles and professional development opportunities, we hope you'll find new ways to use technology to excite your kids, enhance their learning, and build your own tech skills!

Gina Warner
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Read more about the people, products, and programs featured in this issue of *AfterSchool Today!*

Who Was Steve Jobs?

<http://www.penguin.com/book/who-was-steve-jobs-by-meg-belviso/9780448479408>

Hanging Out, Messing Around, and Geeking Out

<https://mitpress.mit.edu/books/hanging-out-messing-around-and-geeking-out>

Span Learning

<http://www.spanlearning.com>

Digital Media and Learning Initiative

http://digitallearning.macfound.org/site/c.enJLKQNI6/b.2029199/k.94AC/Latest_News.htm

Connected Learning

<http://connectedlearning.tv/>

U.S. Department of Education

<http://www.ed.gov/>

Pacific Science Center

<http://www.pacificsciencecenter.org/>

NJSACC

www.NJSACC.org

Liberty Science Center

www.LSC.org

Click2Science

Click2SciencePD.org

Google CS First

<http://www.cs-first.com/>

<http://www.cs-first.com/create>

<http://www.cs-first.com/csfirstvideo>

Scratch

<http://scratch.mit.edu/>

Oregon Afterschool Network – Oregon ASK

<http://www.oregonask.org/oregon-state-wide-network>

Piscataway Public Library

<http://piscatawaylibrary.org/>

Cognizant

<http://cogniz.at/1G75DS6>

Alliance for Excellent Education

<http://all4ed.org/>

Stanford Center for Opportunity Policy in Education

<https://edpolicy.stanford.edu/>

Fidgets2Widgets

<http://fidgets2widgets.com/>

Holly Elissa Bruno

<http://www.hollyelissabruno.com/>

Gourmet Learning

<http://www.gourmetlearning.com/>

MORE: HELPFUL RESOURCES

National Council for Women in Technology: NCWIT.org

More books in the Young Penguin Reader “Who Was” Series (educator resources):

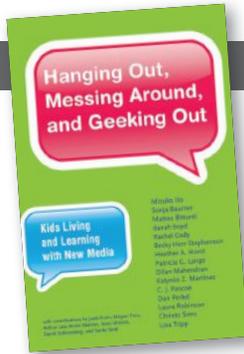
<http://www.whowasbookseries.com/educators-resource/all/>

Active Technology vs. Passive Technology

Michael MacEwan, Director of 21st CCLC and STEM Initiatives, Collaborative Lead, Garden State Girls STEM Collaborative, NJSACC: The State-wide Network for New Jersey’s Afterschool Communities

Many programs report that they offer some sort of technology activities. In the site visits and interviews I conduct for my work, the technology offering is often simply a “computer club” where youth use the Internet for research, playing online games, or completing online educational modules. I argue that these classes use technology, but are not necessarily a technology activity themselves. To me, there is a difference between

passive technology use and active technology in education. Teaching youth to use word processing and database programs are necessary skills, but I consider this a passive use of an existing technology. To be considered active technology, youth should be learning to code, or to create their own games or apps, or even to repair computers and mobile devices, rather than using something that someone else has created for them.



FOR YOUR PROGRAM:

In afterschool programs, we often pride ourselves on learning that originates from student interests instead of a prescribed set of curricular outcomes. The digital learning revolution provides us with new ways to create these learning opportunities.

When I talk with afterschool professionals who grapple with the challenges and opportunities of the evolving education technology landscape, I frequently recommend *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*. This free collection of case studies from MIT Press examines how youth live and learn with new media.

This inspiring, thought-provoking book, the culmination of a three-year ethnographic study funded by the MacArthur Foundation's Digital Media and Learning initiative, advances a focus on "connected learning"—learning that better connects students to their passions, peers, communities, and careers. It's even birthed a new term for this approach: HoMaGo.

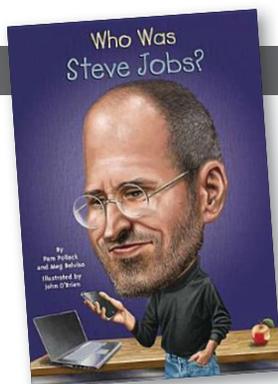
With interviews with young people and their parents, Mitsuko "Mimi" Ito and her colleagues map the terrain of youth digital media use and experiences. We learn that these students are connected with peers worldwide thanks to social media platforms and shared learning communities. Youth also read more than ever before, use technology to solve problems, and explore their passions and interests while creating videos, apps, and digital art.

Young people need time to hang out, mess around, and geek out with digital media and technology. By providing opportunities and spaces for HoMaGo, afterschool programs can foster skills to help them lead 24/7 learning lifestyles.

Contributed by Michael Robbins, founder of Span Learning, a national initiative to build education partnerships among schools, families, and communities fueled by technology that propels student engagement and learning.

HANGING OUT, MESSING AROUND, AND GEEKING OUT: KIDS LIVING AND LEARNING WITH NEW MEDIA

The John D. and Catherine T.
MacArthur Foundation Series on
Digital Media and Learning



FOR YOUTH:

A must-read for your afterschool book club!

This issue of AfterSchool Today is focused on technology—and who better to study and read about in this well-written biography than the man who invented the Apple computer, iPod, and iPhone? Steve Jobs died at age fifty-six of pancreatic cancer, but has left his mark on society, as we know it today. Some lesser-known facts about Steve Jobs include that he was adopted and learned to repair machines from his adoptive father; he never graduated from college; Apple Computers was started in his parents' garage; and he named the company "apple" because it was his favorite fruit.

By 1980, by the age of twenty-five, Jobs was a millionaire. But he was unconventional, he did not wear shoes, he did not bathe regularly, and he only ate fruit. In 1985, he was fired from the Apple Company but returned to head the company in 1997, and by that time was a billionaire thanks to a spaceman and a cowboy.

If the kids in your program love the movie *Toy Story*, encourage them to read about how Jobs worked with Disney and Pixar to create the first full-length movie totally animated on a computer, using his personal finances. Have children think about Jobs' creative genius as they learn about the recently released iPhone 6 or the fourth *Toy Story* movie. His legacy lives on!

Contributed by Alice Hall, Associate Professor at Georgia Southern University

WHO WAS STEVE JOBS?

By Pam Pollack and
Meg Beliso

STEM IN OUT-OF-SCHOOL TIME

Helping youth gain knowledge and skills BY AMY L CHARLES



You want to enable students to **REFLECT THEIR OWN VOICES.** Watch what happens!

Dr. Ellen Lettvin, inaugural Robert Noyce Fellow in Informal Science, Technology, Engineering, and Math (STEM) Learning, is in a two-year fellowship in the U.S. Department of Education's Office of Innovation and Improvement. She works with leading research groups to identify elements that could enhance student STEM learning. Previously, Dr. Lettvin was vice president for science and education for Pacific Science Center. Among her key achievements were expanding the Camps for Curious Minds, programming development at the Mercer Slough Environmental Education Center, and bringing together experts and youth at the Seattle Science Festival.

Overseeing a broad portfolio gave Lettvin experience in identifying community needs, developing and implementing programs to meet needs, and evaluating success. The fellowship, she notes, looks at taking this to the national level to help and reach students.

"Informal learning—outside the classroom—provides an important way to learn about STEM, and OST is an ideal setting for informal learning."

The U.S. Department of Education wants to promote student achievement success and lifelong STEM learning, from pre-kindergarten through post-secondary education. By fostering STEM education innovation, it works to produce scalable tech and non-tech approaches to improve learning environments and to encourage students—particularly underrepresented women, minorities, and special needs populations—to pursue STEM careers. The Committee for STEM Education (CoSTEM) brings together the Department of Education and thirteen partner agencies, all involved in STEM and STEM education. The department helps to leverage efforts across agencies to improve STEM education and participates in all CoSTEM efforts.

Among many STEM-focused programs, Lettvin is strongly dedicated to 21st Century Community Learning Centers, which has been around for nearly two decades, has a footprint in all fifty states, and serves more than 1.5 million students. 21st Century Community

Learning Centers is focused on reaching students during OST and extended learning. Collaborating with people from this program helps expand and enrich OST programs through authentic, hands-on learning experiences for students.

A NASA-ED collaboration to pilot STEM programs in OST was offered to three states, twenty sites, two hundred students, and fifty staff members. Students were given the opportunity to solve one of three challenges (versions of those NASA scientists face), and over the course of a semester worked on developing solutions. Before launching the challenges, NASA provided blended training for 21st Century staff. During the semester, NASA scientists and engineers interacted virtually with staff and students, offering tips. Similar collaborations with other federal agencies are planned for the coming year, expanding the project considerably.

"The OST setting is key to providing students the opportunity to explore STEM concepts in a creative, self-paced way," said Lettvin. "This self-driven modality can provide a relatable way to introduce people to STEM." Lettvin would like to see people in OST less intimidated by STEM and more comfortable introducing the STEM fields to students. "We need to have more open-ended exploratory questions that give kids the chance to tinker and explore. The exploratory act involves messing around a little bit—it's super important to learning and cultivating interest.

"You want to enable students to reflect their own voices. Watch what happens!" •

SCIENCE, TECHNOLOGY

How collaborations can benefit afterschool providers

BY MIKE MACEWAN, DIRECTOR OF 21ST CCLC AND STEM INITIATIVES, NJSACC; DANIEL J. MENELLY, VICE PRESIDENT, STEM EDUCATION, LIBERTY SCIENCE CENTER; AND JESSICA G. ORTIZ, DIRECTOR OF GRANTS, LIBERTY SCIENCE CENTER

NJSACC, the network for New Jersey's afterschool communities, is fortunate to have a highly effective and collaborative relationship with the Liberty Science Center in Jersey City. This collaboration is the result of years of working together in ways benefiting both organizations. Over the years we've partnered on grant applications, written letters of support for each other, and brainstormed youth engagement strategies in an informal setting (either in an afterschool program site or at Liberty Science Center) and solutions to obstacles such as transportation that could keep programs from participating in center events.

Science and technology centers have incredible resources that are beneficial to afterschool providers. Liberty Science Center has new lab-based classrooms and training facilities in its Chalsty Center, where it offers programming to engage youth in high-quality, hands-on STEM inquiry explorations while simultaneously providing professional development to the educators working with them. This approach allows center staff to spark an interest in STEM for the youth, and to help the educators get a deeper look at the activities and receive facilitation tips for

leading them when they return to their sites. Also available in the Chalsty Center is the da Vinci Surgical Robot that allows youth to simulate robot-assisted surgery using the exact tools and methods real surgeons use. There is even an option for youth to watch and interact with hospital staff performing live surgery in the operating room, via video and teleconference link.

Science centers and museums are nonprofit organizations—like many afterschool providers—and there is a misperception that they have ample resources to give away. Centers operate under strict budgets and cannot afford to pay for costs such as food or staffing for events. Many offer curriculum resources online and can offer professional development around those resources to formal and informal educators. Occasionally, centers and museums are looking to pilot newly created educational resources and may seek youth to participate in the testing phase of these materials. This is one of the ways afterschool networks and programs can work with centers. We may not have much money, but we do have access to youth.

When approaching science centers, it's

important to have a clear understanding of their capacity and mission, and to think proactively about the most meaningful and efficient means of mutually assisting each other. Once a relationship has been formed, a helpful strategy is to co-develop a logic model, with inputs and outcomes that are meaningful, deliverable, and scalable to the center and the afterschool program.

NJSACC and LSC share a vision of what high-quality STEM experiences for youth include and what professional development for informal educators should look like. NJSACC as the Afterschool Network looks specifically through the lenses of informal academic enrichment and youth development, and is able to assist the center in including these aspects in their work—this helps LSC offer more complete programming.

Afterschool providers and science centers face similar challenges: transportation, scheduling disruptions, and differing expectations of what is possible in an out-of-school space. While a collaborative relationship between these groups will provide some possible solutions to help both organizations, the most important benefit is the increased resources available to youth and their families. •

TOOLBOX & RESOURCES, Oh my!

COLLABORATIVE TIPS

- Use the Association of Science and Technology Centers website (www.ASTC.org) to find centers in your region. Try to connect with their education or outreach departments.
- The best and most effective collaborative relationships work to the benefit of each person and their institutions.
- Wait to ask for something until a good relationship has been formed.
- Ask center representatives to serve in an advisory capacity to OST programs or to the State Afterschool Network.
- Remember that everything has a cost—even if it isn't readily apparent.
- Work together to determine what both groups need and how you can work together to meet these needs.
- OST programs can assist in promoting community events at the center and in recruiting and encouraging families to attend.
- Manage the expectations for each side, and work to ensure that the relationship is equitable.
- Consider who is in your network of resources and how they can be helpful to this collaboration. Could you connect with additional collaborators? Who can assist?
- Be open to new ideas, styles, and ways of doing things.
- Program administrators should look not for one-and-done partnerships, but for sustained collaborative relationships that expand the capacities of all involved.

For additional information about our work, please see our websites: www.NJSACC.org and www.LSC.org



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USING TECHNOLOGY TO *create moments* THAT CLICK

CLICK2SCIENCE ONLINE, INTERACTIVE PROFESSIONAL DEVELOPMENT

BY SAUNDRA WEVER FRERICHS, 4-H SCIENCE EDUCATION SPECIALIST, UNIVERSITY OF NEBRASKA – LINCOLN



Our work is personal. Often the best opportunities—to build connections or to make learning real—happen in the moment. But these moments only happen when we plan and are prepared. Well-designed professional development (PD) gives our staff the resources they need to plan for effective learning and be prepared to maximize opportunities to connect and engage youth in STEM.

Click2SciencePD is an online resource for high-quality, interactive, STEM PD, developed by the University of Nebraska – Lincoln Extension in partnership with the Noyce Foundation. Click2Science PD is a valuable site for trainers, coaches, site directors, and frontline staff/volunteers working in out-of-school time programs serving children and youth. The site utilizes technology to make professional development easier to plan and deliver—and to keep the experience grounded in the real world of out-of-school time (OST).



COACHING AND MENTORING

Do you need a tool to help you coach or mentor a staff member one-on-one? Select a Coaching Resource that outlines a fifteen- to thirty-minute coaching session focused on introducing the skill and guides you through leading a goal-setting session focused on improving practice.

STAFF MEETINGS

Are you looking to integrate a professional development experience into your regular staff meetings? Select a Meeting Resource that will give you a complete script, supplies list, and link to video resources that will transform a regular staff meeting into a meaningful learning experience.

INTERACTIVE WORKSHOPS

If you have more time to invest into professional development and want a greater impact, select a Training Resource and in seconds you will have the whole plan for a forty-five- to ninety-minute interactive, hands-on professional development experience that will build your staff's confidence and competence in leading STEM activities. Click2Science PD uses online and video technology to make it fast and easy for you to provide high-quality, low-cost professional development.

Each Training Resource begins with an activity that introduces a skill, such as asking purposeful questions. Then there is a video of an OST staff member leading a STEM activity—focusing on that skill. The Training Resource helps you guide the group in exploring the skill, discussing it, and practicing it together. Participants will leave the workshop with a copy of the activity they saw in the video. Leading that activity with youth encourages staff build their STEM skills on the job, where it really matters.

BRING IT TOGETHER TO MAXIMIZE IMPACT

Professional Development should be a process, not just one

training or workshop. To make a difference, we must provide enough time and ongoing support for staff to master new ideas and integrate them. You will have the opportunity to see meaningful change in your program as you start combining the resources together—introducing a skill in a staff meeting, building it through a hands-on training, practicing it with youth using a science activity, and supporting on-going change and improvement through coaching.

As you bring all the resources of Click2Science PD together to support the staff you train, they experience the skills to make STEM click in different ways, practice them with their peers and with youth, and learn how to apply them in their work.

TOOLS FOR INDIVIDUAL LEARNING

Click2SciencePD.org also has resources for individual learning. Online Learning Modules can be integrated into a staff meeting or training, but can also be used by individuals to learn more about a skill and reflect on it. Staff members can even earn continuing education units (CEUs) as they develop skills that make science click. Click2Science partners with Penn State University’s Better Kid Care initiative to offer online courses that will deepen an individual’s understanding of how to engage youth in science while garnering the credit they need for credentialing.

In 2015, NAA will be piloting new STEM credentials where individuals can earn digital badges as they build their skills using Click2Science. This twelve-month participatory prototyping process will focus on understanding the need for, designing, and developing new microcredentials focused on facilitating high-quality STEM learning in afterschool and summer programs. •

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UNLEASHING THE *Potential* OF STEM



Oregon's commitment to STEM education

BY BETH A. UNVERZAGT, DIRECTOR, OREGON ASK

Everywhere you look, technology is changing our lives and our world—life is moving at a rapid pace. Technology is here to stay, and we can only begin to imagine how youths' lives will change in the next one hundred years. Technology knowledge and skills are as critical as the three R's were to previous generations.

In Oregon, afterschool has made a commitment to STEM education.

Despite the increasing importance of STEM skills, nearly two-thirds of Oregon's fourth- and eighth-grade students are faltering in their academic development. National Assessment of Educational Progress (NAEP) scores show that only thirty-seven and thirty-three percent of Oregon's fourth- and eighth-grade students test at or above the proficient level in math. Similarly, only thirty-four percent of fourth-grade students and thirty-five percent of eighth-grade students test at or above the proficient level in science. Demographic disparities in achievement persist, with fewer black students and Hispanic students performing at the proficient level than white students and Asian-American students.

Oregon Afterschool Network – OregonASK has developed a multipronged approach to support, enhance, and engage the existing Oregon informal science/STEM specific

programs and staff in traditional afterschool and summer programs.

While OregonASK is aware of—and connected to—the state's major STEM programs, data on informal STEM programs and activities is nonexistent. The Oregon Network is implementing the first statewide survey of informal STEM education. We've learned that the reach and accessibility of identified STEM programs isn't evenly distributed statewide and is often tied to family socio-economic status, population density, local employers, and volunteers willing to assist STEM education efforts.

Despite lack of organization and gaps in STEM education and programming services, several promising opportunities exist for informal science. OregonASK STEM partners include the Science and Math Investigative Learning Experience (SMILE) program out of Oregon State University, Portland-based Saturday Academy, Foundation for Family Science, and SYNERGIES—programs representing a few Oregon-based STEM content providers. Among Oregon's national STEM programs are For Inspiration and Recognition in Science and Technology (FIRST) Robotics, Math Engineering Science Achievement (MESA), Girls Inc., and Project Lead the Way. There are also grassroots programs such as Pixel Arts Game Education

and Thinkersmith.

To build outreach and greater understanding, OregonASK STEM project partners have connected to the National Girls Collaborative Project and created the Oregon Girls Collaborative, to enhance and support the conversation about access and equity for girls and underrepresented students. OregonASK and the leadership team are establishing a network of informal science/STEM programs serving girls and underrepresented populations, allowing OregonASK to affect the quality of informal science and establish an understanding of who's doing what in Oregon STEM. Across Oregon we're talking about STEM, and how afterschool and summer programs could make a difference in the lives of children and youth.

To enhance the school-to-afterschool connection, OregonASK designed the STEM Bridges project. The network and its partners received funding from the Noyce Foundation and have established support and engagement

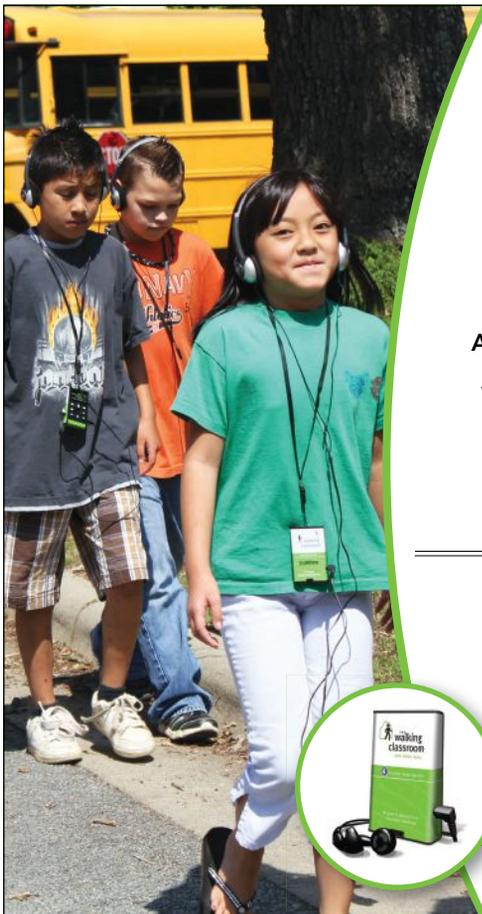
with the Woodburn School District, Falls City School District, and Self Enhancement Inc. (SEI) programs, representing the diversity of Oregon communities. They are respectively suburban, rural, and urban, and serve primarily low-income students with free and reduced lunch eligibility ranging from seventy-eight (Woodburn) to 84.46 percent (Falls City). OregonASK also chose these partners because they serve underrepresented populations: seventy-eight percent of Woodburn students are Latino, and ninety-seven percent of SEI students are African-American.

In spring 2014, teachers and afterschool staff from these schools had the opportunity to work together through a needs assessment and planning process, select curriculum, and receive afterschool curriculum training. In the fall, curriculums such as Science Plus, Math Plus, SING, SciGirls, Techbridge, Afterschool Universe, and Thinkersmith Computer Science were being implemented in these and

other afterschool programs. The Woodburn Afterschool Program has 334 students—kindergarten through fifth-grade—receiving five hours of hands-on, project-based science, math and technology learning each week. The staff is trained monthly, and we see success and excitement!

One local STEM content program is Thinkersmith creative computer science curriculum. Thinkersmith was started in 2011–2012, when computer science was ignored as an elementary school option. In 2013, Thinkersmith's Traveling Circuits won the Google RISE award. Thinkersmith provides age-appropriate “unplugged” elementary curriculum, and the training founder Kiki Prottzman provides for program staff has unleashed the power of technology.

Our vision is to catalyze Oregon students to achieve STEM degrees and certificates, and to reach Oregon's education goals by increasing access, excitement, and engagement of students in STEM courses and experiential learning. •



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BY JENNIFER REYNOLDS

Technology is so all-encompassing a term that it's almost impossible to quantify how it affects education. From data management to student engagement and myriad points in between, educators' usage of technology is constantly evolving to create more effective programs.

Social media is an expedient way of communicating with tech savvy parents. Whether a reminder about program meetings or an update about a lockdown or inclement weather closure, Twitter and Facebook in particular provide a timely and inexpensive manner of communicating. (Does your program have a hashtag—#—yet?)

Information-sharing and online training help streamline a variety of educator practices. The OST Hub at <http://youthtoday.org/hub> addresses critical issues in the out-of-school time field, selected by an advisory panel in the field. There are also opportunities for professional development and training. CypherWorx, Inc. recently announced its online Out of School Time Professional Development Program Certificate series had been approved in eighteen states, and is working toward approval in all fifty.

Technology is changing the face of remediation and enrichment. From Walking Classroom lessons (www.thewalkingclassroom.org) allowing students to listen from an MP3-type device while moving, to Gourmet Learning's (www.gourmetlearning.com) digital lesson makers, technology provides a means to more easily deliver differentiated instruction.

As afterschool programs address the “digital opportunity gap” experienced by lower income students, the need to provide youth with the digital devices they need to learn has become widely recognized. As more schools provide tablets or laptops to all students, other programs those students utilize are able to integrate more technological interface into their activities. •

HOW IS TECHNOLOGY HELPING YOU (AND YOUR PROGRAM) SUCCEED? [EDUCATORS RESPOND]

“ I currently host a Minecraft Club after school and it's incredibly popular! The educational values include reading, writing, math, geometry, music, social skills, and even linguistics. Our students love it!”

—Carrie Fleck Lieneman

“ The kids are learning coding through Scratch and Robot Turtles. In the office, we finally made the changeover to a check in system called Tadpoles, using iPad minis for kids and staff attendance.”

—Denise Trasatti Sellers

“ We are participating in the CS First Clubs, in which the kids will be doing coding to make their own video games. We also will be implementing our Technology First Program.”

—Sylvia White

CODING PROGRAMS

Learn to Mod (used with Minecraft), Scratch, Tynker, and others allow students to learn coding (programming) through engaging online programs.

<http://www.learntomod.com/> | <http://scratch.mit.edu/> | <http://www.tynker.com/>

FLEXIBLE DATABASE SYSTEMS

Collecting, managing, and utilizing student data is the new normal.

Many programs manage student information and handle finances.

FeePay's 2014 Pinnacle Award-winning programs allow online payment of activities, meals, field trips, and more. Softerware offers programs geared toward nonprofit organizations, camps, private and public schools, and afterschool.

EZChildTrack features easy-to-use access for parents to input information.

Cayen Systems specializes in helping clients increase productivity and reduce program management costs.

www.feePAY.com | www.softerware.com | www.ezchildtrack.com | www.cayen.net

TECH TOOLS FOR EDUCATORS

Reflection Sciences Using the Minnesota Executive Function Scale, a tablet-based test of a child's executive function skills (controlling one's attention, thoughts, actions and emotions), the program measures the effects of training, school curricula, and professional development.

www.reflectionsciences.com

PreciouStatus This free app provides parents real-time communication with educators or caregivers, to convey medical and academic updates, share photos, or transmit paperwork, while protecting privacy and maintaining an archival record.

www.precioustatus.com

Socrative Students use laptops, tablets, or smartphones to take part in surveys, take assessments, or complete "exit ticket" activities.

www.socrative.com

Classroom, Inc. Connecting school to the world of work, building literacy skills, using games to encourage mastery, and fostering collaboration are the hallmarks of these online simulations.

www.classroominc.org

Screenr Record your own screencasts with this free tool. Use the audio function to record instructions as you take students through a tour of a particular website or other online tool you wish them to use.

www.screenr.com

First Lego League Engineering challenges are addressed by building LEGO-based robots. FLL teams, guided by their imaginations and adult coaches, discover exciting career possibilities and, through the process, learn to make positive contributions to society.

www.usfirst.org

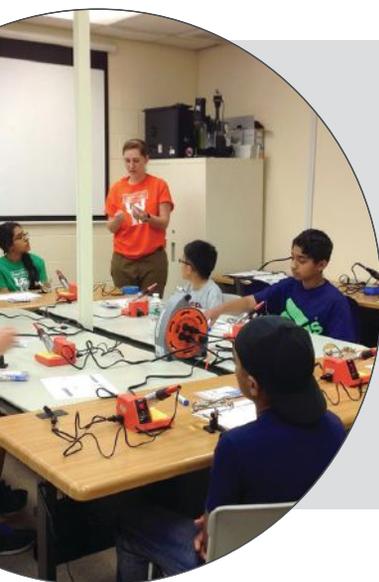
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PISCATAWAY public libr

Creating a makerspace | BY DOUG BALDWIN, EMERGING TECHNOLOGIES LIBRARIAN, PISCATAWAY PUBLIC LIBRARY

The Piscataway Public Library is a two-branch library system located in central New Jersey, serving a population of approximately 55,000 residents. In 2012, staff from the library became familiar with the Maker Movement, a technology- and do-it-yourself-based culture that encourages hands-on building, constructing, tinkering, and experimenting. This movement has been a key factor in the democratization of design and manufacturing that has been taking place all over the country. It has also highlighted the importance of STEM (science, technology, engineering, and math) education in developing and innovating new products, as well as training a competent twenty-first-century workforce.

It was through the lens of STEM education that staff at the library began to research and eventually initiate a makerspace to provide access to programs, equipment, and technology to support visitors of all ages in making, creating, and learning. Our space, branded as MiY (Make it Yourself), has been growing steadily since our makerspace grand opening in early 2013. This has included open hours for visitors to come and utilize the space and

resources, monthly age-appropriate making programs, and a summer maker-camp for children in grades four through twelve.

While our library was fortunate enough to have the seed funding to create our space, our budget is certainly limited, as many other public and nonprofit programs. Because we strive to create programs where participants can take their creations home with them, we research and run many of our programs using low-cost or recycled materials to create things such as smartphone projectors, duct-tape speakers, glass jar lanterns, dry-ice ice cream, and much more.

Likewise, we were fortunate to have our summer maker-camp funded this year by a grant from Cognizant called “Making the Future.” This is a great funding opportunity to support afterschool and summer STEM programs, and Cognizant has announced that it will be tripling its funding for this grant project. Information on the grant is available at <http://cogniz.at/1G75DS6>.

We have used a variety of resources to help generate low-cost STEM project ideas to do with our kids and teens afterschool and over the summer. Among the Web-based resources we have and continue to use are:

- **Instructibles:** <http://instructibles.com>
- **Make it At Your Library:** <http://makeitatoryourlibrary.org/>
- **Makezine: Projects:** <http://makezine.com/projects/>
- **NYSCI Makerspace Blueprint:** http://nysci.org/wp-content/uploads/nysci_maker_blueprint.pdf

In regard to delivering our programs, we have found that usually a group of eight to ten (with one facilitator) or up to fifteen (with two facilitators) is optimal when making physical projects.

Furthermore, incorporating the following steps into our approach has worked best in providing a stimulating, fun, and educational environment for this type of programming:

- **Providing guidance, but allowing open exploration of the materials and the physical and mechanical design of their projects.**
- **Asking questions, instead of providing answers.**
- **Supporting their ideas when they go “off-script.”**
- **Encouraging them to share their ideas with other participants when they develop a new way to get**

WAY ary

something to work, or a unique way to solve a problem.

- Be less of an expert, and more of a facilitator.

We work by the mantra of “success through failure” and “there is never one right answer.” This is at the heart of the unstructured learning process that takes place in our programs as participants develop their abstract and critical thinking skills, planning and design skills, and self-confidence in the work they are performing.

What we have also found is that expertise in STEM-related fields is not a requirement to facilitate these programs successfully. Certainly a willingness to be curious and learn new things is an asset; however, we have discovered that our ability to provide the right learning and creative environment has been the most important ingredient in running these programs successfully.

If you are thinking of incorporating this type of activity into your program, our library is more than happy to assist in whatever way we can. Please feel to contact me via e-mail at dbaldwin@piscatawaylibrary.org.

ENGAGING ACTIVITIES KEEP STUDENTS HUNGRY FOR MORE



With “Appetizers,” “Main Dishes,” “Doggie Bags” and other à la carte options to choose from, Gourmet Learning provides an array of enrichment activities appropriate for afterschool programs.

Gourmet Learning President Jan Garber notes “Appetizers” are designed to get students started, with topics for friendly discourse. “Main Dishes” include activities for skill reinforcement, such as games and co-operative learning opportunities, comprehension questions, and assessment pieces. “Desserts” provide games to reinforce skills. “Doggie Bags” consist of games and activities requiring higher-level thinking and critical reading skills, and can be used to keep things interesting for advanced students. (“Main Dishes” are aligned to the Common Core curriculum, and “Appetizers” are dual coded for Texas curriculum.) A series of “Novel Dishes” with teaching materials for a range of popular children’s novels is also available. All activities are based on the educational models espoused by Robert Marzano, Madeline Hunter, and Benjamin Bloom.

Garber says the appeal of Gourmet Learning Products is their ease of use,

coupled with strong educational content. “Teachers are constantly telling us that we are the missing piece to what they are using in their classrooms.” From laminated reading and math games, to online activities, and instructional supplements that the whole class can view digitally, Gourmet Learning products save educators a tremendous amount of prep time. Online activities provide individual student evaluations, and suggest remediation and enrichment activities. The Gourmet Learning “Lesson Maker” provides access to interactive formative assessments and warm-ups, controls for every aspect of the test taking experience, real-time lesson feedback, usage statistics, and complimentary access to the entire Gourmet Learning curriculum. Educators are able to customize settings for assessments and daily warm-ups, schedule a practice, benchmark and final tests, and choose open/close dates for assignments, set feedback for specific questions, determine question behavior, provide hints, and more. These products offer a great opportunity for afterschool programs to provide academic support for students in need, and enrichment for students who are ready to move beyond. •

For more information, visit www.gourmetlearning.com.

DIGITAL LEARNING "DO'S+DON'TS"

Using Technology to Support At-Risk High School Youth BY KAMILA THIGPEN, MANAGER, DIGITAL LEARNING POLICY AND ADVOCACY, ALLIANCE FOR EXCELLENT EDUCATION, CENTER FOR DIGITAL LEARNING

Today, a new digital divide is emerging. Thanks to the gradual decrease in the price of computers and the rise in popularity of tablets and Internet-enabled mobile devices, a greater number of disadvantaged youth are getting online than ever before. While disparities in access to technology are decreasing, the quality of access varies dramatically.

For high-school youth navigating the college admissions process and using digital devices for more extensive writing and research projects, access to an appropriate device matters. Tablets and other mobile devices are not a replacement for a fully functional computer or laptop. Yet in disadvantaged communities, less expensive mobile devices can often be a primary means of Internet access outside of school. There is also a growing awareness of the inequalities that exist in the way high school youth interact with digital media. Fostering a participatory digital learning environment is critical, and the process of creating digital content is what leads to the development of twenty-first century skills and competencies.

Afterschool providers must be mindful, however, of how technology is deployed in youth programs. All digital learning is not created equal, and technology is certainly no silver bullet for success. A recent report from the Alliance for Excellent Education and the Stanford Center for Opportunity Policy in Education (SCOPE) finds that technology—when implemented properly—produces significant gains in student achievement and boosts engagement, particularly among students most at risk. The report is based on a review of more than seventy recent research studies and identifies three important components to successfully using technology with at-risk high school students: **(1) interactive learning; (2) use of technology to explore and create, rather than to “drill and kill”; and (3) the right blend of teachers and technology.**

1

INTERACTIVE LEARNING

Interactive strategies have proven to produce greater success than the use of computers for programmed instruction. Unlike “computerized workbooks” that march students through material they learn through rote or algorithm, interactive computer-based instruction (CBI) systems can diagnose students’ levels of understanding and customize the material they engage with, offer a more interactive set of instructional activities, and provide feedback to students, as well as provide more detailed information about student progress. Programs such as these, with teachers supplementing instruction to explain concepts and coordinate student discussion, were found to be successful in helping low-achieving students pass state competency tests and master complex new material.

One study of at-risk high school students in Texas found they learned significantly more using an interactive instructional environment to study quadratic functions than those in a control group who studied the same concepts via traditional lecture. In this experiment, students used simulations that allowed them to manipulate information on interactive graphs and tables. They also were prompted to explain why certain phenomena were observed and engaged in a dialogue with peers about their findings.

2

USE OF TECHNOLOGY TO EXPLORE AND CREATE, RATHER THAN TO "DRILL AND KILL"

A number of studies have found that students demonstrate stronger engagement, self-efficacy, positive attitudes toward school, and skill development when engaged in content creation projects. Among other examples, this can include:

- Engaging in multimedia content creation to communicate ideas about the material they are studying.
- Creating reports or graphic representations of data they have researched.
- Developing websites, presentations, or videos.
- Digital storytelling.

One key to content creation projects is the use of scaffolding to guide the students through a series of increasingly more complex activities that build on one another. Motivation and self-esteem are further enhanced when the content creation tasks are culturally relevant and accessible, and incorporate students' interests.

3

THE RIGHT BLEND OF TEACHERS AND TECHNOLOGY

It is important to note that in all examples of successful outcomes, students had access to one-to-one computing opportunities with adequate hardware and bandwidth to support their work. One-to-one access refers to environments where there is one device available for each student. Researchers have found that one-to-one availability is particularly important for lower-income students' ability to gain fluency in using the technology for a range of learning purposes, since they are less likely to have these opportunities at home.

Along with the ready availability of technology, it is equally important to have the ready availability of teacher supports and other students' input, thoughtfully used. Results are strongest when the uses of technology discussed above are combined with opportunities for strategic teacher support and social interactions among students. •

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Create Your Own Exciting Experiments

TECHNOLOGY & FITNESS

IN AFTERSCHOOL

Get excited about moving. BY ALCIA G. ORCENA, AFTERSCHOOL TRAINER AND CONSULTANT

Technology comes with a price tag many afterschool programs cannot afford—and if they can afford it, the idea of a child “running with” technology is perhaps nerve wracking. Technology is here and now, however, and when we can use it to boost physical fitness, sometimes we have to step outside of our comfort zones and try. Here are a variety of low-cost and free opportunities you could incorporate into your program, or you could encourage children and youth to incorporate into their home-use devices to get them excited about moving.

PEDOMETERS

Provide pedometers for your students to wear all day long. Track their daily footsteps. Calculate their personal accomplishments over a week, a month, a semester. Students can practice math skills and challenge themselves to walk and move more.

INTERACTIVE VIDEO GAMES

If your children enjoy video games, get them moving with Wii Fit/Wii Sports or Just Dance games. Challenge them for time, accuracy, and points. Each child can track his or her own progress and skills.

WALKING PROGRAMS

All you need is a good pair of walking shoes. Sign up your program and your students on the American Heart Association’s free online activity tracker, at www.startwalkingnow.org.

FREE APPS

NFL PLAY 60 APP: (NFL and the American Heart Association) You move, your player moves. Jump, run, and turn while holding your device, and your virtual player will do the same. Collect coins for activities that you can exchange for cool NFL team gear. Unlock fun characters, challenge your friends, and get NFL power-ups and American Heart Association hearts that make you invincible.

KIDS FITNESS: Twelve child and youth videos that will have your kids moving and grooving are focused on working their upper body, stretching, warming up and cooling down, developing coordination, and resistance-strength trainings.

VIRTUAL RUNNER: The Virtual Runner app allows you to run on any course virtually.

Want to try the Boston Marathon route or run in Central Park? Load up the app, and students can run along the virtual course—without ever leaving the program space.

ZOMBIE RUN: Want to get motivated to move? Turn on the Zombie Run App, put on your headphones, and find an open space to move. The Zombies are coming! You will hear them coming from everywhere: Better get moving before they catch up to you.

CHARITY MILES: Earn corporate sponsorship for a charity every time you bike, run, or walk with this free app. Download the app and log in to track your movement. Are you a charitable program yourself? Visit www.charitymiles.org to investigate how to register your program on this neat app.

In researching technology and fitness for children and youth in preparation for this article, it appears there are not a lot of available apps. Do you work with older school-agers and youth who like to develop apps? Encourage them to develop a fitness or nutrition app that will work for them, their friends, and your program. Upload it to the app store and share it with others. •



Do you incorporate technology into your afterschool program’s fitness activities? We’d like to hear from you! E-mail info@naaweb.org with your innovative ideas.

Bringing free, innovative introductory coding to a program near you

GOOGLE CS

BY KATE BERRIO, PROGRAM MANAGER,
GOOGLE CS FIRST

FIRST



The room full of thirty middle-schoolers is quiet, save for the clickety-clack of keyboards and mice. Occasionally, the silence is broken by an exclamation of “Ooh!” or “Wow!” or “No way!” Students are completely engaged with what they are doing on their computers; they are creating beats, making characters dance, launching rockets into outer space, sending fashion models down the runway, and writing stories about their weekends.

Scenes like this are happening all across the United States—and they aren’t taking place in creative writing or art clubs, but in a computer science and coding club called Google CS First (www.cs-first.com). To date, more than five thousand students have taken part in a CS First club, and many have signed up for more than one.

Google CS First is a free afterschool and in-school enrichment experience that aims to engage girls and underrepresented minorities in the science of creative computing, mainly those in grades four through eight. The curriculum is project-based and self-paced; students support each other via positive feedback (“shout outs”), get mentored by community volunteers or teachers (“Gurus”), and receive cool passports in which they earn achievement badges and showcase their work to family and friends. Curriculum is parsed out in ten-hour themed modules (<http://www.cs-first.com/create>) that can run back-to-back through a school-year or summer program. Themes include Fashion, Music, Storytelling, Games, Art, and more.

One aspect that makes CS First different from other beginner

coding programs is that the facilitator does not need a technical background or teaching experience as step-by-step instructions, club plans, and even promotional materials to inform students about the club are provided free online—and by mail—to program sites. Online training videos point out best practices and serve as an ongoing resource for facilitators. The CS First curriculum is delivered by online videos that students follow along with as they build projects using a free, online coding tool called Scratch (<http://scratch.mit.edu/>).

Perhaps what sets CS First apart the most is the way it makes students feel. Beyond learning the 21st Century skills they will need to take their place and succeed in a technology-rich world, CS First club members also gain benefits that extend far beyond the computer screen. Learning to build a project on a computer that actually works is a powerful experience, particularly for students who may lack computer access outside of school or who lack experience with or interest in technology. CS First participants gain confidence with computers, getting a glimpse of the possibilities technology might hold for them in the future all while they have fun, create, and learn the role of computer science in the world around them.

Bringing CS First to your afterschool or summer program is simple and free. Please join us by going to www.cs-first.com to start a CS First club today. •

For a glimpse of Google CS First at work, visit <http://www.cs-first.com/csfirstvideo>.

Holly Elissa Bruno, MA, JD—educator, best-selling author, keynote speaker, online radio host, “recovering attorney,” team builder—is a strong advocate of early childhood education and relationships that help children feel safe. The relationships we build with children are the core of their learning. “If the child doesn’t trust us, the child won’t learn with us,” Bruno said. “The

most honest way to build a relationship is to connect with that child as a person, to be with him to see what he is thinking and doing.”

The most important thing we could do for children, Bruno notes, is let them know that they’re safe with you; that when they’re with you, they can trust you. You’re not going to harm them. They’re free to learn. The teacher who’s focused on the child succeeds, as does the child. This human relationship is the pathway to and has always been at the heart of children’s learning. “A computer cannot pick up on feelings—cannot hug you.”

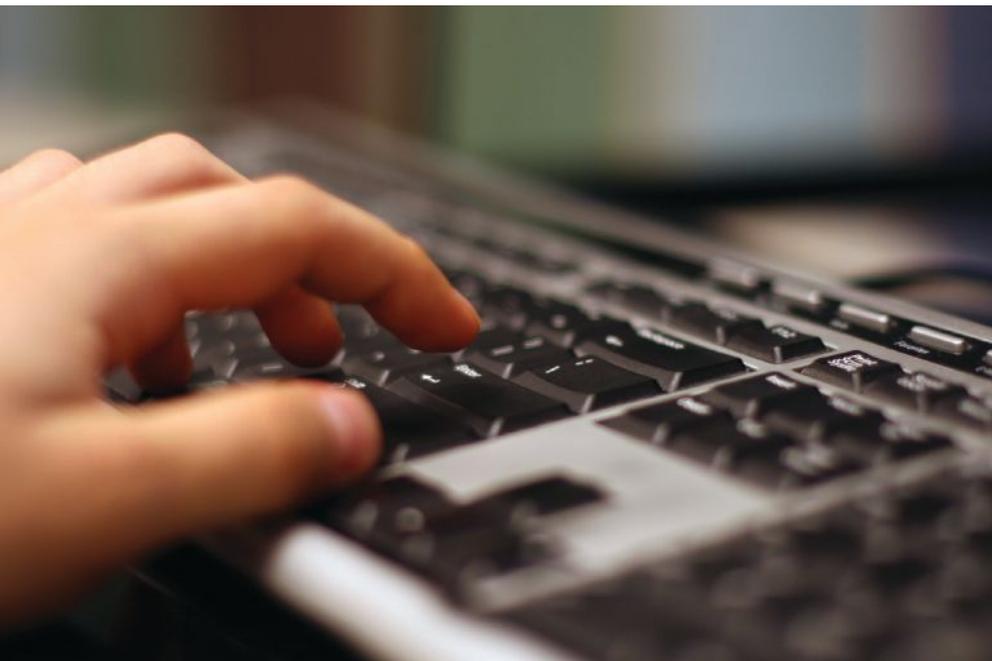
Bruno praises technology for connecting us to other lands and for fantastic possibilities, yet laments the Internet’s busyness and addictiveness. She loves and is grateful for technology, yet recognizes it should be used in the context of relationships. Of the iPhone, she notes: “You could be in the classroom, on a field trip, on the playground and look something up. That immediacy is wonderful.” Yet she sees youth who are on their phones so much they’ve lost the ability to connect with others. “When children get lost in their phones, what are they learning about that human bond?”

Going tech-free even briefly helps us get back to reading people as well as we read books. “People get so engaged face-to-face,” Bruno explains. “All the worlds come together.” People enjoy being together. They communicate. They read facial messages. A child must be able to interact with people, to survive and thrive as a student and adult. “If a child has a heart-to-heart relationship with even one adult, he’ll stay in school. If not, he’ll detach and isolate, which is dangerous.

BY AMY L CHARLES

TECHNOLOGY IS A **PATHWAY** TO LEARNING

... but don’t lose sight of the human relationship.



Isolation means lack of growth.”

Bruno worries the art of conversation is going to die as people become more enchanted by technology. We need to help children develop social and emotional intelligence and discover their preciousness. We need to help children feel welcome and part of things. A classroom therapy dog may reach even the most troubled child, she notes, loving that child for who she is. “If children have trouble relating, start them with something like an animal. Teachers who really understand emotional intelligence get this.”

What do we model for children about our relationship with technology? We should model, “I want to be here with you” and that we have a relationship with them. We should help children learn to use rather than be used by technology. School-age professionals are in a wonderful position to help with this. “Young staff members are vital and vibrant,” Bruno said. “Because they grew up with technology and are relational, they can model for children how to use technology as a tool for exploration.”

Ask yourself: “Why am I passionate about my iPhone?” Mirror neurons are designed to pick up cues and lessons from all around us. Children pick up on our passions and enthusiasm, and we could

use this to help solve problems. What kind of therapy dog would be best for our classroom? Let children research online, then talk about what they’ve found. Turn their constant barrage of information into streams of learning. “We’re the ones who translate technology into human terms,” Bruno said. “We’re the one who help the kids and ourselves understand how technology could relate to our lives.” Human connection is a large part of everything. Technology is a pathway to learning, but we must keep that human relationship.

Are you an educator to help children learn—to reach each child? This happens by reading what’s going on between people. Bruno suggests giving yourself over to the human part of learning, and talking to children about what they want to do and what they could do. Ask how they would use technology to make the world better for their community, or children who are bullied, or children on the autism spectrum. “Talking through something is where the magic comes,” said Bruno. “It’s where children discover their own voice.”

Imagination is where children find out who they are. Imagination that takes place in conjunction with and, more important, outside of technology. •



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“When children get lost in their phones, what are they **learning** about that **human bond**?”

TAKING A LEAP OF *faith*

Pam Simon, Fidgets2Widgets

EDITED BY AMY L CHARLES



Sydney Ashland



Pam Simon

“Fidgets2Widgets is a welcoming environment where everyone is comfortable. Kids who self-identify as geeks or nerds, social kids, kids who may struggle with Asperger’s or mild autism, kids who are gifted—they all get along and form relationships. No cliques. No bullying. They are all Widgetarians!”

Pam Simon has a B.S. in Speech Pathology and Audiology from the University of Iowa and an MSW in Social Work from Gallaudet University. Yet the Fidgets2Widgets concept came primarily from a collaborative relationship with co-founder Sydney Ashland. Their real education was in raising their children. “We saw a big disconnect between school life during the day and digital/virtual life at night on computers, tablets, phones, and gaming consoles,” said Simon.

Digital/virtual life was social, relevant, current, and engaging in a way school wasn’t. Social media, gaming, and texting became the modern-day playground. Technology is the language children speak; the way in. Although children in general think they know everything technologically, Simon and Ashland saw the need for close supervision and guidance regarding safety, discernment, balance, and skills—tools not taught with great prevalence in schools. And afterschool enrichment options become very limited closer to middle school. Children were no longer satisfied with afterschool care that felt more like “babysitting.”

Rather than continuing to complain about what didn’t exist, Simon and Ashland took a huge leap of faith and built a concept, program, and casual learning environment centered on what they’d observed. They leased physical space, ordered furniture

and devices, and began creating the curriculum to support their tag line: “Holistic, High Energy, High Tech.” They wanted a casual learning environment where fully engaged children experience technology through the “active creator” (not “passive user”) lens. They constantly survey the children to see what they are interested in learning. One example was integrating Minecraft and other educational gaming platforms into their learning modules.

As a social worker, Simon’s basic tenet is, “meet the client where he/she is.” She and Ashland know that to reach their digital natives, they must meet them at technology—their love and way of life. “As long as we are in charge, supervising, structuring, and mentoring, we know they are using technology in appropriate ways.” Fidgets2Widgets has a structure children relate to and use as a container of exploration. Children are mastering basic STEM skills, and because the environment is relaxed and holistic, they move freely from exercise bike to balance board to Legos to Wii to computers. “When it’s time to meet as a group and tackle the learning module for the day, there is exuberance, joy, and great social interaction.”

Simon and Ashland relate to the children as female role models and mentors, with that nurturing “mom” energy thrown in for good measure. “We are middle-age women who love technology ourselves,” said Simon. She and Ashland are committed to remaining on the cutting edge and helping children experience technology. “We find ourselves staying one step ahead of the kids. It can be daunting at times, but as lifelong nerds ourselves, we enjoy it!” •

Have a “True Story” you want to share? E-mail it to editorial@serendipity-media.com.

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