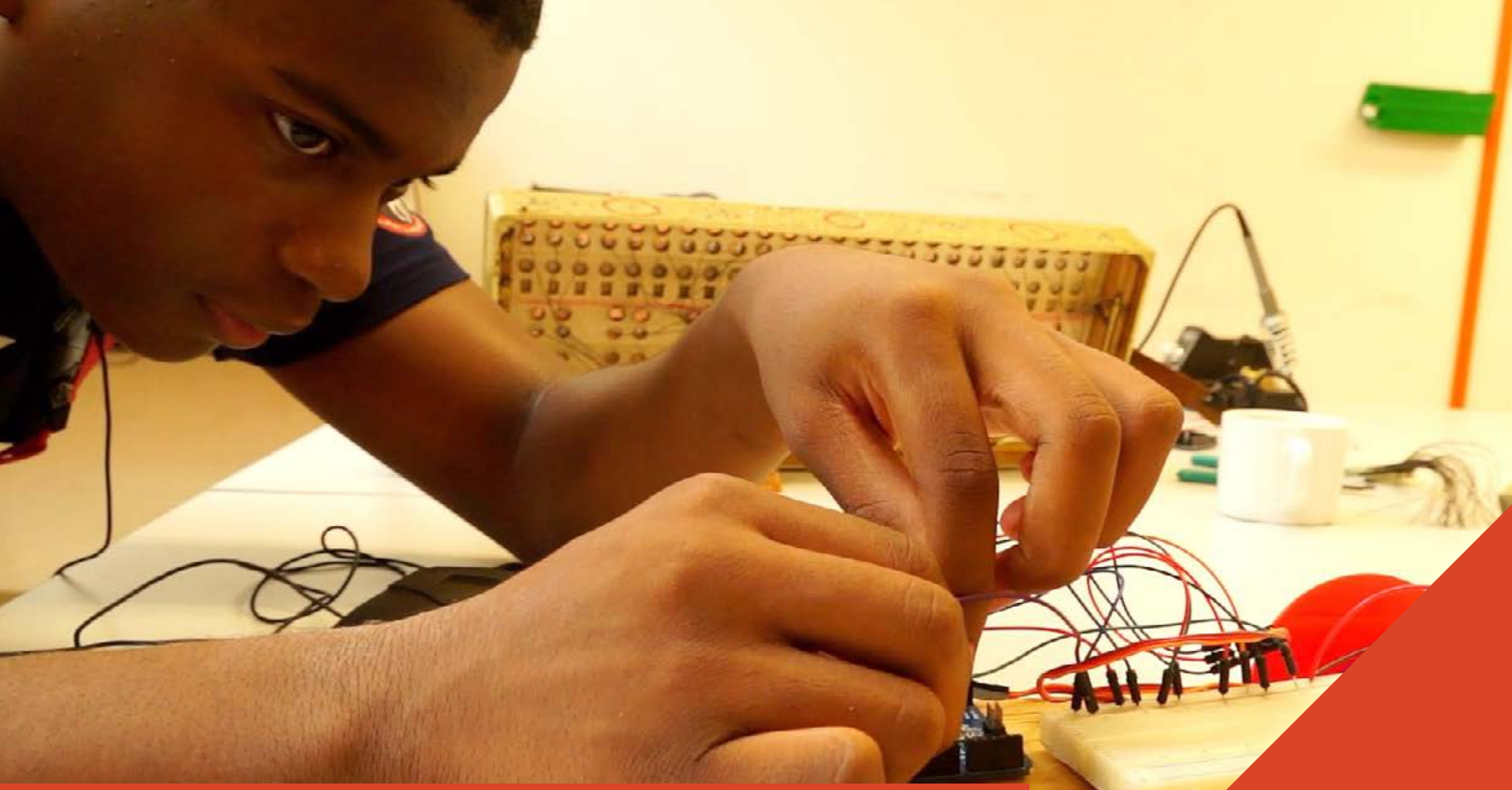

RECLAIMING
Digital Futures

Lessons to Help Youth Thrive Through Informal Learning with Technology

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RECLAIMING Digital Futures

Authors

Rafi Santo, Ph.D, June Ahn, Ph.D, Juan Pablo Sarmiento

Contributors

Beyond the authors, the following individuals authored resources included in the print and online versions of this toolkit.

Taylor Bayless - YOUmedia at the Chicago Public Library

Tracee Brock - Free Spirit Media

Ama Codjoe - DreamYard

Brian Cohen - Beam Center

Jeremy Dunn - YOUmedia at the Chicago Public Library

Michael Falevits - Free Spirit Media

Joselina Fay - DreamYard

Grace Freedman - Beam Center

Stephany Garcia - The Knowledge House

Austin Greene - DreamYard

Shawn Grimes - Digital Harbor Foundation

Chelsea Hauge

Chelsea John - DreamYard

Patricia Joyner - Free Spirit Media

Hillary Kolos - DreamYard

Jeff McCarter - Free Spirit Media

Adena Moulton - Digital Harbor Foundation

Anjel Newmann - AS220

Trudy Ngo-Brown - West Michigan Center for Arts and Technology

Anthony Pellicone - University of Wisconsin-Madison

Jonathan Prozzi - Digital Harbor Foundation

Rhea Ramakrishnan - Digital Harbor Foundation

Mary Reisenwitz - Digital Harbor Foundation

Allen Riley - Beam Center

Jerelyn Rodriguez - The Knowledge House

Jean Ryoo - University of California, Los Angeles

Mike Saunders - West Michigan Center for Arts and Technology

Calvin Stalvig - Beam Center

Seth Tourjee - AS220

Robyne Walker Murphy - DreamYard

Peter Wardrip - University of Wisconsin-Madison

RECLAIMING Digital Futures

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AS220

Anjel Newman, Director of Programs, AS220 Youth
Janay Pina, AS220 Youth Operations Manager
Shey Rivera, Artistic Director
Seth Tourjee, Grants Manager

Beam Center

Brian Cohen, Executive Director
Calvin Stalvig, Director of Youth Programs

Digital Harbor Foundation

Shawn Grimes, Director of Technology
Steph Grimes, Director of Program Design
Jonathan Prozzi, Director of Learning Design
Mary Reisenwitz, Special Projects Manager

DreamYard

Jason Duchin, Co-Executive Director
Joselina Fay, Associate Director of Art Center Programs
Hillary Kolos, Director of Digital Learning

Free Spirit Media

Tracee Brock, Civic Media Manager
Michael Falevits, Program Coordinator
Glenance Green, Deputy Director
Rachel Jones, Program Coordinator
Jeff McCarter, Founder & Executive Director

The Knowledge House

Stephany Garcia, Director of Core Services
Kirsten Hernandez, College & Career Coach + Development Associate
Jerelyn Rodriguez, Co-Founder + Chief Executive Officer

West Michigan Center for Arts and Technology

Trudy Ngo-Brown, Director of Creative Programs
Jessica Plowman, Video Game Design Instructor
Mike Saunders, Video Production Teaching Artist + Program Coordinator

YOUmedia at the Chicago Public Library

Taylor Bayless, College and Career Specialist
Jeremy Dunn, Director of Teen Services

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Visit DigitalLearningPractices.org to learn more.

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Reclaiming Digital Futures

Foreword by Susan Crown, Chairman & Founder, Susan Crown Exchange (SCE)

For the past decade, SCE has focused on one single question: how do we best equip the rising generation to thrive in a world changing at warp speed?

It is cliché—and also true—to observe that the "digitization of everything" has altered how we communicate, learn, present ourselves and interact with the world. Neurologists, social scientists and educators are scrambling to comprehend how powerful technology tools have impacted the course of human history; how they affect human interactions and emotions, how we relate to one another, what this means for the workforce and the economy, on and on.

The struggle to balance our choices with our new capabilities is not a new phenomenon. We can draw parallels. Advances in medical technology have far outpaced our capacity to allocate (and pay for) cutting edge treatments. Our legal system isn't evolving fast enough to address the issues and complexities of intellectual property. And in the same way, we do not yet know how to best put technology to perfect, positive use. Nor do we fully grasp some of the negative and unintended consequences it reaps. Young digital natives are our test case. It's a foregone conclusion that digital natives will be running the world in a few decades, so it behooves us to unpack, analyze and better understand what it means to grow up in a digital world.

The digital revolution has changed the world in one more very important way: it has both shortened and lengthened the boundaries of our world and sense of interconnectedness. We are now knit together globally. We can connect with people (almost) anywhere on earth simply by picking up our phones, or by using a keyboard and screen. Events, information, news, even gossip is instantly available. We are deluged with incoming data 24/7, some of it true, some of it fake, lots of it entertaining.

These represent an unprecedented set of changes. We are working hard to understand their implications, particularly as they relate to youth. We know that technology is included in the toolbox of development, but tech tools have to be placed properly and firmly in the context of human interaction.

To this end, in our 'Exchange Model' of funding where we bring together leading organizations to synthesize best practices, we studied some of the best youth programs in the country—unpacking how they integrate digital media into their programming and practices. We focused (as we always do) on programs where kids vote with their feet; afterschool, non-mandatory programs. After issuing a national, highly competitive RFP, we identified eight exceptional organizations helping youth evolve into secure, capable, contributing adults through afterschool programs where they engage with technology.

We understood that there are both digital skills and digital fluencies that position youth strongly to enter and prosper in the 21st century workforce; we wanted to be able to specifically name those skills. One thing that surfaced over an 18-month period of working with top-tier digital learning programs is that the key to success in this new world is what Carol Dweck calls "growth mindset;" the disposition, propensity, capacity and willingness to adapt to new information and new ways of doing things. Adaptability rose to the top of our tech skills list. Advances in tech are occurring fast and furiously, meaning that jobs will quickly evolve into newer, different jobs, and our historical practice of teaching repetition and a static skillset is no longer relevant.

The programs we selected to teach us about the best in digital learning were all of top quality, but varied widely in their programmatic approach. Some promoted creativity and arts, others the use of technology to address chronic community challenges, still others were specifically focused on pure technology skills like coding or preparing kids for IT work.

As is our practice, we gathered knowledgeable and experienced leaders in the field to help us seek answers. These exemplary youth-serving digital learning programs shared their work, offering up their models for careful analysis and study by peers and a first-rate team of researchers from New York University and University of California, Irvine, both known to produce America's leading scholars in the domain of "youth and technology."

The content that follows in Reclaiming Digital Futures is a detailed description of what we learned. Our goal is to share those lessons, spur ideas, and possibly offer some models and considerations about how to use digital media to ignite the hearts, minds and souls of youth. One thing we know for sure; kids with a sense of purpose, a sense of competence, and a sense of community fare much better in life than kids who lack these three things. Technology offers remarkable new ways to bring these out in kids.

The executive summary that follows offers the "punch lines" of this endeavor; the key takeaways. Text following it describes in detail how our partners have successfully achieved their objectives. While we consider this work a beginning, not a conclusion, it has yielded solid and useful information.

We owe great thanks to our partner organizations, who dedicated considerable time, effort, imagination, open-mindedness, keen intelligence, years of experience and real commitment to this work. It was gratifying to learn how they valued the opportunity to step back from their day to day work and/or financial "survival mode" to deeply examine what they do, how they go about their work. It is noteworthy that they considered the time to truly reflect on their work a luxury. Several of our partners referred to participation in the learning collaborative as an opportunity for "spacious thinking," and described the experience as opportunity to think both more broadly and deeply about their work, prompting articulation to share with the larger community and also seeding insights as to how to do even more, better.

We also thank the scholars at New York University and University of California, Irvine for their deep investment in this endeavor. They skillfully organized and facilitated our convenings to maximize what we could learn. They fostered genuine collegiality and demonstrated the respect that these youth-service professionals deserve.

All of our partners are passionate about doing all they can to cultivate solid, competent, thoughtful 21st century citizens. This calling, we believe, could not be a higher priority.

Susan Crown

Chairman & Founder, SCE

Executive Summary

Overview

Narratives about digital technology and why it matters for youth, their education, professional trajectories, and envisioned futures are everywhere. Most often these narratives position youth as subjects of the world of digital technology rather than the drivers of their own pathways and those of their communities. The reality is that kids today make their own choices about when and how they use technology. They are protagonists, exercising agency and autonomy. And they are civic actors, using technology as a means to contribute to and transform their communities. Theirs is a new story; a new way of growing up and learning about the world, based on a very different kind of experience. Any effort to prepare today's youth for their futures needs to be driven by youth agency, by a notion of them reclaiming digital futures.

Youth, with help from thoughtful educators, are already doing this work and bringing this vision into reality. Together this report and the associated website DigitalLearningPractices.org hopes to offer a toolkit for how others might achieve this. The contents of the toolkit have been gleaned from deep learning and discussion with some of our nation's leading out-of-school time (OST) organizations focused on equipping kids to navigate a world both analogue and digital.

This report and the DigitalLearningPractices.org site is a curated cross-section of resources attempting to communicate knowledge and best practices in how kids can achieve authentic and relevant success in digital learning. It includes practical

guidance for educators, practitioners, administrators, funders, researchers and all those filling roles promoting how to best aid youth in leveraging digital technology as they learn, grow, engage and contribute. The materials were sourced through collaborative partnership with eight exemplar OST organizations. The partner organizations represent a real diversity of youth programming, from arts, journalism and media literacy to others in coding, engineering and computer science. While the approaches of our partners vary widely, all the program designs featured here recognize youth as more than passive learners; they acknowledge youth as authors, experts, creators and entrepreneurs. This collection of resources is the product of a two year endeavor intended to name and explain those tools that help close the skills gap in areas needed for youth to thrive.

Our hope is that these resources provide insight and strategy that might be constructively adapted by peer organizations seeking to cultivate youth to become both successful professionals and civic-minded community members.

How Did We Get Here?

In January of 2017 the Susan Crown Exchange (SCE) launched a Digital Learning Challenge. They set out with a goal to bring together a youth-focused learning community of organizations to explore important questions about what it means to be a 21st century citizen. The effort aspired to gain and share knowledge about how digital tools and practices might be leveraged to promote young people's development of skills for the workforce and positive community participation.

The challenge was conducted as an 18 month in-depth effort to understand how digital learning programs can prepare the rising generation to thrive in a rapidly changing world. SCE partnered with a research team of experts in digital media and learning, informal learning design, and research-practice partnerships from the University of California, Irvine and New York University along with leaders of eight out-of-school time organizations with exceptional youth-centered digital learning programs. Focused on the outstanding work of each of these eight organizations, our collective embarked on a rigorous process to discover and share knowledge and tools around youth-based digital learning programs among each other as well as with the broader teaching and learning community. Reclaiming Digital Futures is the output of that collective work.

Our partner organizations are:

- AS220 (Providence, RI)
- Beam Center (New York, NY)
- Digital Harbor Foundation (Baltimore, MD)
- DreamYard (New York, NY)
- Free Spirit Media (Chicago, IL)
- The Knowledge House (New York, NY)
- West Michigan Center for Arts and Technology (Grand Rapids, MI)
- YOUMedia (Chicago, IL).

Visit scefdn.org/DLC for a comprehensive look at the process for bringing together the collaborative learning community that produced this toolkit.

The Key Takeaways

On the whole, our partner organizations didn't start designing their programs asking the question, 'What can learning digital technology do for youth?' Instead they began with the question, 'What do our youth and communities need to thrive?' In this way, our digital learning partners commenced their work aspiring to strengthen young people in a new world, promoting connectedness, community and contribution. This orientation shifts focus to a notion of **community-based digital learning,** which might look like: hosting a weekend hackjam (a community event where youth help local non-profits to build or manage websites); developing partnerships that connect underrepresented youth to internships at a local news organization; or bringing in local artists to work with youth to co-create a mixed media installation. In all of these examples a key outcome is the creation of moments when youth participate in real-world learning and contribute to their communities in ways that are authentic and generative, and in the process engage in substantive learning.

Our partner organizations didn't start designing their programs asking the question, 'What can learning digital technology do for youth?' Instead they began with the question, 'What do our youth and communities need to thrive?'

More than this, programs were built with specific and tangible outcomes for supporting youth futures that met those identified needs. There is a huge array of possible digital futures. Leaders need to know which futures their organization will work to support and how this choice translates into an intentional strategy connected to the community they serve. Is the goal to prepare the next generation of computer scientists and engineers and address issues of representation in the technology sector? Is it to develop digital storytelling skills through film and media that allow youth to give voice to their community's needs? Is it to promote more general qualities of creativity and agency? Each of these visions entails different futures, both for individual youth and their communities, and need to be contemplated carefully by organizational leaders.

Technology has become one (very attractive) tool in the work to achieve all of these futures, but as our resources will illustrate, technology is just that, a tool, rather than the endpoint of the learning process. Teaching youth to become fluent and skilled in uses of technology for the sake of meeting arbitrary standards is not the goal, but is instead viewed as a useful avenue to engage youth to potentially transform their communities and worlds. Instead of technology working as a means of isolation, it becomes a means of connection, empowering youth to create meaningful contributions to their world. Kids are encouraged to voice their views about issues they care about, solve problems they see in their communities, develop a range of critical skills and lay future pathways as both professionals and citizens. The key outcome of this work is providing the opportunity and preparation for youth to participate in and contribute to their communities in ways that are real and generative; and, incidentally, it spurs substantive learning.

Getting this work right is not the effort of a lone genius. Our program partners have been successful because their leaders gathered input, insight and commitment from a team of collaborators and advisors. At all of these organizations we found the common thread of room for both broad view and deep vision in thinking about how to actualize intentional outcomes. Additionally, these organizations have thought about the balance of skills

young people will need to be prepared for the futures they want to support. Their programs move beyond simply teaching technical knowledge or fluency with particular software. They see social and emotional skills as just as necessary. Our partners operate with the understanding that collaboration, agency, critical thinking, adaptability, and a growth mindset are all critical for any future success. On top of figuring out the mixed skill sets they need to provide, the featured organizations have also put in place the pedagogical approaches needed to teach those skills as well as secured the capacity needed to execute it all. Our partners' experiences make clear that staffing is a crucial component on which success and failure might teeter. Executing successful programs invariably requires having the right staff equipped with the right mix of technical and social and emotional skills themselves as well as the ability to draw support from the right professional networks. Among the resource materials, you will find examples of how some of our partners are using professional and community-based networks to maintain, deepen and scale the supports offered to the youth who attend their programs. Various strategic decisions about how to incorporate technology as a useful tool round out the mix of best practices we share from our partners.

> Instead of technology working as a means of isolation, it becomes a means of connection, empowering youth to create meaningful contributions to their world.

What You'll Learn

The range of approaches and resource material shared here is offered as guidance, not as a set of recipes to be followed to the letter. Rather than a single silver bullet, this toolkit offers a range of considerations, approaches and stories surrounding five strategic areas where organizations will need to make decisions and tailor their actions in order to achieve the successes experienced by our partner organizations. These areas include: **pedagogy, skills, technology, community and capacity.**

In each strategic area the full version of this report and the DigitalLearningPractices.org site offers an overview to assist in framing ideas and touch points as well as a collection of individual resources providing practical information around best practices and how they can be implemented.

The resources also include **perspectives** on different issues, practical **how-to's,** and **case examples** that shed light on how some of these programs work and feel on the ground. Some of the resources have been authored by leaders of our partner organizations, and others have been produced by our research team. Together, these resources provide a knowledge base for designing youth-centered learning around digital technology and hopefully help to shift the broader thinking about how and why educators engage young people in building digital skills and fluencies.

Impact and Next Steps

The distinctive vision of digital learning shared by our partner organizations focuses on youth power, creativity and agency instead of sole attention on technology or media. This kind of digital learning involves making and creating, amplifying youth voice on issues that matter, balancing hard and soft skills, enhancing connections to culture and

community, and directly linking youth to future opportunity—not only as professionals, but also as citizens.

We hope this toolkit inspires and enables more of this type of preparation, equipping youth with both the supporting knowledge and practical experience to reclaim their digital futures as leaders in professional worlds and civic life.

We ask that you take in these collective resources and do one or more of the following:

- Incorporate these practices in your own programs and organizations
- Remix these practices, adapt them, and share them back out with the world
- Contact us - particularly our partner organizations - and ask for advice, share your thoughts, and network to better serve our youth and communities

How to Read This Report

Rather than a linear narrative, this toolkit is designed to be engaged with based on your interest. The individual resources stand on their own and can be read independently of one another. However, for each of the major topics - pedagogy, skills, technology, community and capacity - we include a ‘guiding perspective’ at the start of that section that helps to frame the topic and highlight the key design principles that are found within the individual resources that follow.

Guiding Perspective:

Pedagogy

Develop an approach to fostering learning that infuses digital tools and practices with a deep focus on positive youth development.

When making decisions about pedagogical approaches to digital learning program design, organizations have much to consider. They have to determine programmatic structure, the what and how of the lessons or curriculum educators will teach, and now more than ever, how to infuse media and technology in meaningful ways. For many, there is still a steep learning curve when it comes to designing learning that extends beyond the basics of technology integration to substantive uses of technology that supplement and extend already strong projects and lessons.

Basic efforts in technology integration might directly teach youth a specific predetermined tool and provide them a limited set of rote skills with the new technology. Too often, the effort ends there. New tools are being introduced with little or irrelevant context, disconnected from any type of enriching experience, and with a predetermined and narrow standard. For example, a coding bootcamp may be structured as a series of classes that teach students to program in a specific language, but if the classes are divorced from application in meaningful work, play or goals relevant to youth, much of the potential of digital learning is lost.

So what does more robust digital learning pedagogy look like? The organizations highlighted in this toolkit exemplify a deeper, more impactful and more relevant approach through utilizing the following pedagogical strategies in their programs: activating youth interest, guiding youth to have impact, creating ambitious and collaborative digital learning projects, building a culture of trust, and orchestrating learner-centered supports.

- **Build programs based on youth interests and motivation.**
  Wondering how to do this without the learning experience feeling contrived or missing the mark? One best practice that illustrates this principle is to co-design programs with youth, combining educators' expertise with youth interest and insights about what is most meaningful to them.

See our resource on Tapping Youth Interest to Cooperatively Design Out-of-School Digital Learning Programs.

- **Guide youth to be impactful.**
  Often the most powerful learning experiences are those that make a difference in some area of a young person's life or in the lives of those they're connected to. Creating and carrying out projects that help youth develop personal agency and voice are powerful and vital launchpads for learning; this is especially true when youth are able to both receive and deliver impactful learning experiences. Providing opportunities where young people learn to engage, grapple, problem-solve and make decisions—whether or not technology is involved—builds a critical skill set that prepares youth to leverage agency, voice, and power in responsible ways.

Hear from a participant in Free Spirit Media's programs about how she's developed digital stories about issues facing her community.

- **Develop and scaffold ambitious and collaborative digital learning projects.**
  Typically, we think about skill development as a progression where first basic facility is mastered and then access to more advanced topics is unlocked. This type of scaffolding approach with direct instruction is a common strategy for teaching a new skill or tool. Organizations should consider embedding the same strategy in more ambitious learning projects. Even with complex projects that require multiple competencies and collaboration, a scaffolded approach to skill development can produce not only the effect of leveling up, but also provides a satisfying and relevant end-goal. Creating and structuring ambitious projects in a scaffolded fashion is no easy task, so our resources

Read our resource on Structuring Adult/Youth Collaboration in Ambitious Digital Learning and Making Projects.

include various approaches that emerging and well-established organizations alike can employ.

- **Build a culture of trust.**
  In order to get to a point where deep learning and collaboration can happen in the context of digital learning projects, youth and educators need to have a sense of belonging, shared understanding and trust. Organizations accomplish this through norms and rituals that might go unnoticed since they're less focused on skills or knowledge, but are still critical to successful programs. Effective practices create an environment where there's openness to set-backs, understanding of shared and diverse backgrounds and a sense of collective purpose.

Read our resource on The Role of Trust and Ritual in Youth Digital Learning Projects.

- **Orchestrate learner-centered supports.**
  Youth may already be deepening learning around their interests by creating "just-in-time" experiences. They may be creating projects for themselves that have an actual impact on their personal lives or their surrounding communities. Now what? How can organizations get a handle on supporting all that youth would like to create? One way to solve this challenge is to think carefully about how to surround youth with the right adults, educators and peers as they pursue their digital projects. More ambitious projects might require working side-by-side with more expert adults. In this way, as youth complete more projects, gaining more experiences and knowledge, they also gain more connections and more ways to navigate working relationships. Another approach is to carefully design collaborative interactions between learners with complementary skills, providing each needed support and also the opportunity to learn new competencies from a peer.

Read our resource on Comparative Program Structures in Informal Digital Learning Organizations.

Tapping Youth Interest to Cooperatively Design Out-of-School Digital Learning Programs

Anthony Pellicone - University of Wisconsin-Madison

Rafi Santo - New York University

Educators often develop digital learning programs to meet youth interest. But they can also leverage these interests by directly involving them in the design of new programs, leading to deeper learning and engagement. This resource explores what this looks like in practice.

What's the Issue?

Youth come into informal learning environments with their own interests and expectations. These interests can present powerful pathways towards deeper learning, and present both participants and educators with a starting point for thinking about new programs. However, it's not always clear how this might work in practice. Here, we share how Chicago Public Library's YOUmedia program uses an approach to youth development that supports teen participants to be actively involved in the design of their own programs with the guidance of librarians. Inspired by cooperative design methods, YOUmedia taps into youth interest to create meaningful, engaging, and well-loved programs alongside their teen patrons.

In this brief we first explore the idea of cooperative design, outlining various approaches that can support organizations to think through what might work best in their context. We then explore a number of programs developed through YOUmedia's cooperative approach—professional level gaming tournaments, a literature fest aimed at teen reading interests, and a video blog called Let's Play are all programs co-developed by teens and adults. We highlight the way YOUmedia facilitates the creation of these programs through a 'mini grant' program, which supports individual librarians to recognize and cultivate youth interest at a local, branch level. We then describe what kinds of outcomes are associated with this approach, highlight tensions and challenges, and share tips and guiding questions you can consider in your organization.

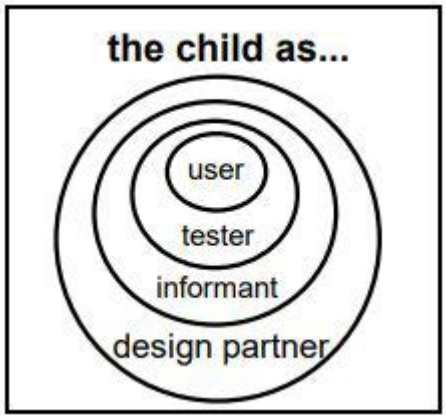
What Does it Look Like?

The adults in your program are experts: they know how to work with youth, they know about technology and learning, and they know how to work within the boundaries of your program. However, your youth participants are experts too. They know about their own reality of living with technology every day. They know about what they are interested in learning, and they know how to talk with and appeal to each other. Adults and youth participants both bring valuable perspectives to the shared task of designing deep programming. Allison Druin, a researcher who studies ways that youth can be involved in and even take leaderships roles in the development of new approaches to learning, puts it this way:

Adults and youth participants both bring valuable perspectives to the shared task of designing deep programming.

> *While [youth] cannot do everything that an adult can do, as partners [youth] can have an equal opportunity to contribute in any way that is appropriate for the design process. For example, adult researchers that are visual artists or educators can support the technology design process with domain specific expertise and experience. Each cannot do what the other does well. The same can be said of child researchers. They too have special experiences and viewpoints that can support the technology design process that other partners may not be capable of contributing...* (Druin, 2002).

Druin offers a framework for understanding different roles and positions that youth might play within the process of developing a new learning experience. At a surface level, programs are designed by adults and then experienced by youth, with the youth as 'users'. Going further, educators might involve youth as 'testers' for new designs or programs, with youth experiencing prototypes and giving feedback on them. Teens might also be used as 'informants' - for example a focus group during a critical stage of the program. And finally, we can think of teens as design partners, where they are involved in the design process every step of the way, from ideation of new programs to design, implementation, reflection, and iteration.



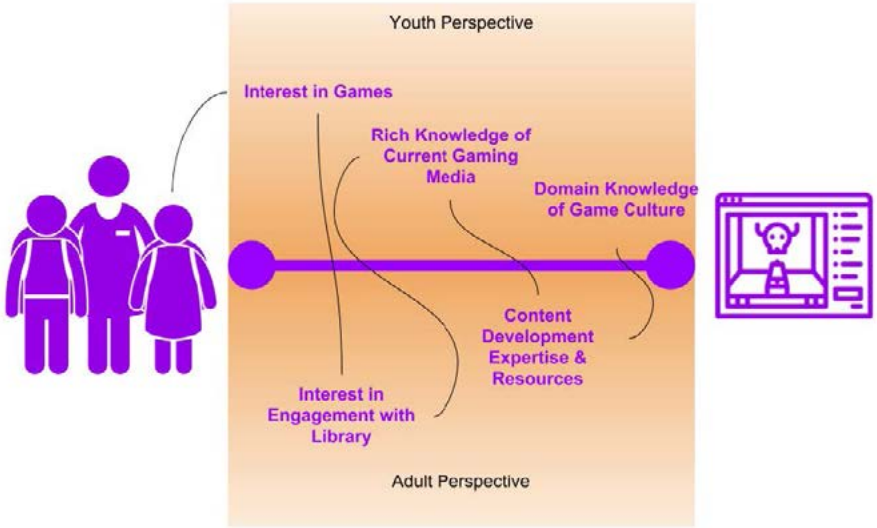
Excerpted from Druin, 2002

Case Example: Let's Play

As an example in practice, we can look towards Taylor Bayless, an educator at YOUmedia, describing the back-and-forth process of developing a video series with teens that centered on gaming,

> *[Co-design of programming] happened a lot with my gaming group. It started when I noticed there were a lot of teens playing video games in the space and I wanted to engage them somehow. I was like, oh we're going to do a video game blog. It's going to be great. We're going to write. But they didn't want to write after school. So then I thought, okay they want to talk about games with me, but how do we turn this into something production oriented, which is how the podcast happened, which we did for five or six years.*
>
> *At a certain point, one of my teens came to me and said, "Oh, there's this new smash brothers game coming out and have you done a 'let's play' before? Do you know what 'let's plays' are?" I said, "I kind of vaguely know what they are. The YouTube videos of people playing video games with commentary over top." He responded, "Well, can we do one of those? Can we do like a series? One to represent each character that's going to be featured in the new Smash Brothers game." I said, "Okay, why not?" We can figure it out. We have the tools. Let's do it. And then that gaming group really shifted to a focus on let's play production, because that was the way that they were engaging in video game culture at that point.*
>
> *It stopped being about podcasts being the way for them to discuss games.* ***Let's plays [were] what was relevant to them and what they wanted to make, so there was a total shift there and then in the past year, there was a shift from YouTube lets play videos to streaming on Twitch. They're like, "no we want to stream now, not make let's plays," so a lot of that is driven by, I think, the media that they're consuming and they decide this is what I want to make, because it is sort of the dominant force.***

The example above is less structured than a formal co-design experience, but it speaks to the shared, reciprocal nature of cooperative design as a process. We can visualize that process in the diagram at right:



We can imagine a different possible outcome: Taylor makes a gaming program with no youth involvement, which is perhaps somewhat popular, but falls off quickly. Or the youth leave the library to play games by themselves with guidance towards taking on more leadership roles. Instead, as visualized in the diagram above, there is a give and take: youth bring their passion and interest to the library, Taylor uses her expertise as a librarian and her own interest in gaming to recognize the potential for engagement, Youth provide knowledge of their interests (and have the freedom to do so) to structure a meaningful and appealing program, Taylor uses her expertise with media creation to help them put that into a polished format, and the youth further refine the format by gearing the program towards a more relevant and current genre of practice within the gaming world - live streaming.

Cooperative design brings more perspectives into program development, allowing youth to create meaningful programming that is culturally relevant and tied directly to their lived reality.

Apart from the benefits to both the program (relevant and attractive activities for youth), and to individual youth (hands-on knowledge with media production), there is also a question of equity. Cooperative design brings more perspectives into youth development, allowing for youth to create meaningful programming that is culturally relevant and tied directly to the lived reality of their lives.

Case Example: Building on Youth Interest to Create Teen-Run Gaming Tournaments

At a certain point, educators at Chicago Public Library had been having difficulty with the video game offerings at their YOUmedia space at Harold Washington Library. Informal play sometimes turned into bickering and disputes over rules, fair play, and sportsmanship. Taylor at YOUMedia described how staff worked with a young gamer named Devon to tap into his passion for competitive play:

Devon graduated this past year. He wasn't really involved in YOUmedia his freshman and sophomore year. He would come to the space and play video games... Teens would play Super Smash Brothers in the space and then they got kind of rowdy and things got a little bad... So we made the decision of removing the game from our collection, but telling the teens if they wanted to play it, they had

to organize a tournament in order to play the game. That sparked something in Devon and he decided he was going to create tournaments, and not just like a little tiny tournament, these were going to be big scale professionally run tournaments, because he had been to some professional tournaments and found them really uninviting for a newbie and for a teenager, so he wanted to create something that felt professional, but was welcoming.

So I worked with Devon over the course of two years and we went from his first tournament, which was 20 people, to tournaments that got up to 100 participants. We first had them in YOUmedia and then we moved to another library space. To do that, we had a meeting with one of our staff members from corporate and private events get involved, so [Devon] had to learn about space planning, planning for fire code and following all of the regulations of the building.

Devon's gaming tournaments started with an interest that he had - playing Super Smash Brothers with his friends. However, this interest was mediated by the expectations of the YOUmedia space, leading to the structure of tournaments. Building off of that interest and expectation, Devon worked with the expertise of librarians as event planners and organizers to create something ambitious - gaming tournaments at a nearly professional level, similar to the recent rise of eSports tournaments across the globe, an increasingly big business. Apart from creating a successful program, Devon also learned about event planning, community organizing, and collaboration. More than him just being a source of information to structure a program, by involving Devon, he grew as a person, a professional, and gained valuable skills and knowledge in his work with YOUmedia.

Teens gathering at the teen-led Super Smash Brothers gaming tournament at the Harold Washington Branch YOUmedia

The example above points towards a vital aspect of programming driven by youth interest. In the example, Devon is likely somewhere in between an informant and a design partner. Sometimes your youth participants might be better situated as a user (for example, suggesting an outside speaker to come to talk about local history), and sometimes they might be best used as an informant (helping to give feedback on policies around material usage), but here we are encouraging you to think how you might engage your youth fully as design partners, as Taylor did with Devon.

Case Example: Mini-Grants Igniting Cooperatively Designed Programming

Devon's professional-level tournaments are just one example of how YOUmedia succeeds in structuring opportunities for youth co-design. The excerpt above exemplifies the YOUmedia approach, where motivated youth tap into informal interests and gain valuable experience in planning, organizing, and designing programs through the support of educators. But how can this kind of approach be supported systematically? At the Chicago Public library, the YOUmedia program, supported by a central team that serves almost twenty YOUmedia branches, and program coordinators provide resources to nurture youth interest through mini-grants - small dollar awards given to local branch young adult librarians that can be used to support the development of ideas from teens.

One powerful example of the mini-grant approach in action is the annual Comic Fest, an event put on by the Sulzer Branch Youth Council, who, with the help of adult librarian design partners, put on an event dedicated to 'zines' - DIY published comics and magazines. The event attracted over 400 attendees in 2017. A story in the Chicago Tribune highlights the event:

> *Aimee Norris and Deanie Adams, Sulzer's two teen services librarians, say that the students they work with were the ones to initiate the program. "A lot of these kids were born in the 2000s and grew up with computers all around them," Norris observes. As a result, she and Adams have both seen the students take a great deal of interest in comics and zines' handmade, tangible, and distributable qualities. Norris says that is why an event like Comic Fest was such a natural fit.*
>
> *Borrowing concepts from established events like Zine Fest and the Chicago Alternative Comics Expo (CAKE), the teens reached out to comics artists and zine producers from around the city.*

Guiding Questions

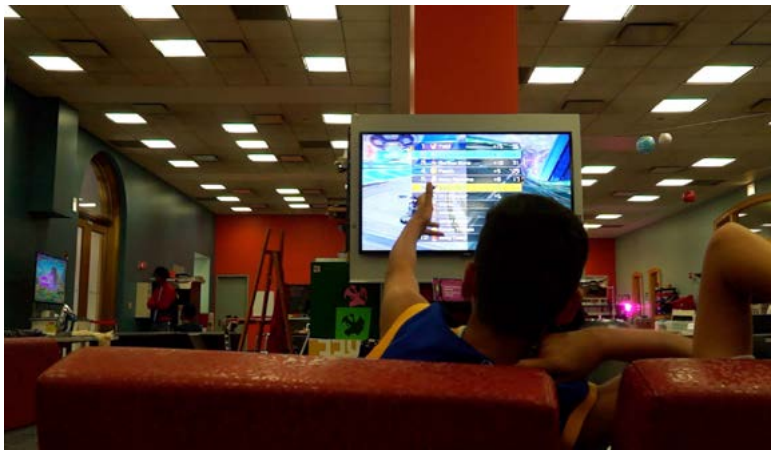
Remember that youth can play varying roles in the cooperative design of programs to spark their interest, and higher levels of participation are not always 'better'. As you consider youth involvement in the design of your programs, you can consider the following:

- What are big areas of youth interest related to digital culture, media and technology right now? How might these be engaged to develop new programming both for and with youth?
- What's the appropriate level of youth involvement given both issues of age as well as the nature of their engagement with your organization?
- Are there certain areas of your programming where youth input and perspectives are lacking? What could it look like to involve them?
- Can they be testers of new ideas? In what context can they participate in pilots for new approaches or tools?
- Can they act as informants more actively giving feedback on program directions?
- What might it look like for youth to be design partners on new initiatives?

What Does it Lead to?

Research on cooperative design highlights benefits for the design partners (who are better able to produce designs relevant to their users), the design team (both youth and adults learn from each other), and for the individual learners (who are now skilled in the design process). More specifically we can think of outcomes as such:

- **Skills** like design thinking, collaboration between adults and youth, fresh perspectives for adults, and expert skills in practical elements (e.g. Devon as an event planner, or Taylor's group as media producers) for youth, working in multi-generational teams.
- **Culturally relevant programming** in local communities, designed by members of that community.
- **Youth buy-in in programs**, with youth acting to promote and attract friends to programs that they have designed, and are eager to see succeed.
- **Contribution to community**, with youth working to produce opportunities for their peers that are meaningful.
- **Increased youth motivation and agency** through the development and implementation of something rooted in their interest.



Tensions and Challenges

- **Division of labor and decision-making.** A key question, and potential challenge, of involving youth in the design of new programs concerns what their responsibility is, versus what role educators will play in the process. Being intentional and clear about who is doing what and who has decision-making power can support reaching the outcomes you care about. See our resource on adult/youth collaboration for more perspectives on this issue.
- **Design is a skill, and not an easy one to master.** Both adults and youth must be open to learning and trying new approaches in order to arrive at new program designs.
- **Working as a team requires trust.** Adults must trust that youth are committed to a large, difficult project. Youth must trust that adults actually value their input, and will follow their lead.
- **Co-design is labor intensive.** In many ways, adult educators taking the reins for a passive youth audience is easier, since they're already accustomed to that way of working. However, in doing the work of cooperative design, both adults and youth benefit.

Sandboxes, Studios and Ladders: Comparative Program Structures in Out-of-School Digital Learning Organizations

Jean Ryoo - University of California, Los Angeles

There are many ways to structure digital learning programs depending on the kinds of learning outcomes and youth pathways an organization cares about most. This resource explores various program structures, outlining how each offers different kinds of opportunities for learning.

What's the Issue?

Unlike formal education contexts where students almost universally experience learning in age-specific groupings while moving from subject to subject throughout the school day, out-of-school time education programs have the opportunity to organize students' learning trajectories in more diverse ways to better match the needs of their youth and communities. Looking across leading organizations, we see digital learning programs that are structured quite differently, reflecting varying pedagogical philosophies and learning goals for youth, all with their own unique affordances and constraints.

This practice brief provides an overview of three different program structures utilized by out-of-school time organizations. The first is a "sandbox" approach, where freedom to hang out with peers and explore a variety of different interests allows youth to define their trajectories of learning and expertise development. Next we describe "studio" approaches, where youth can either sample or delve deeply into a selection of different program offerings focused on a range of skills or subject areas, each with expert support. Finally, we explore "ladder" program structures, where youth can level up over time from one programmatic opportunity to a next one that explicitly builds on the last, deepening their expertise along the way.

What Does it Look Like?

Sandbox, Studio, and Ladder pathways create different contexts for entry into youth-driven digital learning as described below.

Sandboxes - YOUmedia

A 'sandbox' approach focuses first on providing a low-stakes and social environment for creativity in which youth may initially show up to have fun with peers, but in a context where countless objects, activities, and opportunities can simultaneously inspire engagement with new skills and learning. This is true at YOUmedia, a program based at the Chicago Public Library, where the goal is to create a welcoming space where youth do not feel an agenda is being forced upon them, but where they can be connected with peers, resources, and supportive adult staff who can help them identify and pursue personal projects in anything from music production to fashion to animation. For example, teens usually arrive in groups, sometimes with food, seeking a place to hang out, eat, and chat, or other times with musical instruments, seeking a place to jam and create beats. However, as teens are hanging out with their peers, there are always other activities happening in the same space, such as an adult giving a virtual reality demo or peers designing animations on computers. Teens can then choose to move in and out of those activities - building on their curiosity about how to record albums or design clothing like their peers - which can evolve into youth-driven engagement with more formal projects and workshops or seeking adult mentorship to learn new skills.

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Studios - AS220 and WMCAT

Studio style programming focuses on having choices of multiple, ongoing formal programs or spaces, each dedicated to different creative disciplines. At AS220 Youth, the studio-style approach involves offering a range of courses in five main programs, organized into distinct studios: visual arts, apparel/fashion, performing arts (poetry, acting, theater), music, and digital media (photography, video, graphic design, film). Youth visit AS220 and sign up for specific classes in the five different studios with the opportunity to learn skills specific to an artistic discipline and make their ideas come to life, all with the goal of allowing youth to organically gravitate toward what they find interest in, from teaching artists to entrepreneurs. The individual classes also offer youth opportunities to connect with the community organizations on paid projects. For example, the apparel design students created the logo and jerseys for a local roller derby team. Over time, experiences in the different classes can then lead to youth joining the AS220 apprentice program to become teaching assistants for instructors, or find internship opportunities outside of the organization. In these studio style programs, educators get to know youth over time to understand their interests and potential learning pathways toward best supporting their learning needs, so that youth are never stuck going down set pathways and can, instead, choose learning trajectories that work best for them.

Studio style programming focuses on having choices of multiple, ongoing formal programs or spaces, each dedicated to different creative disciplines.

At WMCAT, there are six studio options that youth can get involved with: photography, ceramics, fashion design, illustration, video and audio production, and video game design, with the options evolving over the years. Students can enroll in either a single semester or a year-long track of classes that meet twice a week, with Fridays being 'optional open studio' days where youth can work on projects, attend guest speaker events, or go on trips with their peers. WMCAT works closely with the local public school district and, as a result, they have opportunities to turn studio experiences for their youth into art credits on their high school transcripts, or to align shorter experiences with in-school learning targets where youth can create projects related to topics they are learning in specific classes over two week periods.

In this way, students experience a taste of various creative pursuits while gaining new skills that they can continue to deepen if they want to, or simply explore in the short-term, with potential opportunities to relate them to in-school learning.

In "ladder" program structures, youth can level up over time from one programmatic opportunity to a next one that explicitly builds on the last, deepening their expertise along the way.

Ladders - Free Spirit Media and The Knowledge House

In "ladder" program structures, youth can level up over time from one programmatic opportunity to a next one that explicitly builds on the last, deepening their expertise along the way. At Free Spirit Media, students' learning pathways may include a studio-style experience with initial introductory classes in various programs—from journalism to television media—but the organization also focuses on supporting youth to move up ladders from the high school to young adult programs to internship opportunities in the city. For example, in the Real Chi Youth program, students may begin in high school programs learning about media reporting, but then continue to advance until they are going around the city in smaller units to report on various topics, setting up interviews and producing documentaries and news stories with community impact. In FSM's Industry Pathways programs, students climb up the ladder of course options to build skills and portfolios that lead to internship placements in television and journalism industries

Guiding Questions

As your organization considers the program structure it wants to pursue, it is important to ask the following questions:

- What are your organization's goals for youth learning?
- How do you want to incorporate media and technology into your organization's programs in ways that invite youth engagement?
- What are your local community's greatest concerns and interests, and what are the advantages and disadvantages of addressing those concerns and interests with sandbox, studio, or ladder pathways?
- What learning pathways work best for your teaching artists, educators, and adult mentors? Are there specific formats in which your teaching community would thrive most?
- Who are the local companies and organizations that you want to partner with that could support your organization's mission/vision in program design?

during their high school and college summers. Many youth who begin at Free Spirit Media are eventually placed on professional film sets or working at music festivals, learning career readiness, communication, and self advocacy skills that they can transfer into the working world.

At The Knowledge House, programming is focused to support youth to move from 'Intro Light' classes (courses delivered in modules of 20, 40, or 80 hours that are focused on exposing high school students to new tech skills and knowledge), to then secondary classes in the Core Program (which introduces youth—usually high school juniors or seniors or young adults—to technology-based tools and skills in a 150 hour course), followed by career training with the Knowledge House and/or partners. The advanced programs, aiming to lead into career opportunities, have two levels adding up to 200 hours over four months that provide career support and training, from resume review to experiencing 'mock dev shops' where youth form project teams to work on real client projects. These, in turn, lead to opportunities to interview with clients for potential subsidized internships paid for by both The Knowledge House and partnering companies. In these contexts, youth become skilled in areas such as data science or web development toward being career-ready and able to find paid work opportunities immediately out of the organization. To ensure that youth are prepared for rigorous learning experiences and maintain dedication to the process, The Knowledge House recruitment process involves interviews and tests so that youth show their persistence through challenges to enroll, while also proving when they are ready to advance up the ladder to experience new courses or career opportunities.

What Does it Lead to?

Each of the different approaches to program structures described above have positive impacts on youth learning pathways in terms of skill and knowledge development. These include the following:

- **All of the above approaches provide space for youth to drive their own learning trajectories with support from adult mentors/experts.** Whether in a sandbox, studio, or ladder context, youth choose the direction of their learning experiences that can go as deep as they want them to go.
- **The sandbox approach provides opportunities for youth to explore new skills or subjects in low-stakes contexts.** Youth may just be hanging out with peers initially, but their ultimate experiences are learning new skills and pursuing their own projects in a relaxed and more exploratory environment.
- **Studio programs offer a range of opportunities for youth to test ideas and explore new skills in organized contexts with expert peers and adult mentors.** These programs allow youth to define their passions and interests over time and through hands-on experiences that, in turn, support youth in being better informed when deciding the next steps they want to take in their learning trajectories.
- **Ladder programs support youth to deepen their learning in specific target areas of interest that can eventually lead to career or internship opportunities.** Pathways for building expertise and finding paid jobs are clearly defined, helping youth to both envision and pursue their personal career goals.

Tensions and Challenges

While the programs described above reflect well-established pathways in their respective organizations, all of the organizations have also remained nimble, keeping an open mind toward ways to shift and grow these pathways to better meet the needs of their local community, youth, educators, and leaders. In other words, while these pathways work well within each of the organizations described above, every organization is also continuously tweaking program offerings and building relationships with new partners to offer dynamic and improving pathways for their youth. The following tensions are important to consider when designing program pathways in our organizations:

- **Balancing which pathways work and how to make them better can be difficult.** Just because a specific pathway seems to work well this year does not mean your organization should stop trying out other potential pathways that may work even better next year. However, finding the right amount of bandwidth and educator support to offer different kinds of programming can be challenging.
- **Often organizations find the need to create hybrid types of pathways.** Combining the studio approach with the ladders approach, or the sandbox approach with the studio approach, may better fit the needs of youth and educators. For example, at AS220, the creation of the FUTUREWORLDS annual event has resulted in more ladder-type opportunities sprouting out of studio pathway structures as advanced students from each studio apply to be part of the FutureWorlds project team every year. Aligning your organizational structure to meet the interests and needs of both adults and the youth you serve is important.
- **Program pathways need to match your organization's mission and vision.** For example, connecting youth with paid internships may not be an end-goal of your organization. Giving students a safe space to explore new interests may be more important. These questions about outcomes have to considered by each organization.
- **Finding the right partners for ladder pathways can be difficult.** If potential client partners who want to hire youth do not understand the mission and vision of your organization, challenges can arise related to the hiring process, best practices for supporting the continued growth of our youth, etc.

The Role of Media and Technology

Media and technology are the central tools and areas of learning for youth whether they are in sandbox, studio, or ladder type pathways. In the case of sandbox contexts, media and technology may be present everywhere in the space, serving as a hook to engaging youth in new learning opportunities as they hang out with friends. In the studio learning pathway, specialized media and technology tools are central to how youth create clothing designs or record music or engage in journalism projects. And in ladder contexts, acquiring expert skills and knowledge with industry standard media and technology can lead to incredible new internship and work opportunities that pay.

Youth-led Advisory Boards to Promote Youth Leadership

Anthony Pellicone - University of Wisconsin-Madison

Rafi Santo - New York University

Youth input on programming, especially in new areas like digital learning, is vital to maintaining a responsive environment for learners. This resource explores how organizations support youth to steer programs through the formation of youth advisory boards.

What's the Issue?

Youth input on educational programs, policies, and personnel is vital to maintaining a responsive and engaging environment for young learners. However there are often tensions and challenges to fully and authentically incorporating youth perspectives into a program. This resource looks at cases where organizations have developed ways to allow youth to steer digital learning programs through the formation of youth advisory boards.

We share an example of what this can look like through the work the Digital Harbor Foundation (DHF) in Baltimore, Maryland, where a group of motivated youth started a working group dedicated to increasing the gender diversity in the technology-focused programs that DHF offers. We then explore tensions and challenges, along with questions to consider in your organization if you're considering using this approach.

What Does it Look Like?

At Digital Harbor Foundation in Baltimore, a group of youth led an effort to address a long-standing problem: the gender gap in technology sectors. A passionate, young female participant created a female and non-binary working group, called The Makerettes. With DHF's support, this group eventually led to a more gender diverse cohort of participants than any of DHF's existing programs.

DHF has a youth advisory board, which is a formalized part of their organizational structure. A female participant in the advisory board recognized the gender disparity in broader DHF program participation and worked to correct it. Steph, one of DHF's leaders, described it this way:

> *Of the girls in my cohort, there [were] three of us who were here regularly. Out of, at that point, maybe 40, 50 kids on and off? So we formed an all girls group. The staff supported [the teen that suggested the idea] in that, and it was something she and I worked on. The girls could get together, and have special meetings that were just for the girls. Then they would share with the new incoming girls through Maker Foundations [DHF's introductory course offering].*

> *[We used that as a hook] for getting girls in Maker Foundations, saying, "Hey if you're part of this program you can be part of this cool club, too." They were just doing special projects on their own. It started as this really sort of informal thing that one of our youth really cared about and was passionate about. Since Mary [a DHF educator] came on she has taken it and gone miles and miles further with it, which is awesome. And then from that we said, "What if we did an all girls cohort?" So you know, we run two cohorts of Maker Foundations at a time, what if we have one of those, so two days a week, all girls? So we tried that. And it went awesome.*

This success was spurred by the initiative of a single program participant, who recruited her friends, and who, in turn, mobilized to create the largest female cohort the program had ever seen. Eventually it was integrated into a co-ed cohort. Shawn, another DHF leader, describes it as such: "We ended up with the highest mix of girls in our co-ed cohort that semester as well, which was really interesting. Somehow the all girls cohort propelled enrollment for females in the co-ed cohorts." All of this came from a standing structure within DHF to maintain and nurture a youth advisory board, giving participants the initial platform and power to address a problem that they perceived with the program.

Beyond the example of The Makerettes, Steph at DHF also relays how their Youth Steering board has helped them to structure their programmatic offerings so that they fit the day-to-day lives of older teen participants:

> *As they've gotten older, some of them have trickled into high school. We just had our first big rush go into high school this fall. The feedback we're hearing from them is we need to have programs later in the day. Teens still want to come, but some students don't get out of school until 4:00 or 4:30, meaning they can't arrive until 5:00. One of the things that we're considering for the fall is extending the program to go until 7:00.*

From addressing issues of gender disparity to adjusting programs to fit the schedules of youth, an active youth advisory created the conditions for greater ownership and equity for participants, as well as programming decisions that were more aligned to youth needs.

What Does it Lead to?

Thomas Akiva, a noted youth development scholar, conducted research that presents several different benefits of involving youth in programmatic decision making (see this 2014 journal article for more information):

- **Developmental benefits.** Teens are often entering a stage of life where they are making more decisions and want to experience leading and working as a team. Often this opportunity is lacking, as formalized avenues (e.g. student government) may be heavily constrained and not be seen as meaningful by students.
- **Increased motivation.** Youth involvement may also lead to greater buy-in, as well as greater ownership and engagement with program experiences. Increased motivation due to greater levels of leadership has also been shown to improve retention among youth participants of informal learning.
- **Skills acquisition.** The skills of working on a youth advisory board are well aligned with what we might think of as 'workplace' skills, such as planning, communication, and collaboration. Beyond workplace concerns, experience with leadership is personally rewarding. It can help youth to build identities as leaders

Guiding Questions

Below are some questions you might ask yourself if you're considering implementing this approach in your organization:

- Division of Labor. What roles do you want adult educators playing in your youth board? What roles should youth take on? How can adults and youth divide labor in cooperative ways?
- Impact and Meaning. If youth suggest something, are there then avenues that allow for that suggestion to have an effect in the larger organization?
- Developmental Appropriateness. Different age ranges have different abilities in terms of planning and collaboration. What are developmentally appropriate leadership tasks for the youth you serve?
- Time and Labor. Organizing and planning are not easy tasks. Having a meaningful advisory board will take both time and effort on the part of your youth and your staff. Are you able to give them supports and in some way acknowledge or even compensate them for their work (e.g. with resume lines, community service credit or stipends)?

as well as belief in their ability to affect change in the world.

- **Civic participation.** Youth boards provide early experience with participatory, direct influence on a system, which can be argued is a pathway to later forms of civic participation.

In a survey of 979 youth across 63 institutions, Akiva, Cortina and Smith find generally that sharing decision making with youth is associated with higher levels of motivation across all age ranges. For older participants there are also gains in the civic, socio-emotional skills, and decision making, corroborating previous research that suggests that these benefits tend to occur more fruitfully further along the development spectrum as participants reach high school age:

> *Indeed, if adolescent identity development involves a tension between maintaining and exploring one's identity...offering adolescents the opportunity to make meaningful decisions about the operation of a youth program may allow for this exploration in a safe and authentic context, along with potentially providing a context for the development of skills like responsibility. (Akiva, Cortina, & Smith, 2014).*

At the same time, there is also a recognition that not all youth advisory is equivalent: facile or superficial involvement may actually serve to negatively impact youth development along the above categories.

Additionally, these structures have benefits not just for the youth, but also for the programs themselves. As The Makerettes at DHF show, youth understand the gaps in service of current program offerings. The youth advisory board gives them opportunities to bridge those gaps.

Tensions and Challenges

An important aspect with structuring advisory boards is to realize that there must be meaningful participation for teens, but it may not always be best to have advisory boards actively making decisions about high stakes issues in an organization. While advisory boards are generally beneficial, work that isn't age appropriate or work that isn't directed at a relevant and meaningful goal will actually have adverse effects on youth involvement. Striking this balance can be difficult to achieve. Jeff McCarter, the Director of Free Spirit Media in Chicago, describes his organization's youth advisory boards:

> *We've had a youth counsel for maybe five or six years. Informally we always had conversations and focus groups and also just informal feedback, like, 'Hey, should we do this?,' and, 'What's working here and what's not?' But we started the formal youth board with the goal to be a leadership body and a driver of innovation in the organization. Sometimes, however, based on capacity and time available, it has become more of an event planning group. They'll plan a showcase where we show videos and they'll plan a field day where all the programs in the summer get together and play games and get to know each other more.*

Jeff's perspective here highlights a vital aspect of this practice. These sub-organizations are less formal and rigid than in the adult world, but it also takes effort to ensure that a youth board is playing an authentic and meaningful role. This is also visible in the example from DHF, where The Makerettes focused on a specific problem that they wanted to solve. Great care and experienced, professional guidance from your educators are needed to help youth boards focus on deeply meaningful change, rather than focusing on smaller issues that may seem substantial but are not that influential to improving their learning experiences.

Great care and experienced, professional guidance from your educators are needed to help youth boards focus on deeply meaningful change

The Role of Trust and Ritual in Youth Digital Learning

Juan Pablo Sarmiento - New York University

Building trust and sense of belonging are especially important to collaborative projects found in digital learning programs. This resource explores ways that youth development organizations engage in trust-building and ritual in ways that are conducive to deep learning.

What's the Issue?

One of the challenges in youth development is breaking down barriers and building trust, something especially important when working on the kind of collaborative projects often present in digital learning programs. For youth who often have challenging experiences in formal education, collaborating with adults in projects for learning may seem, at first, alien. Yet this kind of opening up is a precondition to learning, collaboration and skill development. The more facilitators want processes of deep involvement and learning, the more they need the group to share values and culture - to trust one another.

The more facilitators want processes of deep involvement and learning, the more they need the group to share values and culture - to trust one another.

But breaking these barriers asks participants to be vulnerable. Opening up opportunities to learn is also opening up possibilities of failure, and that is something we rarely do. Indeed, traditional learning spaces encourage youth to guard against failure through testing and disciplinary practices.

How is it, then, that we as educators manage to get youth to open up and trust them, sometimes within weeks of meeting each other? How do we convey, quickly and efficiently, shared ideas, language and values necessary for working and building things together?

Surprisingly, for some organizations, the key to making complex digital projects of the future seems to be in practices that echo a distant past. Rituals and gestures of trust can be leveraged to bond teams and make youth feel ownership of the community.

What Does it Look Like?

Radical Trust at Beam Center

It's the most important meeting of the week; they call it 'Power Hour.' It's the one occasion where the whole team - from the executive director of the organization to its youth apprentices to all instructors who are often not in the building - shares the same room, what looks like a mix between a shop space, garage and office. Power tools, desks and random craft supplies are strewn about. Going around the room, they share some of the things that made them feel powerful and proud during the week, recounting stories of work and life. Then, after an hour, the group disbands; the director of the organization picks a broom; the head of education a large bottle of liquid soap. Every single member, in unison, moves to fill trash bags with debris, and empty bins with papers and tools. As upbeat music plays from a speaker, the scene is reminiscent of "tidy up time" at Kindergarten; this one slightly more feverish, but just as joyful. The music plays and in minutes it seems that all hierarchical relations have disappeared along with the trash.

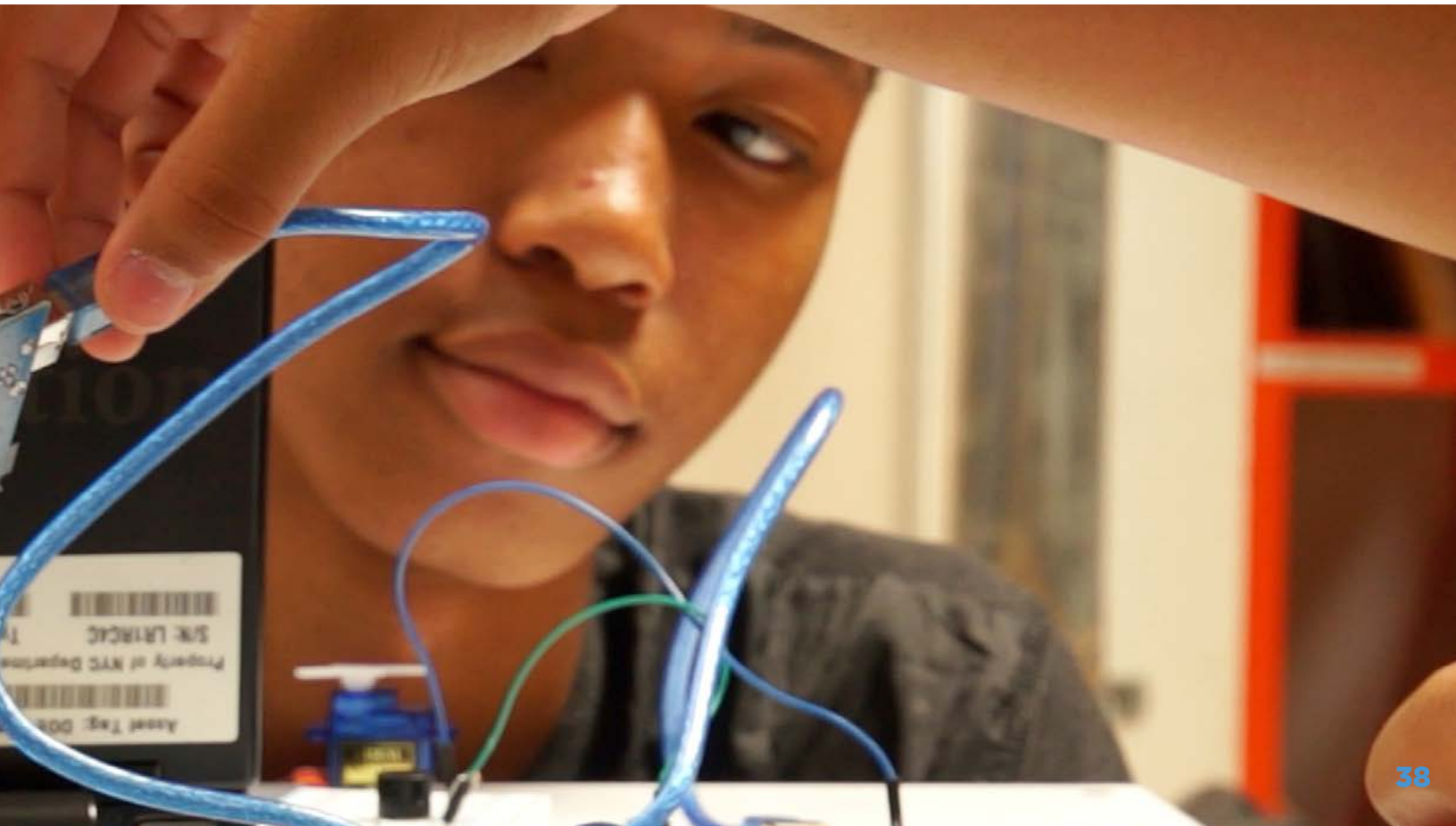
The ritual may seem like a small thing, but it is part of a series of practices that promote horizontality among the staff at Beam Center. And this idea of horizontality, rare in education, seems to make sense in this organization where the lines between learner and educator can be blurry by design.

Beam Center is a digital educational maker space situated in Brooklyn, whose philosophy echoes some elements of the maker movement with a "Burning Man" philosophy of radical change. They teach youth directly and indirectly through several programs at a number of venues. They hold a Summer Camp where artists and youth learn about science and making as they collaborate on crazy projects such as a full-sized

reconstruction of a “fallen spaceship” or giant, human-sized flip books. They have workshops where they do smaller versions of these projects with younger youth in Brooklyn. They train and mentor teachers in schools across New York City schools on how to make their classroom more hands-on and project-based. And they also train dozens of youth, to be ‘Beam apprentices’ over the summer.

At these apprentice workshops, it is often the case that the actual people who are doing much of the instructing are apprentices themselves: eighteen and nineteen year olds who were students one or two years before, who often have a clearer understanding of the struggles and challenges that the newcomers are having than, say, a thirty-year old. These teaching junior-instructors, usually two or three per workshop, are guided and mentored by senior instructors who also help in the design of the curriculum. The twenty-four-odd high schoolers who are taught by them not only learn how to manage complex projects such as the design and programming of arduino robots, but they prepare to be educators themselves, participating in paid internships where they teach six and seven year-olds about STEM in craft-based workshops.

Calvin Stalvig, the apprenticeship director, describes that many students at the outset have a “shell to protect themselves. And then, when they step into a classroom with children, you see it all melt away, and they are so present.” Instructors nudge the youth along to get to that point of vulnerability. For one, most sessions will start with ice-breakers, which often do more than just make students laugh and relax, since they also encourage youth to be present and attentive. Cleaning at the end of the sessions, likewise, communicates that everyone is part of the team and collaborates. It may not be readily apparent to an outsider, but the practice also communicates a respect towards the space and the bulky tools. Indeed, there is reverence about the way instructors sometimes talk about or even hold the tools; the drills and saws become more than just “things”, but channels to make ideas happen.



The way that members and students interact with each other communicates a very specific culture. There is significant compassion and enthusiasm, but also accountability—not helping and contributing is always called out -or more precisely, "called in" as they say at Beam. And as youth become part of the culture, the team moves to trust them in ways that are less common in traditional education; youth will be working, pretty much unsupervised, with large power tools; sawing and welding and helping each other with what they have learned. "As youth and Beam staff collaborate and grow as a learning community, an abiding sense of trust is developed. Youth are trusted to work independently and explore with equipment, digital fabrication, and more", says Stalvig. He states that through these interactions, youth begin to trust the expertise of one another, of the Beam staff, and also of their own process of creation.

They call this 'radical trust.'

As youth and Beam staff collaborate and grow as a learning community, an abiding sense of trust is developed. Youth are trusted to work independently and explore with equipment, digital fabrication, and more... through these interactions, youth begin to trust the expertise of one another, of the Beam staff, and also of their own process of creation.

- Calvin Stalvig, Beam Center

"Making things with other people has particular kinds of outcomes," says Brian Cohen, founder and executive director of Beam. "Those are agency, expressiveness, persistence, compassion, recognition of contribution and recognition of the value of your own work."

These rituals are part of how educators acknowledge that students' efforts and their contributions to the space are valued. Stalvig mentions that when he sees them allow themselves to be vulnerable and then succeed, he will try to make them

Guiding Questions

As your organization considers how to build trust with youth, it is important to ask the following questions:

- Are there activities in your space where educators and students could gain from more cohesion and alignment in terms of clear, shared objectives or values?
- What are the values you want present in your space? What symbols or stories can be shared to communicate reverence and respect toward those shared values?
- What are the rituals and traditions that already exist in your community? How can you thoughtfully invite those rituals and traditions into your space?
- How much trust is placed in the youth in your programs? What are some of the risks of more trust and how can we plan for these risks?
- What could change in your program if you 'radically' trusted your youth? Do you think you or other educators may have been in the way of their learning by distrusting them at times?
- Think about places where culture has become immediately apparent to you. Try to identify some of the aspects that communicated that with clarity. What might the equivalent look like in your programs?

conscious (or meta-cognitive) of their process and what has happened, and support that moment of learning: “I want them to feel loved and cared for in this space, and to develop a sense of offering that to other people.”

The secret is that students are social beings, and social beings want to be part of the tribe. By enacting these practices that mark the Beam tribe as different from school or home, their own special tribe, they can trust the young people because they want to be valued and cared for by the new “us” in the room.

Ritual as Culture at DreamYard - Making Maps of Identity

DreamYard is a community-based organization focused on arts and social justice education, working in high schools and after-school spaces in the Bronx. Their approach centers on creating art that engages with issues of power, race, identity and democracy.

Working with diverse populations of both students and instructors, a challenge they have is to communicate this social justice culture to all. There are clues of their philosophy in every corner, from the naming of their rooms after notable creators of color to the joyful and unfetishized representations of black and brown people that are easy to encounter on walls of their center, through books on bookshelves and artwork dotting the space. Yet it is in their practices where social justice ideas become most clear.

In a two-day professional development session named “De-colonizing the Digital” at DreamYard, a group of educators attend to learn digital making strategies for teaching. Within the first day, members move from being timid and awkward to sharing ideas and working together. A number of practices, indeed, work to open them up and establish shared trust. For one, upon arrival they are asked to make a customized name tag, using arts and crafts supplies. The result - multiple idiosyncratic concoctions that look too large or have circuits or are fluffy and unique - conjures identity and personal expression from the get-go.

The session kicks off with a sort of ‘opening circle’ familiar to many activities at DreamYard. The group gathers around a number of totems, some meant to evoke learning, making, community, and a talking stick is presented - one can only talk at the circle while holding it. The facilitator shares the lore of the stick; it was created by students from several workshops, each adding something to it. Then, holding the stick, participants introduce themselves and ‘their people.’ One instructor states that she is Venezuelan and comes from the “people who make digital things, artists and nomads.” There is a reverence to the act of presenting oneself when done in this way, and it feels like the prompt conjures their identities and heritage as part of the work. Ritual and culture echo multiple ways throughout the day. The facilitators share about the overarching theme of this year at the learning space, which inspires all the

workshops; it is 'Ubuntu', a South African term that means both "I am because you are" and "humanity." Moreover, as part of the session on digital making practices, instead of talking solely about coding and fabrication, Melat Seyoum, the artist guiding the workshop, leads the group to discuss 'making' in the context of digital cartographies, and points to histories of mapping traditions in Africa which are interestingly connected to hairdressing and fashion. They use this frame to again have participants connect work and identity, by making maps that represent where our ancestors came from.

These exercises and reference points communicate a culture and a frame. There are rules which are clear (such as 'no spicy,' the idea of not using derogatory language with each other, and 'step up, step back,' encouraging both active participation as well as listening and receiving), and that are the same that would be used when interacting with youth. This makes it easy to instinctively understand, even after a few hours there, the values, norms and expectations in this community, and see what in our identity connects us to their culture.

What Does it Lead to?

Radical trust practices change the traditional framing of education

The kind of rituals and routines shared above are not a magic bullet that automatically produces trust and collaboration, but they can be used to encourage important educational outcomes. Radical trust practices change the traditional framing of education, where youth are, more often than not, under close control and supervision of adults and where there can be more mutual distrust. This has a number of outcomes:

- **Space and time for a learning experience.** The circle, the totems, the discussion, point to the uniqueness of the moment and of the community, bringing attention to the present. No one participating looks at their phone when these activities take place, since reverence commands one to be focused.
- **A sense of community.** They build a shared identity and underscore the social component of the work being done.
- **Communication of shared values.** Cleaning a space or standing around totems which represent ideas or ideals can communicate quickly to a group the culture of a space and potential directions for work - what is acceptable and appropriate, and what isn't. This understanding enables complex work to happen.
- **A focus on equity.** Most groups tend to underscore what makes members similar. An unintended effect of this is that those who happen to be 'more different' (racially, socially) can feel isolated and less valuable in the team. In contrast, when, for instance, participants are asked to state their people and present themselves, they share some of the things that make them unique. By celebrating difference from the onset, the rituals can indicate that uniqueness is a value to be shared with others.

Tensions and Challenges

Creating rituals is only one piece of the puzzle to create trust, buy-in and shared values. It must be weaved into the larger set of attitudes and culture of a learning space. A ritual that encourages trust becomes hypocritical if it contradicts other attitudes and practices in the educational space, like, for example, excessive oversight. As educators, we may want to change this culture in ways, but should be aware that this is tricky, and requires buy-in and time.

Regarding practices of radical trust, putting youth in the driver's seat can come at a cost, and it can be anathema to the culture of many learning spaces. The practice of radical trust is accompanied by other processes such as interviewing and recruitment in ways that can encourage alignment between the youth and the educational space. This does not mean a process of selection of the 'best' or most orderly, but looking for students who will be a good fit and who can contribute to the team.

Building FUTUREWORLDS: AS220's Youth-Led Movement to Design and Create the Futures We Want to Inhabit

Anjel Newmann & Seth Tourjee-AS220

This case example highlights FUTUREWORLDS, a large-scale, annual community event co-produced by AS220 youth and staff. The event blends elements of hip hop, Afrofuturism, art-making and social justice education to empower young people to re-imagine a more just and equitable world.

I tell my students at AS220 Youth that creation is an act of resistance and the creative process is an artist's mechanism for self-liberation.

> If creation is an act of resistance then collective creation is an act of transformation.

But if creation is an act of resistance then collective creation is an act of transformation. Alone, we may dream new worlds and even create parts of them, but collective creation allows collisions between individual ideas and visions, between people and their art, visions, beliefs and customs.

Photos by Diana Izaguirre, FUTUREWORLDS 2018

These intersections and mergings result in growth, new frameworks and trajectories. After all, when five elements combined forces in a Bronx housing project playground, Hip Hop was born.

FUTUREWORLDS is a youth-led, multimedia learning pedagogy and production of AS220 Youth[1]. It blends elements of hip hop, Afrofuturism, art-making and social justice education to empower young people to re-imagine a more just and equitable world.

The purpose of FUTUREWORLDS is to give young people the resources to co-create highly visible work that transforms the way we think about art, community and justice. We use our own remixed version of Stanford University's Design Thinking model as a process to guide participation through each phase of a year-long curriculum, and hip hop, Afrofuturism/visionary fiction as a framework for content creation. FUTUREWORLDS culminates annually in the production of an interdisciplinary performance and art installation, presented to the public.

FUTUREWORLDS Over Time

In 2013-14, AS220 Youth partnered with the Smithsonian's Center for Folklife and Cultural Heritage to document fashion, style, and adornment in the African American community. This project, better known as Will To Adorn, was inspired by Zora Neale Hurston's anthropology work in the South in the 1930's, and brings together "culture bearers" who take swag to the level of high art. Thanks to the support from the Smithsonian's Center for Folklife and Cultural Heritage, AS220 Youth was able to engage dozens of young people around the Will To Adorn project. Young people talked with members of the Hip Hop community about their own personal style and interviewed Cape Verdean grandparents about secret cultural recipes. Without a doubt, the highlight of 2014 was the Will To Adorn fashion show.

Photo by Allam Mella, FUTUREWORLDS 2018

Our first fashion show went so well that young people demanded that we do another one. Through conversation with Kourtnie "Funmi" Alieru—Afrofuturist media artist, professor, and AS220 Youth alum—both staff and youth in our program began to ask these questions:

[1] AS220 Youth is a program of AS220, a nonprofit arts organization located in Providence, RI. In 1998, AS220 Youth began with a partnership with the Rhode Island Training School, the state's juvenile detention facility; AS220 now represents the longest running partnership between an arts organization and a juvenile detention center in the U.S. Today the program reaches over 600 young people per year. We offer programming at four service sites, and work with youth most impacted by systems of oppression, many of whom come to us through social services or are in the care or custody of the state. Approximately 90% of the young people served are people of color. Outside of our AS220 Youth Studio, our service sites and partnering organizations intentionally focus on young people who have the greatest disconnection rates: those who are incarcerated or transitioning out of incarceration, those at highest risk of school dropout, those in foster care, and those who are pregnant or parenting. Our home site at AS220 is available and free to all young people and the studio is open five days per week.

Why, when celebrating African-diasporic culture, do we only look to the past? What about the right now? What about the future? Are we in it? How are we represented?

These questions began to embed and even shape our studio classes. I laugh every time I think about the first few months that the word 'Afrofuturism' came up. "What the hell is afro blah blah blah" young people would ask. Not even the staff could quite grasp the verbage or abstract theory associated with the genre.

The term 'Afrofuturism' was first articulated in 1993 by Mark Dery in his essay "Black to the Future." He asked, "Can a community whose past has been deliberately rubbed out, and whose energies have subsequently been consumed by the search for legible traces in history, imagine possible futures?" While white, predominately male perspectives dominated science fiction and other genres in the U.S., Dery wrote, "African-American voices have other stories to tell about culture, technology, and things to come."

Afrofuturism can be seen over many decades prior to and after Dery's essay in the works of many artists of color, from the books of Octavia Butler to the sounds of Afrika Bambaataa and Sun Ra, to Beyonce's "Lemonade" and the recent Black Panther film and new iterations of the comic books. Walidah Imarisha, writer, editor and intellectual, subsequently coined the term "visionary fiction" to further describe fiction that seeks to create just futures.

A core principle of AS220 Youth is that we strive to respond to the particular needs of the young people in our community. As a pedagogy, FUTUREWORLDS is intersectional and introduces participants to concepts of Afrofuturism and visionary fiction, while also providing a project and learning structure that allows them to make and present artwork that is actively engaging with issues that affect their lives. I have seen this process to be empowering and transformational for our youth, many of whom are of identities most impacted by systems of oppression: young people of color, LGBTQ, currently or formerly incarcerated, immigrants, those in foster care, and those living in poverty.

Photo by Diana Izaguirre, FUTUREWORLDS 2018

Since that first fashion show in 2015, FUTUREWORLDS has taken place annually, further evolving each year—from fashion show to theatre production to interdisciplinary showcase to featured programming at PVDFest, a large city-wide arts and culture festival. Youth Apprentices and studio members have written, produced, and acted in full hip hop theatre productions, created immersive art installations, designed and modeled innovative apparel, written and drawn comic books, performed and recorded original music, and organized pop-up marketplaces of youth-created artwork. Crucially, their Afrofuturist

work is inspired and formed out of research, conversation, and collaborative thinking about social justice topics affecting our communities; topics include police brutality, systemic violence, education reform, immigration, food justice, addiction, and mass incarceration. Always, we guide youth to look to the future, to imagine solutions and then to create them.

Youth Leadership through Apprenticeship

On the ground, creating FUTUREWORLDS is no easy task. It takes a crew of professional artists, youth from across all of our four teaching sites, as well as time and careful planning to pull off a project of this scale. One of the most important aspects of FUTUREWORLDS is that it is youth-led. While program coordinators and staff introduce foundational learning materials and facilitate productive discussions, young people are the ones to drive the shape and content of each project. Our long-standing Youth Apprentice program focuses on providing the vision and leadership of the FUTUREWORLDS program.

One of the most important aspects of FUTUREWORLDS is that it is youth-led. While program coordinators and staff introduce foundational learning materials and facilitate productive discussions, young people are the ones to drive the shape and content of each project.

Through an application and interview process, 25-30 paid apprentices are hired in the fall of each year by AS220 Youth staff. In August, we release applications, open to current youth members aged 16-21, and initiate the interview process. When considering youth for the Apprentice program, we ask ourselves the following questions "Is the applicant an active participant at AS220 Youth? Do they have or are they creating an artist portfolio? Are they involved with the Department Children Youth and Families (DCYF), formerly incarcerated or beyond risk in some way? Do they embody the values of AS220 Youth?" Youth who are invited in for an interview do not have to answer "yes" to all four of these questions, but the questions do help clarify who wants to be in the program and more importantly, who needs to be in the program. We do however mandate that at least 50% of the available positions go to DCYF involved youth, which includes youth in foster care and those who are formerly incarcerated. In August we also develop timelines, goals, roles for staff and a project strategy screen. The strategy screen is a set of criteria that both the larger production and smaller projects must satisfy. Criteria points incorporate the chosen social theme and elements of Afrofuturist pedagogy.

Apprentices choose one of our five crews—Digital Media, Music, Performance, Apparel, and Visual Art—and, through classes and mentorship, develop their skills within that medium while taking on leadership of their crew's contribution to FUTUREWORLDS. Ultimately their goal is to develop their artistic practice, interpersonal and program leadership skills through workshop facilitation, and portfolio/project development. The Apprentice program builds career skills, fosters peership and collaboration between the students, and provides youth with close mentoring relationships with program staff.

Making FUTUREWORLDS

The creation of FUTUREWORLDS is structured by our own adapted phases of Design Thinking: Explore, Imagine, Prototype, Test and Reflect. The phases are nonlinear and each occurs multiple times throughout the year. In general however, we divide our calendar year by the phases: September - October = Explore; November - December = Imagine; January - March = Prototype; April - June = Test; End of June = Reflect.

On Mondays, all crews meet together. Through icebreakers, they build community by sharing their names, preferred pronouns and their opinion about a question posed by the facilitator. The facilitator normally chooses a prompt that is culturally relevant, exciting, and an on-ramp to the larger conversation or workshop discussion topic for the day.

For the remainder of our time together, each Monday a lesson of the week is introduced, a lesson that all crews will incorporate into their work as the week and overall production progresses. The 2018-19 edition of FUTUREWORLDS focused on addiction. During the fall of 2018, on Mondays, young people reflected on the following questions "What is a drug? What is addiction? Why are people poor?" Each question was followed by a series of activities that led them closer to many potential answers. Instructors and staff were deliberate about not giving youth the answers. The goal was to have them unpack the collective knowledge in the room by talking to one another, reflecting on personal experiences and thinking about what they've learned through family, friends, teachers and the media. Our angle with topics such as addiction is to move youth closer towards thinking systematically versus individual deficits or victim blaming.

Throughout the year, Monday group discussions continued but there was an evident transition from mostly research to content creation. Youth artists spent the majority of their time in small, medium specific groups that were working to build their part of the theatre production. The emcees wrote the scripts, apparel designed the costumes, digital media created music videos and abstract digitally projected backgrounds.

Excerpted page from "Conceperous: A FUTUREWORLDS Story", 2018

Once a week, all crews convened to share progress and clarify the week's goals. During this time, the group also critiqued one another's work and further identified how their crew's artistic contribution fit into the larger production.

As we write this, FUTUREWORLDS nears, and the studio is full of tech rehearsals, last minute changes to scripts and loads of set design activities. While sometimes chaotic, the vibe of the studio feels not only productive, but purposeful and full of drive. Up until the show there's still plenty of room for newcomers to jump in and help. It's regular practice for staff to add in new dancers, visual artists, etc...the message is clear—if you want to help, great! We need the help and we will find a way to fit you in, regardless of how close the show is. This practice embodies our belief that everyone has something meaningful to contribute.

FUTUREWORLDS is presented to the public annually, and in recent years has attracted hundreds of people. When the show is finally up on stage and the curtain closes, the young artists and the staff leave transformed. We are not the same people as when we entered. The feeling of accomplishing a project as big as FUTUREWORLDS massively shifts our expectations of each other and more importantly, ourselves. Our perspective of what is possible widens. Tears, hugs, and thank you's are physical evidence of these changes. After one FUTUREWORLDS production, a young man came up to me with tears in his eyes and said, "I want to thank you for everything, you've given me a family." I believe he said it best. After accomplishing FUTUREWORLDS, we are family, unified—a collective of individuals who now know what the power of community really looks like.

Learning Productions: Beyond Project-Based Learning

Allen Riley, Grace Freedman, Brian Cohen, Calvin Stalvig - Beam Center

Juan Pablo Sarmiento - New York University

"The craft of making physical things provides insight into the techniques of experience that can shape our dealings with others." - Richard Sennett, "The Craftsman"

"Change means growth, and growth can be painful. But we sharpen self-definition by exposing the self in work and struggle together with those whom we define as different from ourselves, although sharing the same goals." - Audre Lorde, "Age, Race, Class and Sex"

Beam Center's mission is to crystallize self-directed growth in youth through ambitious, collaborative project-making. We use old and new tools, technologies, and craft to honor the individual voice, celebrate the joy of producing something larger than ourselves, and inspire lasting wonder. Our programs support youth to take bold steps towards personally meaningful futures and foster conditions for educational equity in New York City.

In 2005, we began commissioning artists and big thinkers to design ambitious, large-scale works to be built by young people from eight to eighteen years old in the woods of New Hampshire at Beam Camp. Our premise, we thought, was simple: empower young people to make their own ideas happen by providing the experience of walking around in the brain of a designer of big projects. As captured in Richard Sennett's quote above, our

initial aim was to help young people develop capacities of resilience, resourcefulness and creative problem-solving through the challenge of physical collaboration and the application of fundamental fabrication technologies. Using screw guns, concrete, welding torches, wood, circuitry, and sewing machines, our inclusive community of youth and creative and technical experts outfits the New Hampshire forest with the infrastructure of dreams: a 30-foot Kaleidoscope, an asteroid-struck galactic Salvage Station, a gigantic pixelated teapot and spare tire, jurassic-sized land, air and water monsters, an ancient time portal and 17 more spectacular projects.

From the beginning we saw the powerful impacts that such a multi-generational, collaborative production environment could have for all involved. As reflected in Audre Lorde's quote above, we found that the young people absorbed more from working alongside adult experts than just creative and technical skills; they were liberated to consider identities, relationships and future possibilities beyond those available to them at school, home or neighborhood. The adult experts, asked to share their process and craft as guides and co-workers rather than as teachers, began to view community building as part of their creative practice.

The young people absorbed more from working alongside adult experts than just creative and technical skills; they were liberated to consider identities, relationships and future possibilities beyond those available to them at school, home or neighborhood.

In our remote and provisional forest workshop, we evaluated the results of our work based on the quality and completion of our projects and the campers' ability to collaborate, use tools, and live successfully in community with peers and non-family adults.

As we began collaborating with New York City public school students, teachers and principals in 2012, we found that our evolving practice intersected with a growing demand in education and New York City more broadly to foster passion, and project-driven learning opportunities, especially in digital media, STEM, and both culturally responsive and work-based learning.

Beam Center now collaborates with over 5,000 young people per year in New York City. The vast majority (over 90%) are low-income, Black, Latinx or newly immigrated, and we serve equal numbers of young men and women, ages 7 to 20 years old.

Commonly-used terms like "project-based learning," "maker education," and "digital learning," however, tend to emphasize the importance of the tools and materials used in school-based projects but overlook the social and environmental dimensions of production in which students apply their knowledge and skill to create something and share it with others. Consequently, these terms do not adequately address the influence and impact that innovative organizations are having in their communities and through municipal partnerships. This working paper suggests a new framework—Learning Productions—as a way of better describing how this work fuels and supports young people's personal growth while creating more accessible pathways for learning in and out of the classroom.

Why Learning Productions?

Why create a new term like Learning Productions? Many organizations use overlapping technical and/or creative disciplines to support full spectrum youth development (education and career pathways, social-emotional well-being). We imagine that they, like us, seek to more fully describe and clarify how their work aligns with the priorities of school-based educators, social service agencies, and both government and private funders, and that being thought of as a provider of "arts education," "workforce development," 'social-emotional learning," "digital literacy," "STEM/STEAM," does not accurately capture the learning, growth and opportunity youth experience in their programs.

Rather than an exercise in terminology, we find that the term Learning Productions succinctly illuminates our own core ideas. We hope this attempt to better define "what we do" invites others to ask "what does that mean?" and perhaps provide a new lens through which to see/name their own work. This Learning Productions framework is a working idea; we invite others to help us elaborate and refine the concepts further.

What is a Learning Production?

Coined in conversation with Teachers College professor and researcher Thomas Hatch, the concept of "Learning Production" captures Beam Center's philosophy and direct work with youth and educators. We define Learning Production as an active process of learning, building, and sharing that promotes agency and growth. Learning Productions are designed to embody the knowledge and beauty of real-life creative projects as they occur in professional and artistic contexts ("in the wild") and yield tangible, functional products.

A "Learning Production" is different from other forms of "project-based learning." Learning Productions have a broader scope in terms of learning and personal growth goals. For example, project-based learning, as it is traditionally described, may not be geared to produce any social and emotional change or growth, whereas a Learning Production tries to do so explicitly, and identifies a set of roles and practices to help support these outcomes.

At Beam Center, Learning Productions take a wide range of expressions dependent on their context (school, camp, out-of-school apprenticeship), participants' prior experience working with Beam Center, age of youth, the scale of the final product, and other outcome/purpose desired by collaborators (ie., specific subject area knowledge, community showcase, etc.). The Learning Production is intended to be foundry for growth and learning. The final product or project, though a critical component, is but one condition necessary for the growth and learning to take place.

Conditions for a Learning Production include:

- Access to Production Identity - working with or doing the work of a creative/ technical expert; often combinations of multiple practices and methods
- Access to Production Environment - working in a space purpose-built or adapted for discipline-specific work
- Access to Tools and Materials - working with real tools (digital and manual) and raw materials
- Self-Directed Growth and Agency - overcoming challenges and obstacles through design and process decisions
- Collaboration and Exchange of Knowledge - making progress through shared effort, learning, and communication that recognizes individual interests and strengths
- Connections to Future Learning - identifying links between tools, materials, knowledge, skills and relevant real-world domains and possible future pursuits
- Economic and Educational Equity - validate contribution and access to Producer identity based on active participation
- Sharing of Final Product/Project

Characteristics of a Learning Production may include: access to raw materials, real tools, collaboration, and exhibition.

For Beam Center the final products of Learning Productions can range from fairly simple projects like a boombox constructed with wood and electronics over a few weeks to large-scale constructions like the Digital Poetry Project which employed a laser-cutter, Arduino coding and advanced woodworking and was constructed over several months.

See Appendix for more detailed descriptions of Learning Productions by varying levels of student agency, knowledge and collaboration

Learning productions, ideally, supply the tools to learn and a project that youth care about making, but the benefits of creating, collaborating and achieving success in a group expand beyond the physical product.

Learning Production Project Examples

Learning Production Examples and Projects	**Description**	**Age/Location of Students in Project Example**	**Materials Disciplines Techniques**	**Multimedia**
Introductory Learning Production Boombox	Simple, repeatable project to teach "fundamental skills" Designed by instructional staff. Some limited youth customization.	Middle school, in-class 2 four-hour sessions	-Carpentry -Circuitry -Laser Cutter	
Mid-Level Learning Production Digital Poetry	Project involves youth input and collaborative elements and is at least partially built by youth. Largely designed by instructional staff.	High school, in-class 12 90-minute sessions	-Carpentry -Circuitry -Twitter API -Laser Cutter -Raspberry Pi -2D Vector Graphics	Video
Mid-Level Learning Production Salvage Station	Same as above, though youth more active in building and creating in an immersive environment.	Ages 10-17, Sleepaway Camp 32 hours in the course of 3-week session	-Carpentry -Metalwork -Basic Construction -Faux Finish Painting -Circuitry -Video -Arduino	Online document Video documentary
Hybrid of Mid-Level and Advanced Level Watershed Cart	Project designed by instructional staff but incorporates significant elements of youth-led design and creation.	High School, out-of-school	-Metalwork -Lesson Design -Carpentry -Teaching -Classroom Management	Link to slideshow

Social and Emotional Growth as Outcomes

Within the Learning Production model, learning is defined as the active, physical practice of "figuring out" the knowledge, connections, vocabulary, and tactile skills required to create something from the perspective of a real-world domain. The learning goals of a Learning Production may include mastery of domain-specific and/or academic content, but its primary goals are (1) the mastery of learning as a universal lifelong practice that may be applied to any future context and (2) a sense of agency and legitimacy in pursuing future learning.

As one of our instructors put it,

> *"I didn't go into making a movie intentionally wanting to learn how to make a movie. I wanted to make a movie and learned as a means of achieving a goal."*

In short, one learns by doing, because one is motivated to "do" something of personal interest, such as making a movie. Learning productions, ideally, supply the tools to learn and a project that youth care about making, but the benefits of creating, collaborating and achieving success in a group expand beyond the physical product.

Agency allows youth to see themselves as creators, as agents who can produce amazing and complex things and make them come to life, make them become a reality.

Learning Productions as a Model

Learning Productions promote agency and growth by setting up the opportunity for youth to make meaningful decisions together and to overcome spontaneous challenges in pursuit of a common goal. It is a way of working designed to catalyze the creativity of participating youth. This openness provides the opportunity for learners to identify as creators, to internalize new criteria for self-evaluation, to master new skills, and share their work with others.

Agency, for one, is an essential component of the model. In traditional educational contexts, much of the agency is in the hands of the educator, with youth participating as being "along for the ride". Learning Productions change this model to one of shared inquiry; both the youth and the educator are learners, figuring out to a degree how to develop the thing that is going to be created. We have witnessed at Beam that this model can have effects not only in the scope and depth of the physical artifacts that come out from the process (some of them beautiful, interesting and creative artifacts on their own) but in the motivation and engagement that they invite from youth and educators. We enjoy creating new, awesome things and being on the edge of our capacities, embarking on projects where we have no certainty of a perfect outcome. In this context, we are deeply motivated to learn the tools, physical and cognitive, that are necessary to achieve that goal; knowledge is not only not inert, it is not only situated, it is just a means to an end, just another tool. When these outcomes are successful, working artifacts, the pride and shared sense of accomplishment of a community can propel us to create more new things, and learn more.

Agency allows youth to see themselves as creators, as agents who can produce amazing and complex things and make them come to life, make them become a reality. The youth also experience the processes of complex project making, which is often illustrated in educational contexts as a predictable process, as a process of careful planning and execution. To the contrary, LPs introduce everyone in the team to the messiness of creating, to the testing, the insights, the false starts and the ideas that shift from one shape to another before becoming their final incarnation. This, we believe, prepares youth for more authentic forms of project-making and designing in their lives, to accept among other things that frustration and iteration and change are part of the process of creation, and not a "problem" that we should try to avoid.

Finally, in the context of these large challenges, youth have played with the world, worked side by side with adults, feeding and learning from their skills and developing skills of their own, practiced deep social work skills and showcased the products of their work socially to the world.

Though there may be multiple ways of making these types of productions come into being, at Beam we have come upon some elements that, after years of iteration, seem to be key components to make these projects successful: roles, environment, rules, products, celebration, and reflection.

Elements of the Learning Productions Model

- Roles: Producer, Learner, Space Holder, Teacher
- Physical Environment
- Rules of Engagement: Mutual Respect; Open Communication; and Reciprocal Learning
- Products
- Celebration
- Reflection

Roles

Principal Roles within a Learning Production are Producer and Learner. All people involved in a Learning Production display the characteristics of each role at different times regardless of age, skill level, and institutional role (e.g. student/teacher).

Producer *(Creator, Maker, Artist, Agent, Mentor, Leader, Expert, Instructor, Project Master, Domain Specialist, Assistant, Guide, etc.)*
Producers hold knowledge, skills, and history to share with others. Producers can be professionals who share their existing practice with students, non-professional lead-learners who express enthusiasm for creating the project, or both.
Learner *(Participant, Student, Camper, Assistant)*
Learners solve problems, have ideas, and acquire knowledge and skills for the purpose of growth. Learners in a learning production can be youth or adults who take on a role and an identity within the creation of a project.

Since Learning Productions may occur in a variety of formal and informal educational contexts, supporting roles are often necessary. These people are usually employed to care for or teach youth and sometimes, but not always, come with expertise or interest in the project. They are important gatekeepers and may work with the Producer to adapt to the learning environments.

Space Holder *(Counselor, Principal, Teacher, etc.)*
Space Holders are responsible for guaranteeing the stability of the physical and social environment surrounding the Learning Production. Space Holders may or may not be involved as Producers, but always enable the Learning Production by granting permission and providing access. Space Holders also guarantee access to bathrooms, water, and any other necessary facilities.
Teacher
In academic Learning Production contexts, Teachers serve as a mediator between Learning Production goals (e.g. experiencing growth through the production of a product) and academic learning goals (e.g. curriculum). Teachers ideally act as Producers in a Learning Production, but may also serve as external role as an evaluator and adviser.

Case Example: Cat Shelters (Red Hook, Brooklyn, Spring 2017)

Project

Beam instructor Lizzie worked with teenagers Lucy and Anna from South Brooklyn Community High school, a transfer school. As part of a service learning project, all the students were asked to do a project that benefited their neighborhood. Three students wanted to create shelters for the many stray cats in their Red Hook neighborhood. They designed a cat shelter that they wanted to fabricate, and Lizzie worked intensively with them because they didn't know how to build it. Lizzie consulted with them, helped them improve their plan and then taught them how to use basic woodworking tools. They created a 3-story Cat Condo suitable for outdoors from wood and carpet with hand-held tools. In addition to construction, the students had to find place in the community to place the Cat Shelters. This ended up being more difficult that they had anticipated, since not everyone wants to attract stray cats. They were persistent, putting in extra time on the weekends to talk with neighborhood businesses about the project, and eventually found a home for the shelter.

Students reported significant personal growth from this project. Anna now sees herself as a future architect and was inspired to use her technical drawings in a college application portfolio. Lucy became a Beam Center Apprentice (100+ hours of intensive training on production and teaching skills), and later worked at "Arts-in-Parts" in the Rockaways, founded by Beam instructor Heather Kramer.

Anna: "I've always wanted to build stuff, but didn't know where to start. Beam gave me the tools to do it."

Lizzie: "The teacher said "These are the kids that don't show up for class," but they showed up every day for the project and worked on it well-beyond expectations, putting in extra time to finish and find a neighborhood location to place it."

Elements of Successful Learning Production

Youth had a vision and were motivated to learn both technical and personal skills to execute it. They showed persistence even when some elements of the project were difficult. The process helped at least 2 students see themselves and their potential in a new light, taking steps to new directions.

Physical Environment

A learning production ideally takes place in an environment that is unfamiliar to the participants. This can be a physically new location or a previously familiar environment that has been transformed by the presence of new tools, materials, organization, and Producers. The Learning Production Environment creates space and time for participants to form new identities as creators of the project. Beam Center's Learning Productions have taken place in classrooms (during and after school hours), in

dedicated labs or “making” spaces, in the woods, at our Beam Center facility and in community settings (playgrounds, gyms, libraries).

Rules of Engagement

Through the process of co-producing the project, Producers and Learners exchange knowledge, wisdom, and skill and collaborate to overcome obstacles, solve problems, and design and build products. This process is made possible through reciprocal learning, radical trust and mutual respect, and open and equitable communication among learners.

Reciprocal Producing and Learning

At the outset of a Learning Production, Producers introduce themselves as representatives of a domain or practice and offer this identity to Learners in exchange for their help in creating a project. This identity can be tied to a specific domain (e.g. filmmaker, sculptor, animator) or can be a unique practice that combines multiple methods (e.g. vacuum cleaner hacker and instrument designer). It is critical to the success of the Learning Production that the project is genuinely interesting and meaningful to the Producers.

Radical Trust and Mutual Respect

Radical Trust is the practice of leaving space for Producers and Learners to take productive risks, make decisions, and experience growth within a Learning Production. Example from in-classroom LP: “Giving students areas of responsibility and giving them a cut list, asking them to work together to measure and check off what’s done on clipboard, and asking them to train others when necessary. Creating checklists or cutlists so students can self manage and work as teams, learn from each others mistakes.” Mutual Respect is necessary for building trust that allows for these risks and personal growth. Example from teen project leader training: “A lot of time was spent talking with students and diving deeper into their needs as well as their strengths making them more comfortable with me and each other, helping create an environment where asking for help wasn’t only accepted but encouraged.”

Equitable Communication

Equitable Communication is the practice of being intentional about using language and visual cues that are clear and accessible to mixed age/gender groups

and economic, cultural and racial backgrounds. The objective of Equitable Communication is to eliminate barriers to participation for learners who may knowingly or unknowingly exclude themselves on the basis of unfamiliarity and cultural stereotypes about who has legitimate access to tools and knowledge. This concept partly exists to differentiate what Beam is doing from conventional "maker ed" approaches, which may presume that Learners know how to signal interest in a particular discipline. One outcome of a Learning Production may be the ability to signal interest.

The objective of Equitable Communication is to eliminate barriers to participation for learners who may knowingly or unknowingly exclude themselves on the basis of unfamiliarity and cultural stereotypes about who has legitimate access to tools and knowledge.

We cannot assume everyone has the same expectations of process, outcomes, operating procedure, safety, etc. Facilitators must establish a tone, space and time for participants to ask questions when they realize they need help. Additionally, facilitators must reflect on their language when they see participants doing things that are contrary to expected behavior; rather than respond in a tone that implies the assumed expectations are not being met, asks questions to gauge comprehension and clarifies expectations for all.

As an example two commonly misused tools for which we have learned to clearly demonstrate effective use are the push broom and rotary cutter.

Calvin, Youth Project Facilitator: "I would say, 'I need someone to sweep,' only to find youth of all ages attempting to sweep by pulling the push broom. I now make a point of referring to the 'push broom,' and demonstrating its use before I pass off. When cutting fabric, I assumed that youth could understand the simple mechanics of using a rotary cutter. 'Cut the fabric with a rotary cutter' is insufficient for effective and safe function. Often times students do not press firmly enough with enough control and want to pull the cutter back along the fabric, often getting rid of the straight edge ruler necessary for clean cutting. 'Use the ruler as a guide, make sure your arm is straight, and push away from you like you're cutting a frozen pizza,' is language that I've developed to teach these skills after repeatedly realizing the students did not understand how to meet my assumed expectations."

Products

The products created in a Learning Production embody the knowledge and beauty of a real-world domain or practice and provide a tangible link between the Learner and the Producer identity. These products may take the form of physical objects, but may also include or entirely consist of time-based media or performance. Table 1 and the case examples in this paper provide more details of the products created through the learning production process.

Case Example: Watershed Cart (Brooklyn, Summer 2017)

Project

The Watershed Cart, created with Beam teen Apprentices, was a large portable cart designed to house fun and interactive games to teach younger children about NYC clean water issues and ecology. The cart was designed to be rolled into parks or playgrounds to reach children in the community. The concept of the cart was presented by Beam instructors, and teens were instantly very excited and energized about creating water games for children. They were very motivated to highlight the aspect of water play with children, which lent an opportunity to reinforce the importance of clean water that we often take for granted. The teens had to carry a huge water reservoir to Coffey Park in Red Hook, which was very heavy and created a visceral appreciation of the water itself. The games were a big hit with children in the community, lending a source of pride and accomplishment among Beam teens.
Successes
Youth had agency to build on their own interests and excitement to design games of their choice, teens, who were predominantly Black or Latino and low-income, made real and meaningful connections to neighborhood children from the low-income Red Hook area.

Constraints

The actual cart was not designed by youth and the fabrication of the project was led by staff. Even though we have a relatively long apprenticeship program (15 weeks), it is often not enough time for youth to gain skills and confidence they need to fully execute the projects. Though it may feel like “design failure” when we are unable to complete an ambitious, collaborative project, we have found it a valuable prompt to reconsider how we accomplish our learning objectives for particular LP implementation; thinking of them more as steps in a longer trajectory for youth rather than having each be a self-contained scope. The Watershed example led us to re-focus the students’ work on independent projects in subsequent Apprentice implementations.

Celebrating and Sharing the Products

A successful product is functional and usable by the production team. In an ideal Learning Production, the product is brought to life in a celebration in which it is shared with a community beyond the production team. In this moment of exchange, the Learner has the opportunity to represent the Producer identity to an audience and celebrate the excellence they achieved in the Learning Production. This may take the form of an exhibition or performance, but may also take the form of inviting new Learners into the Learning Production.

Case Example: Pedal/Petal Flowers for Social Justice (Bronx, Spring 2018)

Project

Pedal/Petal is an interactive sculpture in which huge flower petals with social justice messages open and close with a bike-powered mechanism. Beam Center has a long-standing relationship with Fannie Lou Hamer Freedom High School's (FLHFHS) students and faculty and have often worked with educators to design projects for students. This year was a leap as the FLHFHS student council approached Beam Center with their own project idea: a dynamic sculpture for their annual Social Justice Peace Fair. Students worked with Beam Staff to design and build the enormous sculpture which used a stationary bike to activate flying petals. After the school celebration, the work was also showcased at Emoti-con, a city-wide youth technology fair, winning the Audience Favorite award.

Successes

Youth designed and led the idea generation of the project and they were supported by their school culture and Beam's direct mentoring. Built outside of a traditional classroom setting, the project offered young people a chance to create an ambitious project which was celebrated by the school community and also with a broader audience at the youth-led technology fair held at the New York Public Library, an important and impressive venue.

Constraints

Due to space and equipment constraints, most of the fabrication was done at Beam Center with Beam staff. In addition, though students' envisioned the project, most did not have the technical skills to execute it on their own. "Pedal/Petal" was a collaboration between Beam Project Designer Rebecca Zakheim and a largely self-organized and ever-changing student government at a school an hour-and-a-half away from Beam Center, and done on the margins of the school schedule. To have limited the students to envisioning a project that was readily achievable while "checking all the boxes" for student learning outcomes (i.e., each student has role in design, learns to use x number of tools, participates in all steps of fabrication, etc.), would have severely reduced the project's scope. In large part, our evolving formulation of the Learning Productions framework is a way to understand how the tension of working within these kinds of constraints and towards a spectacular and unique finished product creates positive learning effects for all collaborators (youth in particular). Rebecca's zeal for realizing the students' vision, with and without their involvement, becomes part of the "producer identity" to which she is offering the students access while creating authentic collaborative dynamics and challenge.

Reflection and Feedback

The practice of generating written or verbal reflection and feedback supports the development of the Producer identity and may help Learners experience an increase in legitimacy and agency toward pursuing future learning. A written narrative describing the challenges a Learner overcame during a Learning Production may also include information about crystallizing experiences that had exceptional and lasting impact for that individual, and this might bring next steps and goals into focus.

Concluding Thoughts

We offer the idea of Learning Productions as a model that may be useful in evaluating the structure and outcomes of any hands-on project intended for youth development. It represents Beam Center's effort to account for the roles, perspectives, goals, environments, tools, materials, and skills that support the outcomes we seek by building ambitious projects with youth.

Learning productions help youth envision, create and build their own "projects," be it a physical product, a college paper, an artwork, a digital program or a positive collaboration with others. If a learning production is successful, youth learn 21st Century skills not as static assets but as tools and mindsets that can help them build the project at hand and also truly serve them in the future.

Appendix: Learning Production Rubric

To further explore these ideas, we developed a rubric of elements we would like to see in every Learning Production, detailed in chart below. Though these ideals do not always match actual project execution, it is important to Beam Center to keep them in mind as we design, iterate and improve on our work.

Critical Attributes of Learning Productions

- Youth voice and contribution is value and encouraged
- Youth have ability to change the outcome of a project
- Emphasis on interpersonal relationships among peers and staff to build trust and communication
- True group learning and collaboration, we learn and build with each other
- Different work space and new tools can radically change power dynamics and learning results

Beam Center Principles	Level 1 Learning Productions (e.g Afterschool, Classroom)	Mid-Level Learning Productions ft. Growth & Persistent Environment	Advanced Level Learning Productions Expressing Growth - Identity and Community (e.g. festival, school, home, public space, the future)
Theoretical Examples:	Ex: Reproducing a clock following instructions.	Ex: Becoming a clockmaker to create your own version of a clock	Ex. Inventing and manifesting a new concept of time or timekeeping.
Access to Production Identity	Learners are trusted by a creative professional to acquire the skills and knowledge to create real products within a relevant domain	Learners express their identity as co-producers of the project in celebration, performance, writing, or spoken word	Learners offer trust to others to acquire the skills and knowledge to create real products within a relevant domain
Access to Production Environment	Access to tools, materials, furniture required to create genuine products of a relevant domain	Space and time away from existing roles and identities to allow Learners to form new identities as producers of the project	Learners envision and reproduce a production environment in pursuit of self-determined or collaborative goals
Access to Tools and Materials	Learners learn to safely use the tools and materials associated with a real-world practice or domain that is derivative	Learners apply their knowledge of tools and materials in a prototype of their own design that is iterative	Learners demonstrate knowledge of tools and materials by sharing usable products with a community beyond the production team
Self-Directed Growth/Agency	Learners make guided design choices that affect the outcome of a project	Learners identify and pursue additional knowledge and support implied by the outcomes of their choices	Learners identify and pursue entry points into personally meaningful education and careers
Collaboration / Exchange of Knowledge	Learners create products that fit the criteria of a relevant domain	Learners collaborate to create products that synthesize their designs with the designs of others	Learners share their learning by guiding others to create products that fit the criteria of a relevant domain
Connections to Future Learning	Learners identify links between tools, materials, knowledge, skills and relevant real-world domains	Learners generate a personal narrative and visual documentation identifying their contributions to the learning production	Learners identify specific next steps that link the Producer identity to future learning
Economic and Educational Equity	Access to legitimacy and Producer identity on the basis of active participation in the Learning Production regardless of economic and academic background	Learners exercise legitimacy by representing Producer identity in the celebration and sharing of products	Learners identify how their contributions to a Learning Production and its products can be shared with institutions to provide access to future economic and educational opportunities

Final Product/Project Examples (Beam Center collaborates to create close to 100 individualized Learning Productions every year.)	Boombox - incorporates basic wood-working, laser cutting, electronics, systems to create a personal sound system that can be used alone or networked to make a larger system. Photos	Book of Unknown Students I (2017) Students (10th graders) crafted personal narrative video stories displayed on small video monitors embedded in old paper books. Participants could wear headphones to watch and listen to the video narrative. There was a "publishing party" for the community held out of school. Form of project was designed by Beam Instructor and teacher. Photos	Book of the Unknown Students II (2018) At the same school, the next generation of 10th grade students created a theatrical adaptation of five of the stories written for the previous year's project. The final product was a performance on the stage of the school's auditorium. Teacher suggested the form of a theater piece, but students self-managed all aspect of the production's creation in con-sultation with Beam Instructor (Jeff) and teacher. Students adapted the stories, created additional content, casted, directed and acted. Photos

Guiding Perspective:

Skills

Consider the range of valued competencies around digital media—including both technical skills as well as social and emotional learning and 21st century skills such as communication, collaboration and creativity—all critical to accessing future opportunity.

When educators mention skills in the context of technology, they are often referring to "hard skills" or knowledge relating to technical practices such as aptitude using a specific tool, proficiency programing in specific coding languages or environments, or understanding the formal practices that are common in a technical field. These type of skills need to be a core part of digital learning programs, and are present in all of the experiences we share here. However, successfully teaching technical skills is only part of what is being achieved by the programs we highlight. A wide range of increasingly important social and emotional skills are being developed as well. Social and emotional learning (SEL) skills (also called 21st century skills) include: critical thinking, problem solving, collaboration and adaptability, among others.

Effective informal learning organizations both have to decide what mix of skills are most essential for the youth they serve, and from there, design effective programs that promote their development. The starting point for these deliberations are questions that consider what kinds of futures an organization is looking to support: Are they looking to promote youth pathways into specific professions? To foster digitally competent citizens? To build collective agency in a neighborhood? Understanding the projected futures they hope to support should help organizations to focus considerations around the kinds of hard and soft skills they intend to develop through their programming.

In thinking about how to create programs where youth can develop comprehensive skill sets, the organizations highlighted in this toolkit demonstrate how to avoid rote approaches to teaching skills. Shared are examples that illuminate how learning technical and SEL skills can be a deep, rich, complex and fulfilling experience when youth learn new or deepen existing technical skills within a context that matters to them. They are able to fully grasp and then extend a multitude of learned practices; they plan, progress, assess, create, express, connect and collaborate. In short, they become comfortable integrating a range of skills into everyday life. This type of learning also reflects the multi-layered facility that future employers will expect and civic participation needs. Experiencing how to integrate the technical, social, cultural, and personal practices that will be important to thrive is a key lesson for young people.

Understanding which components of youth futures an organization hopes to support will help them decide what mix of skills are most essential to teach the youth they serve and help to determine "real-world" applications that will allow youth to practice those skills. Our partner organizations consistently achieve successful outcomes for their youth through mindful practices in skill integration. Here are a few examples of how they've created learning environments that require students to exercise multiple skills simultaneously:

- **Leverage existing digital practices as a way to further develop technical skill.**
  Our partners engage young people directly in activities such as programming, game design, film production and other technology-based learning experiences that give them direct application in the fields they care about. A substantial amount of technical skill and content knowledge are learned through these experiences.

Read our resource on Tapping Youth Interest to Cooperatively Design Out-of-School Digital Learning Programs.

- **Link social and emotional skill development in areas like empathy and communication to digital learning projects.**
  Rich, layered and complex projects require input from multiple people, taking the perspective of others, shared sensemaking and co-working, among other 21st century skills as well as digital fluencies. Actively understanding this can help to elevate these learning moments in digital learning programs.

Read our resource on Linking Social and Emotional Learning to Digital Learning through Collaboration and Empathy.

- **Create opportunities to participate in real-world contexts to situate skill development.**
  Some organizations design programs such as client-based work that give youth practice in skills such as technical production, project management, and client interactions that provide direct access to work-based or civic-oriented opportunities that situated skill development in meaningful projects and at the same time relate to future pathways.

Read our resource on Client-Based Work as Pedagogy in Informal Digital Learning.

Client-Based Work as Pedagogy in Informal Digital Learning

Rafi Santo - New York University

How can digital learning connect youth to professional practice? In client-based work models—producing videos, apps, websites, 3D fabrications, and more for external clients—youth produce hands-on projects with real world relevance, developing both hard and soft skills in the process.

What's the Issue?

Many organizations that incorporate digital media and technology want to connect youth to professional practice through hands-on projects that have real world relevance, and better prepare youth for a changing work landscape that requires both hard and soft skills in order to thrive. One pedagogical model that accomplishes this is **client-based work** in digital and creative disciplines. Client-based pedagogies involve young people working on projects or services that serve some sort of need for an external client—producing videos, apps, websites, 3D fabrications, and more. In the process, young people are apprenticed into professional practices and learn important skills that aren't only technical, but also focus on things like project management, client-relations and collaboration.

Client-based pedagogies involve young people working on projects or services that serve some sort of need for an external client—producing videos, apps, websites, 3D fabrications, and more.

This resource outlines design considerations, learning goals and ways of structuring these client-based work pedagogies within the context of a youth development and community-based organizations. It explores both what kinds of client-based work are possible in creative media, technology and making, how to structure youth and educator roles in these approaches, where money and paying youth comes in, "high-stakes" vs "low-stakes" client-based approaches, structuring feedback to youth participants on their work with clients, and more.

What Does it Look Like?

Client-based work can be structured in a number of ways, each with different benefits and drawbacks. We focus on two approaches: one where young people work in a functioning, revenue-generating social enterprise where clients pay for goods or services (working with paying clients), and a second where youth work with a professional or audience that creates a context for a youth-driven project, without the pressure of a paying client (working with an audience).

Working with Paying Clients

This model involves the development of dedicated social enterprises as initiatives within larger organizations, with young people apprenticing into functioning business efforts that serve paying clients or customers that receive some sort of product or service. For example, the West Michigan Center for Arts and Technology (WMCAT) houses the Ambrose Print Shop, a for-hire screenprinting shop that prints t-shirts and posters for clients. The print shop is run by young adults that come from WMCAT's youth programs who do everything from screen printing to customer service and invoicing clients. Free Spirit Media's (FSM) social enterprise, Free Spirit PRO, involves young adults collaborating with FSM staff to produce documentary videos and PSAs for clients including local foundations and nonprofits. FSM staff usually develop the relationships with clients and work to scope each project, and then assemble teams of young adults that are members of Free Spirit PRO to shoot footage and, sometimes, engage in editing and post-production. The Digital Harbor Foundation's (DHF) 3D Print Shop offers digital fabrication services for local clients and is run by youth employees and former youth program participants that both fulfill printing orders and maintain complex 3D printing equipment.

These approaches feature paying clients, and generate revenue that are used to both pay young people as well as fund associated staff positions. In some cases, revenue can also support broader programs within these organizations. In each

Guiding Questions

Do client-based work pedagogies align with your core goals around youth development and learning?

- If so, what kinds of disciplinary areas (film, web design, fashion, etc.) within your programming represent opportunities, both in terms of the skills and interests of your students, as well as your staff?
- What kind of client-based work model makes sense in your organizational context? A more social enterprise approach that develops revenue, or a prototyping approach where clients aren't paying, but rather serving as a context for students to develop lower-stakes projects?
- What kinds of project roles do you see staff and educators playing, and which will be taken on by young people? How do these decisions affect what kinds of learning opportunities the initiative might have for your students?

case there are a range of roles divided among organizational staff and youth participants. Sometimes, young adults, often graduates of other programs in an organization, are themselves full-time staff that help run the initiative. This is true in the case of Darius, who was the manager of DHF's 3D Print Shop and a former program participant in the organization's Maker Foundations high school courses. At the same time, the 3D Print Shop also employs part-time youth apprentices that are in high school.

Operating in a way that requires outputs for paying clients, these models sometimes need to carefully balance the needs of clients to have high-quality products with the focus on youth development and mentorship for the youth that are involved.

Operating in a way that requires outputs for paying clients, these models sometimes need to carefully balance the needs of clients to have high-quality products with the focus on youth development and mentorship for the youth that are involved. This may mean at certain points higher skilled staff step up in cases where youth are still developing certain skills. This isn't a failure, it mirrors what often happens in real-world work environments, where more expert professionals work collaboratively with those that are still learning.

Working with an Audience

Another approach still involves youth working with clients, but is more low stakes, and doesn't involve a social enterprise or business venture associated with client-based projects. Models like these are usually embedded in more traditional youth technology programs.

For example, at The Knowledge House, youth participants in advanced web design courses work in teams on capstone assignments where they develop web projects for local businesses and nonprofits. Sometimes multiple teams of 5-6 young adults may work on the same problem for the same client, with each at the end of the semester presenting their prototypes and getting feedback from the client. It's not expected that the business partner will adopt the prototypes, but they do need to provide the course participants with legitimate problems to tackle, and real feedback on projects, ideally at multiple points along the way.

Similarly, YOUmedia's ProjectUS program partners with a local brand, such as a boutique fashion studio, and then has student teams work over a semester or summer to produce a deliverable for that client. Each student team is made up of 'suites' that work on different aspects of the final deliverable - the 'style' suite works on developing a new apparel look that fits the client's brand, the 'media' suite creates photo and video documentation of the new look, and the 'sound' suite creates music for a soundtrack that will accompany a final presentation at the end of the program. There might be anywhere from three to five different teams that present their project to the client, and in some cases, a winning team will have their design go to production by the client partner. Most importantly, the client is interacting with the student teams along the way, giving them feedback on initial projects, and then acting as judges for the final deliverable presentations. Kiko, one of the teaching artists that works on ProjectUS, shared:

The point is to work in collaboration as it would be in the real world. A fashion student is going to need a photographer to shoot their line, and the photographer learns to collaborate with them and with the audio production team. Collaboration is a big piece in ProjectUS, bringing your expertise into a project with other creatives. Then you take all of your skills, and you create for an outside party, which is a professional partner.

In these approaches, program staff are creating supports for student teams and their projects, facilitating skill-building workshops and classes, creating time for teams to work on projects, and giving feedback along the way. Here, staff are not actively collaborating and co-producing the deliverables that will be presented to clients. Since the final products are not being paid for and most often not actively used by the clients, this creates a different dynamic where projects are not necessarily meant to be professional-grade, and more emphasis is put on having the youth lead on the creative processes involved.

What Does it Lead to?

For youth, there are a number of potential outcomes and benefits associated with participating in client-based pedagogies:

- **Client-relations skills.** In technical and creative fields, communication skills include understanding client needs, specifications and contexts. Young people working to create products for clients or audiences can gain experience in articulating client priorities (especially when clients themselves cannot fully articulate them), negotiate possible solutions, and balancing the resources and technical constraints that define a client-based project.
- **Collaboration and time-management skills.** In most of these models, youth must work collaboratively within teams in order to translate client needs into designs, products, services and then work together to produce those within the context of a deliverable timeline.
- **Technical and creative skills.** In a given client-based project, there will always be core disciplinary skills related to the kind of output being created, be they film or photography, coding or graphic design, audio production or product development. Importantly, in client-based pedagogy, youth learn these skills in a situated context, serving an authentic need.
- **Contributing to local communities.** In being actively involved in the design and creation of projects, youth participating in client-based work not only advance

their own learning, but also play a role in meeting local needs of those in their community.

- **Reputation and social capital.** In that client-based models involve interactions with various kinds of clients, and often professionals in fields that youth are interested in entering, these models create contexts where youth form relationships, developing their networks and social capital in ways that can lead to future opportunity.

Tensions and Challenges

Depending on the particular model, organizations interested in implementing this form of pedagogy have to contend with various challenges, including:

- Achieving depth versus breadth. It's more challenging to scale these models to involve greater numbers of youth, especially the more intensive and high-stakes social enterprise models. Often these initiatives employ a small number of youth, particularly if they involve paying youth.
- Balancing the needs of clients with the needs and interests of students.
- In some cases, youth might end up in positions where they are actually managing their peers, which can be a difficult transition.
- Some services or products that have demand within communities may not lend themselves well to youth skill development or may not align with youth interests.

The Role of Media and Technology

In client-based digital learning programs, youth often not only get deep experiences learning particular production-related technologies (e.g. cameras, coding languages and environments, design software and hardware) but also may learn to use more collaboration, project-management and client-relations oriented technologies. These can include more basic collaborative software like google docs to advanced timeline and team management software to things like invoicing software that are not usually taught in more traditional digital learning programs that don't involve clients.

Most importantly, client-based pedagogies situate production tools within real world projects, focusing less on ensuring that specific tools or software can be used, but rather on making a great final product, not matter which technical tools are used.

The 3D PrintShop - Client-based Work as Pedagogy at Digital Harbor Foundation

Rafi Santo - New York University

This case example explores what client-based work looks like at Digital Harbor Foundation's 3D PrintShop, with youth maintaining technology, managing workflows, and creating 3D fabrications for community-based clients.

Every day at the Digital Harbor Foundation (DHF) 3D PrintShop, youth employees are working together as a team to help clients bring projects to life. The print shop is currently managed by a staff member, Darius, who has been with DHF since he started as a sophomore in high school, shortly after the organization's Tech Center opened January 2013. He worked his way through DHF's Maker Foundations and member courses which build skills in areas like graphic design, web design, 3D printing and coding, and eventually he created the position of PrintShop manager after he graduated from high school.

Darius' interests were piqued by the 3D printer he was able to learn about and use at DHF, and he began to print cell phone cases as a side-job, selling them to his classmates. Darius gained familiarity with 3D printing hardware and software, developing a number of projects at DHF, which eventually lead him to be a presenter at a White House Maker Fair in 2014 and a participant at various national maker conferences. At the PrintShop, Darius started out as a volunteer who was interested in 3D fabrication. His role shifted as he neared graduation from high school.

> *I was still a member. I was still volunteering, but I started becoming a staff member during the summer employment. And then my senior year of high school I started working here. My role was to manage three assistants. So straight out of high school I was managing people.*

Darius sees confidence as a major skill that his employees develop.

> *When they come in. They don't really want to do anything. They don't want to break anything. They're afraid. If they're afraid to do some stuff, we're going to give them the confidence to do it... Because I fixed this printer, I can do anything in this field. I can be confident...*

Darius, who was manager of Digital Harbor Foundation's 3D PrintShop, assembling a 3D printer for the first time.

Working with local artists, universities, and businesses, the print-shop serves as a learning environment for youth participants who have been through the earlier 'Maker Foundations' elements of DHF's programming. Usually staffing about eight youth employees, the bulk of work in the DHF PrintShop involves taking orders from clients through a web interface, and printing those orders according to customer specifications. Facilitator staff at DHF also look for leads on clients from within the local technology and education communities. For example, a local artist reached out to the PrintShop to print a number of objects for an installation. Youth employees also maintain shop equipment, work with clients on side projects, and keep a portfolio of work for the shop's web presence. As manager of the PrintShop, Darius was the point

of contact with the adult staff at DHF who offer guidance in management, helped him mentor the youth employees, and troubleshoot issues that came up both with clients and internal technology and workflow challenges.

DHF's 3D PrintShop is partially self-funded, using the proceeds from the shop's client-based work. It is also funded partially by a grant from the National Science Foundation in collaboration with a professor from the University of Baltimore-Maryland who has an interest in youth pathways in technology careers. Youth are paid for their work at the shop, and Darius was paid as a full-time employee. Darius describes youth development in the print-shop as focused on

Youth employees at Digital Harbor Foundation's 3D Print Shop

> *...trying to give them confidence and make them makers so they can be what they want to be. Our goal is to give them the skills or experiences to try and take that leap when they go on from high school to college or whatever they want to do next in their life.*

Darius shared an example of a PrintShop employee who recently graduated and was able to use her PrintShop experience as an element of her application to Yale University's engineering program. Darius' own story has lead him in a different direction. He pursued college after graduating high school, but found that it didn't quite fit with his current goals and interests. Instead, he's been working full time at DHF's PrintShop, and as of 2018, has been promoted twice—first to the role of Youth Employment Program Manager, which oversaw all youth employment programs at DHF, and then to Tech Center Director, overseeing all programs at the DHF Tech Center. These two stories point to the importance of recognizing many pathways in digital youth development, whether the path is college or career.

Free Spirit PRO - Client-based Work as Pedagogy at Free Spirit Media

Rafi Santo - New York University

This case example explores what client-based work looks like at Free Spirit Media, where youth are involved in the production of films and promotional videos for community-based clients, exploring issues around balancing youth development with client needs.

Free Spirit PRO describes itself as "a social enterprise of Free Spirit Media (FSM)," a youth media organization based in Chicago. On its website, it states that the project is an "Emmy Award winning video production team that specializes in social impact storytelling, documentaries & PSAs, and special event coverage." But something else makes it different from other for-hire film production studios. Free Spirit PRO employs young adult media makers ages 18-25 who collaborate with professional staff to produce high quality films for paying clients. In doing so, Free Spirit PRO acts as an early professional and economic opportunity for youth from non-dominant communities, especially black and brown communities that have historically been under-represented within media, film and television industries.

Free Spirit PRO aims to meet three goals: (1) create professional level projects for paying clients, (2) generate a sustainable revenue stream to support the broader programs of Free Spirit Media, and most importantly, (3) create real-world learning experiences that develop the skills, identities and professional pathways of young adults from Chicago.

The client-facing Free Spirit PRO website states that, "By hiring Free Spirit PRO for your production needs, you will be investing in both your organization and the youth of Chicago," and it features a range of past clients that include a well-known fashion brand and a range of Chicago-based non-profit groups and philanthropies. Fundamentally, Free Spirit PRO aims to meet three goals: (1) create professional level projects for paying clients, (2) generate a sustainable revenue stream to support the broader programs of Free Spirit Media, and most importantly, (3) create real-world learning experiences that develop the skills, identities and professional pathways of young adults from Chicago.

Managing Projects and Youth Production Teams

The everyday work of producing films for clients involves coordination among a small group of FSM staff. These staff engage with new clients, scope potential jobs, put together teams of Free Spirit PRO youth, and manage the production process. The lead producer for FSP, staffer Chad Rispalje, describes the process:

> *A lot of the projects come through word of mouth. Jeff [FSM's Executive Director] has a lot of connections. So, it's either they know Jeff, or they know Free Spirit Media...He connects them with me, and we talk about budget, timeline, and what we have to do to to make a project happen.*

Chad will then have an initial back and forth with clients to determine scope and price, negotiating to a place that works for both groups. After that, he assembles a team from the existing youth that are part of the FSP cohort.

> *We have a crew of young adults, maybe twelve. I'll usually send an email to the group with the filming schedule and to gauge whether anybody is interested.*

Sometimes it's just one or two people who are available. Other times, it's almost the whole group.

In order to figure out who from the Free Spirit PRO cohort will be involved, he considers the needs of the client, the complexity of the job, and the level of talent needed.

If it's a single camera back of the room, I'll take somebody who hasn't worked with us as much because that's kind of a low risk. Or if I know it's a slower paced day, such as when we are filming b-roll, then it's also easier to take someone with a little less experience because we can be a little more over the shoulder and help them get the shots. But if it's a shoot that's really fast, we need our A crew. For the last one we did, I called Yarnome and Josh, who have worked with us a lot and know how to set up the camera. I could say, 'Can you go film b-roll in that room? Then we'll set up the lights and do the interviews here. Come back when you're done.' I could say that and be pretty confident they were going to come back with the footage that we need.

Chad considers many factors when putting together a youth team, including balancing the demands of the project and the nature of the learning experience for the young professionals from Free Spirit PRO. For example, he notes above that projects that have a slower pace might be opportunities for someone less experienced, since he can be more involved and provide deeper guidance and technical mentorship.

But he shares that sometimes the mix of project demands and who's available might require him to step in and directly engage in filming:

There are times, where... it could be a fast paced, big project, but only less experienced people are available, but that's ok - this is our mission. It might mean being a little more over the shoulder, but we find a way to make it work. I try not to be on camera [filming], unless it's a tough shot with little room for error. If this happens, the [youth] can be the production assistant, but generally, we try to have the youth take the lead as much as possible. .

Another consideration for Chad is thinking through pedagogical impact. For a given project, should he aim for a deeper impact with fewer participants, or should he extend the opportunity to a greater number of youth, even if the experience for each will be less extensive?

In the ideal project for us, young adults are involved in pre-production, production, and post-production. But this approach limits the number of youth who are involved. For example, in one project, we kept just three people on the entire project because of pre-shoots. But another option could've been to have two people with pre-shoots, two new people with production, and then two more people on the third day that we filmed. In that case we could have had six people instead of three people working on it. So, I try to balance that trade-off. Is it better to have someone see it all the way through, or is it better to give more opportunity to more people?

Balancing Client Needs with Youth Interest and Skill Development

In doing client-based work, Chad has an additional consideration: balancing the needs of the project and its client with the need to create learning opportunities for young professionals. In the above case, he shared that having young adults involved in every phase from pre-production to production to post-production is ideal, but it also means that those youth need to have a baseline of skills associated with all of those phases. He shared that there are often more youth that are able to engage in the production phase, filming, but there are fewer who have the editing skills required for post-production, or client-focused and project-scoping skills required for pre-production.

Another example of this kind of tension has to do with the question of youth interest. The core of Free Spirit PRO's work is producing documentary and PSA-style films, but often youth are interested in developing independent projects on issues they care about or ones where they have more creative license and direction. Yarnome, a young adult who's been part of Free Spirit PRO, reflects on this tension:

> *Its a different thing when you're making your piece and you're driving it. It's what you want it to be. But in the work we do [in Free Spirit PRO], the client can come back and say, 'Oh that's not quite what we wanted. Can you do this instead?' So you're kind of giving up on what you wanted to do to please them, and it's such a different approach. It's something you gotta learn to deal with.*

Yarnome sees this not just as a small tension, but also as a learning experience as a young professional, understanding that working with clients often means being able to understand and work with their perspectives and needs. As she says, "It's something you gotta learn to deal with." Another Free Spirit PRO participant, Josh, sees the technical skills that he developed in his client work as something that's transferable. "When it comes to doing independent work," Josh says, "all that knowledge and learning that I've gained with PRO, I'll have it."

Structuring Adult/Youth Collaboration in Ambitious Digital Learning and Making Projects

Rafi Santo - New York University

Digital learning can involve youth developing ambitious collaborative projects alongside educators, including massive 'maker' productions, full-featured apps, and digital activism campaigns. This resource explores how to consider adult/youth collaborations on such projects.

What's the Issue?

Youth-serving organizations that incorporate creative production in digital media often have young people engage in ambitious collaborative projects alongside educators that go beyond what individuals could make on their own. Large-scale events, massive maker productions, full-featured apps, digital activism campaigns and complex video games are all examples of ambitious projects that youth and adult educators might work on together in the context of digital learning and creative production-focused youth programs.

Large-scale events, massive maker productions, full-featured apps, digital activism campaigns and complex video games are all examples of ambitious projects that youth and adult educators might work on together in the context of digital learning and creative production-focused youth programs.

In this resource, we explore what this can look like in practice; we point to real-world examples, discuss the value of this form of creative, collaborative youth pedagogy, note challenges, tensions and questions, consider the role of technology, and share reflections for consideration by educators and organizations that want to explore this approach.

What Does it Look Like?

There are many ways to structure adult-youth collaborations in informal learning programs. In his study of youth activism programs, Ben Kirshner (2008) outlines a framework for different forms of collaboration, distinguishing between facilitation, apprenticeship, and joint work. Some of these approaches have greater degrees of adult participation, some have more leadership from youth themselves, and some aim to achieve a balance of the two.

		Youth-centered learning environment: More	Youth-centered learning environment: Less
Adult participation in the campaign	More	Apprenticeship	Joint work
	Less	Facilitation	

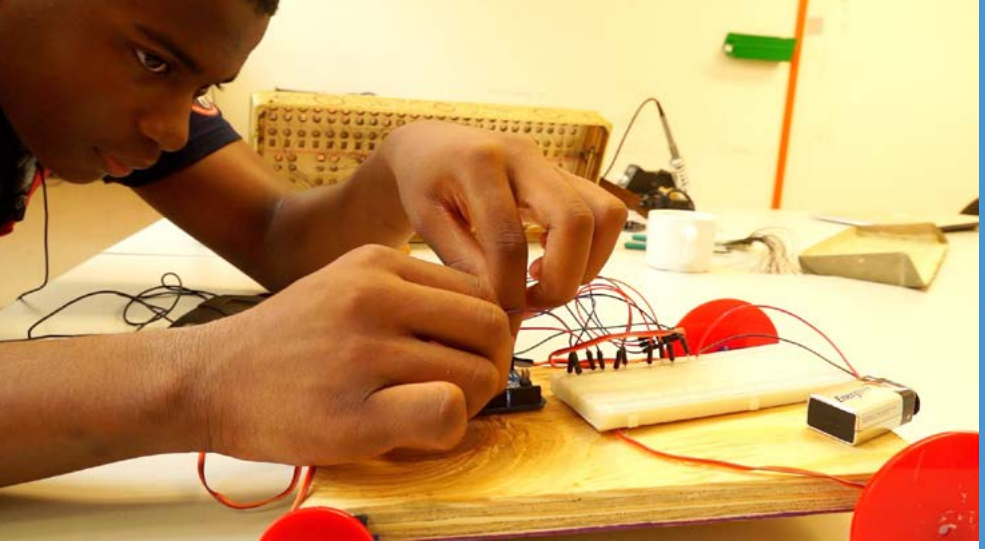
Framework on youth-adult collaboration, from Kirshner (2008).

In a facilitation approach, "adults [seek] to be neutral facilitators of a youth-led process" (p75), doing things like guiding conversations, sharing routines for decision making or project management, and making sure youth have resources they need, like equipment (e.g. video cameras, computers), space to do work together or logistics like transportation.

In apprenticeship approaches, youth and adults share many roles and activities, with adults actively giving feedback and sharing their views on how a project might work best, participating with youth in decision making around a project, helping complete tasks, and tailoring activities to the skills and developmental capacities of the youth present. In this approach, educators would still lead structures, like group sharing activities, to help create a sense of belonging, or ones that actively helped guide decision-making in a way that was inclusive of all youth that are involved.

In projects that take a joint work approach, the success of the project itself is emphasized in a way that might mean less tailoring of activities to the skill and interest-levels of the youth themselves in favor of ensuring a project's completion at a high level of quality. Like the apprenticeship approach, in joint work youth and adults participate together in activities like decision-making and project development, but there might "be little effort to position youth as leaders of the project, distance adults from the project, or operate as if one group or another were supposed to be in charge" (p85).

These forms of collaboration aren't mutually exclusive within a given project. Projects might move from one approach to another at different phases of the work. To explore what this looks like in practice, look to three case examples - AS220's FutureWorlds program, Beam Center's 'learning productions' pedagogy, and WMCAT's video game design studio.



What Does it Lead to?

Ambitious educator/youth collaborations are often complex, high-resource endeavors that take lots of staff and youth time, specialized expertise, and often expensive equipment or software. Given that, educators might ask themselves - is this really worth the trouble? We believe it is, because there are many important outcomes that result from these types of projects. These include:

- **Skills** like collaboration, negotiation and communication, problem-solving, role specialization and learning to work in complex teams, design thinking, empathy and the ability to think about and determine audiences and community needs.
- **Contributions** and **impact** on local communities.
- A **greater sense of pride** for the youth involved than might be possible in individual projects.
- A **view into professional practice** in a domain for youth involved.
- Greater youth **motivation and interest** that's generated by taking on an ambitious goal.
- **Collective agency** among a youth community and sense of collaborative accomplishment.

Tensions and Challenges

It's helpful to note that some 'bumps in the road' are natural parts of ambitious adult/youth creative collaborations. Acknowledging these can go a long way to having both educators and youth come in with appropriate expectations around what it can take to engage in this sort of work , and help those that are guiding the process to design with tensions in mind.

Guiding Questions

As you consider incorporating this sort of pedagogy into your organization and programs, it can be helpful to ask yourself:

- If you haven't done this before, what's a way to start small and pilot this sort of approach?
- What access to technologies do you need to have in place, as well as access to others (peers or educators) with different content and technical knowledge?
- How do you envision the mix of adult and youth participation? When is an approach of guided facilitation more appropriate, when should things look like apprenticeship, and when should educators and youth be engaged in joint work?
- How do you want your program to balance and emphasize different project goals, such as youth identity development, skill attainment, and public impact of the project?
- Related to that, how will decision-making and project management be structured, and who will be responsible for what?
- What is the right level of public engagement with the final project? Is the aim to have as wide a public audience experience the work, or is a more narrow group more appropriate to the project goals?

- **Roles and Responsibilities.** First and foremost are questions of roles and responsibilities. Who has power to make decisions, and about what, in the context of a collaborative project? What are adult educators responsible for, and what is up to the youth leaders? Who is accountable for what, how do they know, and what happens when not everyone is able to contribute in the way they thought they'd be able to? A lack of clarity around these sorts of issues can sometimes lead to a project feeling like it's going off the rails.
- **Compromises and Buy-in.** For creative youth that might be used to making stuff on their own, it can be a new experience to cede their own individual ideas and time on independent projects in order to help bring a bigger vision to life. And while a big project at the beginning can be really exciting when all sorts of possibilities are on the table, when things get more complex and the 'rubber hits the road', youth motivation can dip. Educators often need to support youth to meet the challenge of actually bringing a project to life, even if some of their ideas didn't make it in the final version.
- **Managing Scope.** Large projects can often take on a life of their own, and youth that haven't had experience with project management might come up with big ideas that may not match the time and resources available. If that's not reigned in and the project gets underway, when things can't get done everyone involved can get disappointed. Depending on the perspective and approach, having youth experience these sorts of lessons can be part of the process. Having mechanisms in place to reflect on feasibility of designs is not just good practice, it can also help reduce the number of late nights that staff involved might have to take as the project nears its completion.

The Role of Media and Technology

It's helpful to note that some 'bumps in the road' are natural parts of ambitious adult/youth collaborative projects, activities like this that are focused on digital and creative production disciplines, like game and app design, media arts, film, music and maker, are distinct in a couple of ways that should be discussed and leveraged:

- **Incorporate specialized technology expertise of youth and adults involved.** Many youth, or specialized educators like teaching artists or technologists, can bring specific expertise in certain technologies or disciplines. These are resources to build off of!
- **Adapt design processes coming from digital culture.** One of the strengths of media and technology disciplines is that they have strong cultural practices around collaborative production, including things like the design thinking process, attending to audiences and users, open collaboration and a range of ideation techniques.
- **Consider mixed media approaches.** If your organization engages youth in multiple forms of media, arts and technology making, consider what it can look like to create collaborative projects that span creative disciplines.

- **Use tech tools for collaboration and project management.** Support youth to engage in standard professional practices by using tools like cloud-based file-sharing, collaboration platforms like Slack or group email lists, and group project management tools to keep things on track.
- **Document project process with rich media.** Using film, photo and audio to capture the process of creating an ambitious collaborative project can help both to reflect on how things went after the project is complete, but also to give outside audiences a 'behind the scenes' view into what it takes to pull these sorts of projects off.

FUTUREWORLDS - Adult/Youth Collaboration at AS220

Rafi Santo - New York University

This case example highlights what ambitious adult/youth collaboration can look like in practice, highlighting FUTUREWORLDS, a large-scale, annual community event co-produced by AS220 youth and staff.

FUTUREWORLDS is annual event held by the Providence-based youth arts organization AS220 Youth. The event is rooted in themes of Afrofuturism, which melds narratives from black and sometimes Latino culture with the SciFi genre, using science fiction as a speculative medium about different possible futures for marginalized communities. Afrofuturism focuses on 'writing the future', in contrast to storytelling genres in African American and Latino communities that focus on the past. In order to put on the event, 'apprentices' from each of the active 'studios' at AS220 Youth and across their three sites in the city work together to determine both a theme and format for the event, and then coordinate and collaborate in order to make the event happen. Youth first spend time researching the themes in depth before any art is created to gain a better understanding of the systemic barriers that they face on a day to day basis.

This research is structured around the Design Thinking phases. For example, in one FUTUREWORLDS production that centered on a theatrical performance about police brutality, systemic violence, and the evaporation of arts programming in schools, each studio made unique contributions. The visual arts studio worked on background murals and dioramas, the apparel studio worked on character costumes, the music studio composed tracks for the play's musical numbers, the design team worked on a number of mechanical props, and the performing arts studio acted as the cast. The studios worked together to create the thematic focus and core script, and then coordinated with one another as they each specialized team worked in its contribution to the event. An AS220 staff member, Anjel, reflected on the FUTUREWORLDS project in this way:

The approach is highly collaborative. I like to have staff and young people be involved in every phase of creating the project. I think sometimes to a fault because that can also drag a process out significantly. The script writing took a crazy amount of time because literally, young people and staff from across our three sites writing this play together. And it was beautiful. It was amazing, it was beautiful, and it was highly professional. But to get it to that point, it took months. It took months just to get everyone to feel like they had at least a piece of that script was theirs, or they could see their line in it they wrote, their idea come to life. It took forever. And then, really, it did take me and Janay, staying up until 4 a.m. consecutive weeks out of the summer, editing it, just making sure it was polished enough to be presented.

Read more about AS220's FUTUREWORLDS pedagogy in their article about the project on page 43.

Learning Productions - Adult/Youth Collaboration at Beam Center

Rafi Santo - New York University

This case example highlights what ambitious adult/youth collaboration can look like in practice, highlighting Beam Center's pedagogical approach of 'Learning Productions', which embody real-life creative projects as they occur in professional and artistic contexts.

At Beam Center, a maker-focused youth development organization based in New York City, youth and teaching artists work together on what they call "Learning Productions", a pedagogy and core philosophy "designed to embody the knowledge and beauty of real-life creative projects as they occur in professional and artistic contexts ('in the wild') and yield tangible, functional products." Learning productions can range in complexity, "from fairly simple projects like a BoomBox constructed with wood and electronics completed over a few weeks to large-scale constructions like the Digital Poetry Project which employed a laser-cutter, Arduino coding and advanced woodworking that was constructed over several months."

Beam Center shares about one project in their whitepaper on learning productions:

> *Beam instructor Lizzie worked with teenagers A and J from South Brooklyn Community High school, a transfer school. As part of a service learning project, all the students were asked to do a project that benefited their neighborhood. Three students wanted to create shelters for the many stray cats in their Red Hook neighborhood. They designed a cat shelter that they wanted to fabricate, and Lizzie worked intensively with them because they didn't know how to build it. Lizzie consulted with them, helped them improve their plan and then taught them how to use the tools. They created a 3-story Cat Condo suitable for outdoors from wood and carpet with hand-held tools. In addition to construction, the students had to find place in the community to place the Cat Shelters. This ended up being more difficult that they had anticipated, since not everyone wants to attract stray cats. They were persistent, putting in extra time on the weekends to talk with neighborhood businesses about the project, and eventually found a home for the shelter.*

Read more about Beam Center's Learning Productions approach in their white paper on page 49.

Game Design Studio - Adult/Youth Collaboration at WMCAT

Rafi Santo - New York University

This case example highlights what ambitious adult/youth collaboration can look like in practice, explores how a teaching artist at WMCAT managed a group process around determining the topic of a video game that teens would develop over a semester.

It's just after 3 pm, and ten teenagers are settling into their computers in a mid-sized room, clustered around tables, laptops open. Some are joking among themselves, others quietly browsing online. They're all part of the game design studio at the West Michigan Center for Arts and Technology, and are about a third of the way through the semester-long program. The teaching artist for the studio, Kali, a professional game designer, shares that today they'll be continuing work on the cooking game they're developing together, which they decided earlier would be about a first year college student who's trying to learning how to cook in their dorm room. The agenda for the day is that the group will start by taking time to independently gather ideas and ideate visuals and core mechanics that might be incorporated into the game, and then later will discuss and make decisions on the overall design and theme of the game. They haven't decided exactly what the game will be in terms of genre or gameplay, and Kali floats that they'll return the idea that they'd talked about in an earlier session about whether the group wants to incorporate virtual reality into their game.

"You'll have until about 4 to do open concepting—we have sketch paper if you want to draw art that might help us figure out the look and feel of the games, you can grab stuff off google images, use illustrator, and drop ideas into our slack channel. It's called "How to Cook 101", and we don't have a title for the game, so if you want to brainstorm on that, you can."

The group gets going, and there's a freeform, organic feel to the room. A pair of teens, sharing that they're artists, are looking for background images, another, Yolanda, is sketching out the beginnings of a coffee maker using 3D modeling software. She hits a technical roadblock in Blender, the software she's using, and one of the other teens, Bobby, gives her a hand. They move back and forth between Bobby showing her features of the software that she can use, and them talking through different ideas around what the coffee maker can look like, and, of course, swapping jokes.

The group's slack channel is being projected to the screen at the front of the room as they work, and a stream of reference images—of dorm room kitchens, pictures of cupboards, the insides of fridges—is interspersed with memes. One of the kids jokes, "Are these relevant memes?", with another responding, "They're very relevant memes!"

Isaac, one of the more vocal and experienced teens in the group, exclaims that "we don't have a programming channel!", a new chat space in their slack dedicated to ideas around how the game will be coded. Kaley responds that if there's a programming channel, there should probably also be an art channel, and so she goes ahead and creates one. "I'm just going to go and copy some of the images you guys put into the general channel and add them into the art channel." One of the teens jokes that he'd make a level-design channel, but since he's the only one interested in level-design, it would just be him in there, sending messages to himself.

As the group works, there's all sorts of little bits of feedback they give to each other about the concept art, background images, what they like, what they think does or doesn't quite fit how they've been thinking about the look of the game.

At around the 4, Kaley invites the group to come back together, and they go around the room sharing what they've been working on during the open concepting time. Interspersed with the share-out, Kaley starts to pose questions to the group about the direction of the game's overall design concept, while also sharing her thoughts.

"I'm sort of leaning more towards us doing one recipe, and then that recipe being broken up into a bunch of minigames, and then if we have time we can do another recipe."

A girl named Tina jumps in after Kaley, "Oh, oh, I have an idea. Like a mini-game where you go to the fridge to gather the ingredients. And then in the background you can have a few shelves, and like some moldy pizza that you can't cook, but then other real ingredients that you can use for the recipe."

Kaley at one point resurfaces the question of whether they want to do a game that involves using virtual reality - "What do you guys think about doing VR? If we did VR it would probably all happen in the space, like all in one level. Where Aaron mentioned, if we didn't do VR, we could jump from mini-game to mini-game." Isaac pipes up, putting in a vote for the multiple mini-game approach, and Faye agrees, adding, "The VR part will take a lot more work, and will be more difficult to test."

Kaley tests the feel of the room to see if there's a general consensus—"Is everyone ok with us not doing VR then?" Ophelia asks a clarification, if doing that would mean going 2D or 3D in the game design. Kaley responds that it would mean creating 2D minigames. The group coheres around the idea of doing the mini-games instead of going for VR, and Kaley moves the conversation forward into other areas.

Kaley: What other mini-games have you guys talked about? Is it cooking mama that someone mentioned?
Tracy: Yeah, Cooking Mama is good.
Isaac: I can see something like making cake, involving minigames of cracking eggs, mixing batter, etc..
Kaley: Thinking about that programming-wise, how would that work?

Isaac offers some ideas on how that sort of game might be coded, and from there Kaley moves the discussion towards what other sorts of mini-games they might do. One youth shares that they could think about doing something with making ramen, another adds on an idea about making stew. Kaley mentions that these are goods ideas, and that they also need to consider that anything involving liquid presents some unique technical challenges in terms of the artistic design work.

After a bit of this ideation around mini-games, Kaley moves to focus the conversation towards next steps, based on the input that the youth have shared during the prior discussion:

I think for right now we should focus in on one recipe and one minigame to just manage our scope, and we can move on from there. I'll document all the ideas we have, but how do you guys feel about focusing on the ramen for right now?

There are a good number of head nods among the group, though no formal voting process. But the process flows in a way where it seems like the group is comfortable with how things are moving forward. For the last portion of the workshop Kaley and the teens brainstorm around all the artistic elements they'd need to generate in order to design the ramen mini-game.

Linking Social and Emotional Learning to Digital Learning through Collaboration and Empathy

Chelsey Hauge

Rafi Santo - New York University

What does digital learning have to do with social and emotional learning? This resource explores linkages, highlighting ways that digital learning programs can support youth outcomes around collaboration and empathy.

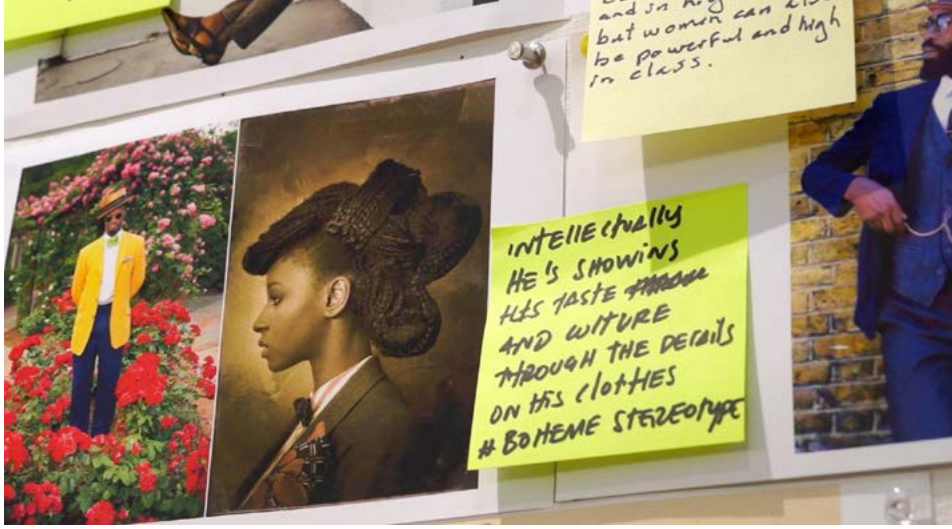
What's the Issue?

Sometimes, it seems as though we must choose between digital learning and nurturing social and emotional learning (SEL) opportunities with young people. Somewhere, somehow, feelings of empathy, emotion and trust became unmoored from digital engagement, and yet—because our world is increasingly defined by mediated networks and engagement with technology—the need to emphasize social and emotional development in digital learning is increasingly urgent.

Despite the perceived break between SEL and digital learning, both digital media organizational ethos and the everyday practices of organizations doing digital learning work with young people suggest that there is a strong bridge between social and emotional development and digital learning, and that they can reinforce and strengthen each other. In this resource, we

There is a strong bridge between social and emotional development and digital learning, and that they can reinforce and strengthen each other

explore how organizations with digital learning programs weave SEL into their practices, particularly those related to collaboration; practices involved in working effectively and respectfully with others, and empathy; practices related to perspective taking.



What Does it Look Like?

Here, we explore how social and emotional learning skills of collaboration and empathy are woven through curricular and programmatic practices in digital learning programs.

Exploring Difference through Digital Design and Storytelling

At DreamYard, in a partnership with Mouse, a technology education organization, students in the Design League program work with an organization focused on serving people with special needs. Hillary Kolos, Director of Digital Learning at DreamYard, describes the process of students working with those with cerebral palsy to identify design opportunities around assistance technologies:

> *Students learn about human centered design skills. And then, they interview people served by the organization, identifying needs they have that could be addressed through new technologies. They go on to develop tech prototypes with the help of tech mentors.*

This partnership allows students to deepen their skills in digital media and experience using their skill set to effectively help another group, developing empathy for those with an experience different from their own. In terms of social and emotional skill development, being able to constructively contribute in a concrete way to a population that is differently disadvantaged is an excellent opportunity.

Another opportunity for empathy development in digital learning comes through practices of storytelling. In an example of this coming from WMCAT, based in Grand Rapids, Michigan, a group of young people were interested in learning about how to use 8mm film in a project that also used digital video. In attempting to identify a story that would 'work' with 8mm film, they chose to focus on the story of a youth in the group who was a recent immigrant. They elected to tell a story in which he had a flashback during a therapy session to part of his immigration story, with the driving idea being that memory could be visually captured through the grainy nature of 8mm film.

This is a powerful example of the relationship between technology education and the

development of empathy. The 8mm film was what spurred the decision to focus on this young person's experience, and enabled the group of youth to engage in witnessing their peers' immigration story. Here, it is both the interest in this media technology (8mm), the collaborative nature of media production (each student in the group had a role to play), and the impetus to tell someone's story that opens up a space of empathic witnessing, where the student at the center of the story is invited to trust his peers with his story as they explore the aesthetic dimensions of representing memory about immigration and youthfulness. The student at the center of the story was offered an opportunity to magnify his voice, while his peers offered witnessing and production support—woven together with thoughtfulness about the aesthetics associated with particular media technologies—that enabled the story to be told.

The impetus to tell someone's story that opens up a space of empathic witnessing, where the student at the center of the story is invited to trust his peers with his story

Building Empathy and Collaborative Skills through Media Production Teams

Another way to build opportunities for development of empathy, as well as collaboration skills, among young people is in the 'production team' approach used by Free Spirit Media, a Chicago-based organization focused on film and journalism. Young people are placed into media production teams with defined roles, and rotate through the roles. The same young person might first serve as a scriptwriter, then a director of photography, then an editor, and so on. What's important here is that there is an intentional shuffling of roles. More advanced students may focus becoming more proficient at particular roles, but early on, students at Free Spirit Media begin to develop perspective-taking through this programmatic structure. The ability to move between perspectives and understand the process of media production from different lenses is an important part of developing empathy, and helps youth become better collaborators. This structural component to Free Spirit Media's production process allows students to practice moving between and across perspectives, therefore offering a template for them in terms of how to consider issues, and collaborative processes, they may come across in the future.

The ability to move between perspectives and understand the process of media production from different lenses is an important part of developing empathy, and helps youth become better collaborators.

What Does it Lead To?

The practices outlined above offer opportunities for young people to develop both empathy and collaboration skills through digital learning projects. Many of these practices likely require that staff are deeply engaged in relationship building with young people and also, that they work very closely with young people so that they may coach and facilitate in real-time, alongside youth as they move between technological and social and emotional realms. Enacting curricular practices that deepen the relationship between social and emotional learning and media/technology lead to:

- **Culturally relevant pedagogy.** A commitment to making programming relevant to the lives, communities, and histories of the youth involved
- **Opportunities for perspective-taking.** Allowing young people to practice viewing issues that are important to them from diverse viewpoints, as well as exploring different roles that others play in teams.
- **Understanding relational elements of digital design.** Having youth come to an understanding that creation with various forms of digital media isn't just a technical endeavor, but a human one.

The Role of Media and Technology

The relationship between these particular forms of socio-emotional learning are deeply linked to the processes of digital production and technology development. Let's return here to the WMCAT example in which the group of youth, curious about how and when to use 8mm film, elected to tell a story of memory and immigration, because they imagined that 8mm would aesthetically represent memory. Here, curiosity about a new medium drove the young people to engage with one of their own stories, and to amplify a voice and story that otherwise might not be heard. In the example of Design League, the entire process of learning about and developing new technologies is rooted in an approach that centers empathy - human centered design around problems experienced by a particular population. Similarly, in the case of Free Spirit Media, the skills of collaboration are developed through the needs for multiple roles involved in a film production process. Through engagement with making, creating, designing and exploring with media and technology, young people are able to move into spaces that challenge them to engage with the development of social and emotional skills.

Guiding Questions

As you consider weaving social and emotional learning - and especially empathy and collaboration - into your organization, you may wish to consider the following questions:

- In your work on digital learning with young people, can you set up conversations and engagement opportunities for youth with others that are different from them?
- In your digital production programs, how can different mediums inspire the telling of diverse stories?
- In your digital production programs, can you intentionally support youth to move across and between different roles so that they can practice different perspective-taking?
- Do you want young people to tell and/or share their own stories, or do you want them to tell/share the stories of other people? Either way, how do you facilitate the sharing of voice?

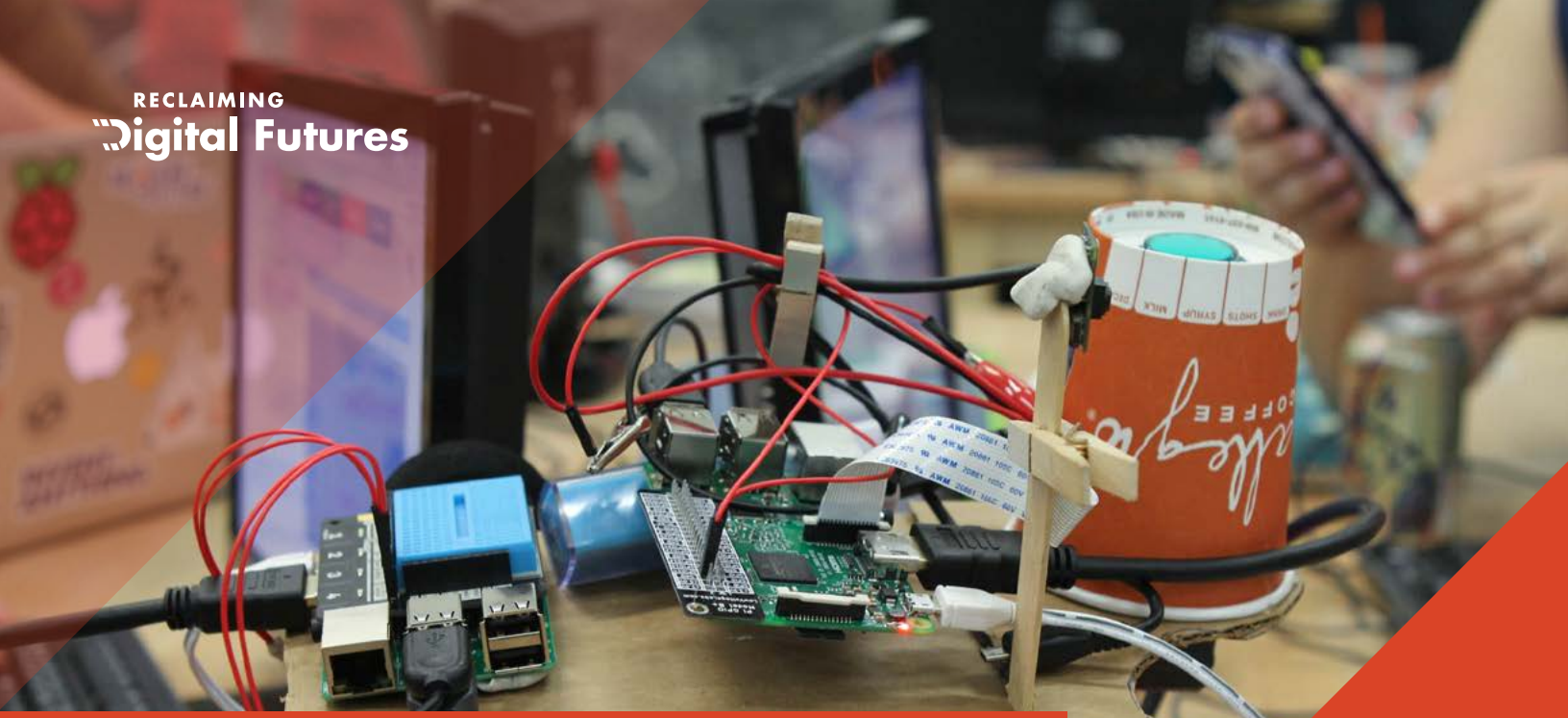
Tensions and Challenges

Perhaps the most significant tension around social and emotional skills and digital learning remains the challenge we opened with: the very real perception that digital engagement cannot enhance social and emotional awareness or engagement. The first challenge to overcome is the perception that 'the digital' and 'the social' don't have a relationship.

In thinking particularly about the examples we shared on empathy development, it's important to avoid situations where youth involved in design or storytelling around marginalized populations develop a 'savior' dynamic, one where they come to see themselves are solving the problems of a community unable to do, or tell the story because someone else can't. Instead, position youth involved in these empathy-rooted projects as working in solidarity with individuals, actively listening to what they're saying, and avoiding tokenizing their experience.

Finally, with regards to collaborative practices, it's important to acknowledge that focusing on developing true group work might come somewhat at the expense of an 'efficient' process of media production. Some youth might be more skilled across a range of roles, which could easily lead to having them take an outsized role in contributing to different roles. But, in order to equitably give all youth an opportunity to learn both technical and social skills, it's important to keep an eye on how the collaborative process plays out.

Focusing on developing true group work might come somewhat at the expense of an 'efficient' process of media production.



Guiding Perspective:

Technology

Intentionally select and integrate tools and practices that support voice, creativity and participation in ways that are meaningful and impactful for youth futures.

In making decisions about what, where, when and how to incorporate technology into program design, we found that our partners were considering how the choices they made would bolster larger goals around supporting youth futures. We provide a brief framework for thinking about different affordances of technology in informal learning settings as a starting point to evaluate how an organization can leverage and integrate technology within youth programs to best fit its unique situation. We offer the following questions for consideration: What might technology help an organization to achieve? How does technology align with an organization's broader mission and approaches to learning? How do choices around technology speak to the interests of the youth the organization serves, the capacities of its educators, and the needs of its community?

The kinds of technology we're talking about here are specifically ones that youth can use and interact with as they create, connect and share. These include various forms of media production tools, hardware and software, programming languages, Internet sites such as social networks and cloud-based production tools, 3D printers and laser cutters and even 'low tech' tools like crafting and woodworking materials.

Organizations can amplify key goals for youth by incorporating technology into their programming in ways that follow some or all of the best practices laid out in our resources. There's no one right way; therefore, not one right set of tools that organizations should focus on. The right tools for any single organization are the ones that serve its goals.

Resources in the Technology section offer our partners' insights on achieving youth outcomes that include: development of skills that move youth from consumers to producers, building professional social capital, promotion of cultural and political voice, engagement in place-based innovation, grounding in identity and community, and documentation and reflection on learning.

- **Integrate technology in a way that moves youth from consumers to producers.**
  Perhaps most straightforward, technology should be incorporated in a way that provides youth opportunities to create. Organizations might do this through design, coding, film, visual arts, music, digital fabrication and other areas. Direct use of discipline-specific technologies builds the kind of technical skills needed for youth to become proficient producers with technology, as opposed to just consumers.

Read about a range of tools you can use for youth programs in YOUmedia's Informal Digital Learning Software Guide.

- **Use technology projects as opportunities to develop youth's professional social capital.**
  Having youth work collaboratively on technology projects with experts, such as teaching artists and industry volunteers, or even doing work on client-facing projects can be the basis for building relationships in the fields they're interested in.

Read our resource Why Teaching Artists?, highlighting how they can link youth to their professional networks.

- **Promote cultural and political voice.**
  Engaging in technology production can be an avenue for expression about issues relevant to young people's culture and important in their civic and social lives. Technology application in this way can both be the site of expression, such as a documentary or visual arts project, and a mechanism for circulating those projects through social media platforms and online communities.

Check out tools from Free Spirit Media on Distributing Youth Driven Media Projects via Social Media.

- **Engage in place-based innovation.**
  Many of our partner programs use technology production as ways for youth to address problems they see in their community. This might be through creating media that raises awareness of an issue, or through developing technologies that aim to directly solve problems, such as designing apps and building physical tools.

- **Center identity and community.**
  Technology and media production can be a site of exploration of identity, supporting the production of stories or tools that examine cultural practices, and can also be the basis for communities to come together around collective narratives and challenges.

- **Document and reflect on learning.**
  Online communication platforms such as digital portfolios, personal websites and even social network profiles offer opportunities for youth to reflect on and make visible their processes of learning and creating. These platforms also allow them to highlight their emerging expertise in ways that garner understanding and social support from both adults and peers.

Listen to a podcast discussion from DreamYard's Action Program on Designing Community Arts projects.

Read about how youth from AS220 co-create the annual event, FUTUREWORLDS that explores narratives about community and identity.

Learn more about this on the Learning Portfolio Project by DreamYard and the Parson's School of Design.

The Right Tool for the Job: Deciding on Tech, Tools and Materials in Informal Digital Learning

Rafi Santo - New York University

Organizations interested in developing youth digital learning programs face choices about what technology to use. Rather than asking 'What technology do we need,' in this resource we highlight how starting with goals can ensure more meaningful integration of digital tools.

What's the Issue?

For informal learning organizations thinking about developing programs involving tech, it can be easy to fall into a techno-centric trap by starting with the question What technology do we need? Really, the question should be, What goals do we have for youth, and how can incorporating different tools, materials and technologies help us reach those goals?

It can be easy to fall into a techno-centric trap by starting with the question What technology do we need? Really, the question should be, What goals do we have for youth, and how can incorporating different tools, materials and technologies help us reach those goals?

For example, if your organization cares about youth voice and leadership, you might consider different forms of new media production—like film, audio, visual arts, and web development—that promote expression about personal and social issues. You might also consider how social media can be used by youth to spread media they produce to amplify their voice. If your focus is more on economic mobility for your youth, consider what technology and media-related fields are promising in terms of future professional opportunity, and what the industry standard tools are in those

fields. If your organization is more focused on creativity and collaboration, this might mean not just considering which tools you incorporate, but how they're incorporated in ways that fosters these skills and dispositions.

In this resource, we highlight examples of how three different informal learning organizations think about their choices around technology in their programs, discuss tensions and challenges, and highlight some tips for your organization to consider around technology decisions.

What Does it Look Like?

'What do we Need to Get This Done?' Projects Driving Tech and Tool Choices

Beam Center, a 'maker' centered organization based in Brooklyn, isn't wedded to any particular set of tools. Different materials and technologies are driven by the needs of a given 'maker' project that youth are working on. Beam Center emphasizes supporting young people to create hands-on projects that integrate a wide variety of tools that include carpentry, welding, physical computing, video, ceramics, programming, textiles and design. They aim to promote creativity, problem-solving and collaboration, with core values around "imagination", "curiosity", "lifelong learning" and, perhaps most prominently, "agency". Brian Cohen, co-founder and executive director of Beam Center, asked about what kinds of future opportunities they saw themselves as 'on the hook for,' responded this way:

> *I think one of the problems is that this discussion is often framed with the idea that there's an end point. To me, the goal of any youth development organization should be to eliminate all notions of an end point for a kid, because you wouldn't want endpoints for yourself. We don't believe that a kid's road to success is being the thing that is in demand right now. We want the kids to have their own opinions about what their road to success is.*

The organization's relationship to technology and tools follows from this philosophy. Brian shared that "we take a very project driven 'what do we need to be to get this done' approach to any technology or any tools." Beam staffers speak about the value they placed on supporting learners to get used to discomfort or fear of the unknown through engaging them with unfamiliar technologies, and to reframe this discomfort as part of a pedagogy of creativity. Brian shared an example from work with teachers during professional development:

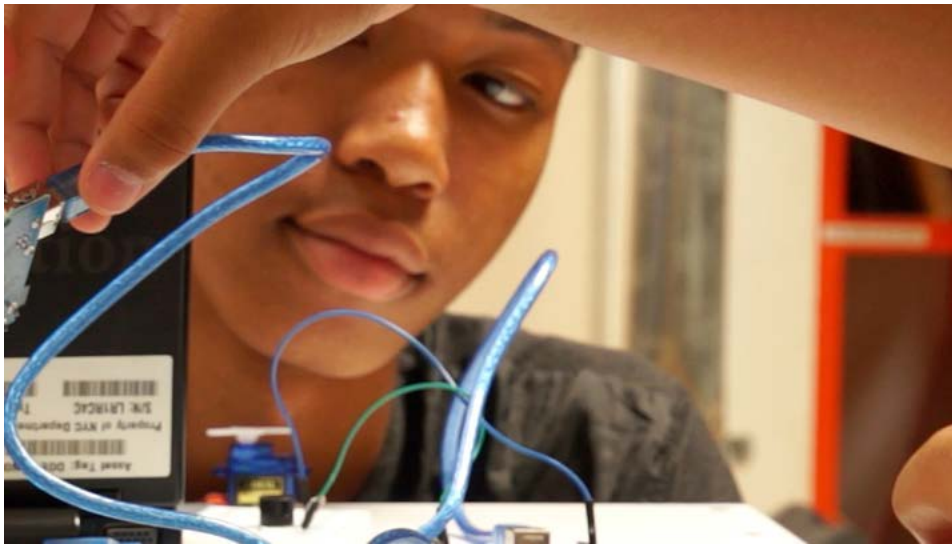
I think one of the problems is that this discussion is often framed with the idea that there's an end point. To me, the goal of any youth development organization should be to eliminate all notions of an end point for a kid, because you wouldn't want endpoints for yourself.

We would give them a challenge to make a machine that does something.(...) Usually it involves a motor. And then we talk about how that made them feel. And they're often very uncomfortable, if not anxious, but then they get over it once they realize that it's okay to have not known the answers and worked them out themselves.

Calvin Stalvig, a Beam Center teaching artist, shared that "when you push beyond your discomfort you're growing and you're learning immediately." Beam Center values this discomfort "because it breaks down social barriers" and puts you "in a position to collaborate," emphasizing the process of making as collaborative and one that involves engaging with others in stance of vulnerability, talking about the need to "let go of your ego" and "not feel ashamed that I didn't know something."

Rather than selecting technologies based on youth gaining proficiency with any given tool, the organization's approach values being able to get comfortable with anything, and being ok with the sort of discomfort that might come from engaging with new tools that you aren't proficient with.

Using Social Media to Produce and Amplify Youth Media Projects



Free Spirit Media is a Chicago-based youth media organization focused on film, journalism and documentary production. Program educators not only use the 'usual suspects' of cameras, microphones and video editing software, but also utilize social media in the production and dissemination phases of youth media projects. During production, youth journalists use social media to learn more about and reach out to potential interviewees. After a piece is complete, social media plays a critical role in helping youth promote their work so that it reaches a broad audience (see Free Spirit Media's resource on using social media for distributing youth media here).

Rachel Jones, an educator at Free Spirit Media, shared that during a program focused on documentary production where youth were highlighting local artists, they supported participants to use Twitter to "put out a call just to see who's making music or art that they want to share. People got back to us and we set up the interviews." They also reached out to artists they were already connected to on platforms like Instagram, who then shared posts about the call with their networks in order to help youth find interviewees for their projects.

Rachel shared how after youth film projects were completed, they also leveraged

social media to get the word out, often engaging with people that youth interviewed to help mobilize a story.

She described how social media plays a role across the production and dissemination phases of a youth media project in this example:

> *For a series of stories done in collaboration with PBS on health innovation, we're going to four different sites around the city this week doing stories on how people are using new ways to solve health issues. Now, we're following them on social media. We're sharing the pieces with them. We're including them in the conversation before the piece is made and also after, getting it out into the city.*

Free Spirit Media's incorporation of social media into their programs is based on the kinds of goals they have around both teaching youth how to engage in journalism (using social media to source contacts) and also support youth voice (using social media to have youth-produced work reach wide audiences).

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Balancing Tool 'Accessibility' and 'Applicability'

Digital Harbor Foundation (DHF), a community-based technology education organization based in Baltimore, describes itself alternatively as a 'maker space' and 'tech center' serving non-dominant youth, with a focus on helping youth gain access to jobs and economic mobility. In aiming to serve high-needs youth, they talk about balancing 'accessibility' with 'applicability' when making decisions about technology. They focus on ensuring the tools they use are easy for youth to access while also making sure that they're applicable to professional futures. Shawn Grimes, Director of Operations at DHF, shared the example of the popular graphic design software, Photoshop, and it's accessibility:

> *Let's use Photoshop, right? Very applicable professional-grade tool, you can get a job doing Photoshop, but the kids are not going to have access to Photoshop at home, they're not going to have access to it at school, at the library.*

Shawn shared that, instead, DHF uses free, open source equivalents including GIMP and Inkscape that youth will have easier access to but that also teach the fundamentals around vector and bitmap-based graphic design that professional grade tools like Illustrator and Photoshop, respectively, are based on. In approaching technology choices this way, DHF aims to embody their equity orientation towards access to professional futures.

> In aiming to serve high-needs youth, Digital Harbor Foundation focuses on balancing 'accessibility' with 'applicability' when making decisions about technology.

Their commitment to applicability is also clear in how they talk about Scratch, the popular educational programming platform. Shawn shared that they aim to "get [youth] out of Scratch as fast as possible." He shared that "it's helpful to teach them the logic and use that as a scaffold for teaching programming logic without having to get into syntax, but you're not really going to get a job developing games in Scratch." Similarly, DHF had explored using Processing, a visual programming language popular for making computational art, but described it as a "one-off language," in that it didn't actively build towards engaging more deeply with other popular languages. On discovering a Javascript library called P5, a Java-based version of the Processing language, they switched to it since it supported youth to develop skills within Java, a popular programming language utilized in professional, software development and programming occupations.

What Does it Lead To?

There's no one outcome for youth associated with technology usage in informal learning setting, and we outline a range of possible outcomes in our overview perspective here. Instead, technology should be seen as a way to either reach new outcomes that you haven't been able to through other programs, or amplify existing outcomes for youth youth.

Tensions and Challenges

Inherent in technology choices for informal learning organizations are a number of tensions and challenges that you should consider:

- **Capacity and learning curves.** Frontline educators and the staff that support them have a range of capacities around different technologies, and some technologies may have greater learning curves while others are easier to use from the get-go. Choices around new technologies should always consider not only the tools themselves and what outcomes they reach, but also what kind of staff development needs they might entail.
- **Space and maintenance limitations.** New technologies can also mean more demands on your organization in terms of space but also upkeep. For maker-

centered programs that use many physical materials, it might require new staff roles dedicated to organizing and maintaining inventories. For more digital-centered programs that utilize various software, resources might need to go to maintaining up to date versions, troubleshooting installations, and making sure that various software work well together to reach program goals.

- **Cost.** The cost of equipment, materials and software is of course a major issue for informal learning organizations that are often under-resourced. This comes up not only in the purchase of new tools, but also in upgrading as well as dealing with shifts in what's available. Additionally, costs aren't always monetary, with some 'free' software utilizing business models based on collecting user data, in this case those of your youth. One helpful consideration here is whether there are open source versions of the kinds of software you're interested in using.
- **Tools can push people away instead of inviting them in.** Consider and pay attention to ways that certain tools are laden with cultural baggage that might make them less inviting. For instance, certain genres of games might be heavily gendered, and featuring them prominently might mean inadvertently sending the wrong message to young women.

Guiding Questions

In making choices about technology in your programs, consider the following:

- How can we align tech choices across programs? For organizations with multiple programs serving different ages and demographics, key technology choices to the varied outcomes that exist across them. This means asking these questions about which technologies are appropriate not once, but across various programs and ideally aiming to align across them.
- How do we revisit decision-making around our technology? Choices around technology don't just happen once, but are ongoing and developmental for any youth-focused organization. At any given moment, they should take into account both the capacity and interest of your educators, your youth, as well as larger societal trends around emerging technologies. Ideally, your organization can put into place processes and even roles that are dedicated to revisiting and shifting choices around what technology you use as needs, capacities and interests evolve.
- How can we foster buy-in through our decision-making around technology? Technology choices that involve many organizational stakeholders, including youth and frontline staff, can result in more meaningful buy-in and interest in use, and less likelihood that tech will go unused.
- How can we develop routines to explore new tools? As the process of technology procurement is ongoing, consider creating routines where staff and even youth can come together to explore playing with new tools, technologies and materials to explore their applicability to projects and programs.

The Space for Creativity

Jean Ryoo - University of California, Los Angeles

How do we create spaces in our organizations that invite youth to be creative with media and technology? This resource explores examples of how youth development organizations organize and maintain their spaces in ways that foster creativity, agency and collaboration.

What's the Issue?

When entering new spaces—whether it's a community organization, a store, someone's home, an office—we can tell pretty quickly whether we want to stay and engage with that space, whether we feel lackluster about that space, or whether we want to run as fast as possible away from that space. We may feel safe or unsafe, invigorated or bored, welcome or unwelcome, all from the way a space is organized. For youth-serving organizations whose goals are to encourage specific skills (including creativity or independence), dispositions (related to civic participation, self-confidence, resilience), and the use of digital tools as creators and not just consumers, designing physical environments to be both inviting, inspiring and supportive of creativity is an issue that deserves thought and consideration.

Through descriptions of how organizations like YOUmedia and AS220 Youth approach aligning their spaces with their respective pedagogical purposes, this resource explores the ways organization of informal learning spaces can lead to a variety of outcomes, from supporting youth curiosity and creativity, engaging in collaborative projects, feeling welcomed and supported, and even taking ownership over their learning and how programming looks. We also share considerations for how to organize space for creativity, challenges that may arise, and the role of media and technology in either supporting or limiting innovation.

What Does it Look Like?

Various organizations focused on rapid ideation and creativity have gained recognition for the ways they organize physical spaces to support such innovation. For example, the co-directors of the Environments Collaborative at Stanford University d.school describe the importance of making it easy to visualize and materialize ideas in ways that make it equally easy to throw them away, allowing room for people to move smoothly and have active physical postures in and out of groups, and lowering everyone to the same "eye level" status in ways that support transparency so all voices are heard (Harvard Business Review interview). Similarly, IDEO has shared tips for making workspaces more creative by installing communal tables that force people to gather in a shared space, putting things on wheels so that perspectives are forced to shift alongside bodies/objects, making values visible with signs describing what people care about or believe in, or ensuring creative tools are visible and "in the way" (IDEO blog).

The San Francisco Exploratorium's Tinkering Studio describes how environments for creativity and learning should include things like putting projects on display in ways that make people curious about what might happen in that space, creating intentional opportunities for people to share and display their project iterations over time so the history of ideas are visible, or allowing for whimsical personalization of the space by participants that allow people to engage when and how they want to in ways that are most comfortable for them (tinkering blog).

We highlight here two organizations focused on creative media and technology pedagogies—YOUmedia at the Chicago Public Library and AS220 Youth in Providence, Rhode Island. They demonstrate how spatial design can powerfully impact the ways young people engage with materials, tools, and focal activities, as well as whether or not people feel a sense of belonging and ownership of their experiences that can fuel creativity.

Environments for creativity and learning should include things like putting projects on display in ways that make people curious about what might happen in that space

YOUmedia—'Controlled Chaos' for Teen-driven Creativity

Some of YOUmedia's goals are to support youth in being able to explore creative interests and use these to express their ideas and contribute to their community. Jeremy Dunn, the director of Teen Services at Chicago Public Library shared that YOUmedia aims to help teens "to create things and have an impact at least on their immediate environment in terms of something they've been able to accomplish, something they've been able to share, something that helps them develop the narrative of who they are in relation to their peers and their community. The thing that gives them hope about what they can do the next day or the next month."

YOUmedia wants to see personal, social and academic growth for their youth. What this means is that, for personal growth, they want to see teens excited to come to their library spaces while demonstrating increasing curiosity and creativity, persistence

in problem solving and critical thinking, and confidence to take ownership in self-driven projects. For social growth, they want to see teens feel welcome, accepted, and supported in ways that help them develop communication skills while growing a sense of social responsibility and wanting to make positive contributions to the community. Academically, they want to see youth engaged in career development and acquiring the skills necessary to pursue their post-secondary plans with digital and information literacy. Yet to achieve these goals, YOUmedia recognizes that experiences in their space must be youth-driven and interest-driven.

YOUmedia's teen spaces might be characterized by the idea of "controlled chaos"—large open spaces where the layout can change dynamically in order to keep things "fresh, new, and flowing." YOUmedia staff describe how the adults never know exactly which activities or tools youth will get excited about, so organizing the space takes an element of "accepting cycles of trial and error" to see what teens want to do and when. This means not only having all materials and tools visible and available for teens to use—from guitars to computers to sewing machines to cameras in different areas of the room—but also giving teens free rein to use both materials and the space as they want. Teens can come and just hang out with friends, play video games, dabble with musical instruments, paint, or sew. But these seemingly informal interactions with one another and the materials in the space quickly lead to youth involvement with designing video games, recording a music track, or filming and editing an animation piece with adult mentors present for support and inspiration. Walls do not separate activities or people, allowing for youth to see and be inspired by their peers and mentors nearby or the materials and tools available.

Yet it is not simply the openness of the space or availability of materials/tools that inspire youth to engage and create. Importantly, the space needs to feel welcoming to the teens both aesthetically and socially. Teens cannot feel forced to be there and participate, but rather the space invites them to choose what they're interested in and pursue that line of interest with friends and mentors. Teens need to feel that the space is warm and friendly and that the code of conduct is focused on respect towards others is maintained in the space. As one staff member noted, "tech might get them in the door, but it's the relationships that keep them involved and coming back" and so the space needs to reflect those positive relationships.

YOUmedia Key Considerations for Space

- Keep layout fresh, flowing, flexible, dynamic
- Accept cycles of trial and error in organizing the space
- Make materials/tools visible and available to use at all times
- Give teens free rein to use materials/space as they want
- Do not separate activities or people - make all visible to inspire one another
- Make teens feel welcome by maintaining a code of conduct of respect, and building positive friendships do not let space be secondary to programming goals

One example from YOUmedia about how the openness of the space and the strength of relationships developed there resulted in new opportunities for creativity, was when one of the educators noticed that there were a lot of teens playing video games and she wanted to get them engaged more deeply beyond the games. She introduced the idea of creating a blog together, but the youth were not interested in writing after a long day of school. So instead, she invited youth to create a podcast about gaming, which developed into a multi-year project. However, after some time, one teen suggested creating "lets play" videos for the new Smash Bros. game coming out, which led to innovation in the ways youth created media for broader audiences. This, in turn, led to participation at the annual Comi-con event as a celebratory party involving multiple teens outfitted as Team Skull from Pokemon, wearing costumes put together by two of the teens in the group. In this case, providing an open space where youth could hang out and play video games, combined with the availability of interesting tools and materials as well as building relationships with mentors who facilitated an opportunity for youth to share their gaming expertise more broadly inspired youth to think beyond what adult mentors imagined. Innovation came to life when the space was designed for teen-driven engagement and interest with materials and activities, relationship-building, and youth ownership.

AS220 Youth - Surrounding Youth with their Creative Works

In downtown Providence, AS220 fosters creativity in their physical environment by inviting youth to constantly co-create the look and feel of that space. This dedication to ensuring youth have co-ownership of the space is immediately palpable upon entering the building. The posters youth have designed, the t-shirts and costumes youth have created, the paintings youth have made, youth-driven work is celebrated and displayed on every wall. Additionally, one of the main rooms has two walls covered in portraits of all AS220 community members, acknowledging their participation and presence. One of the recording studios is named after an early youth participant of the programs. The current youth keep

his creative dream alive. Another space displays beautiful black and white photos of youth participating in political activism in the community in ways that prioritize youth voice. It feels as if youth are welcomed to engage and own almost every inch of space at AS220's downtown location, paying homage to their interests and values.

Even the hallway connecting recording studios, dark room, performance space, and offices serves as a monument to youth ownership of creativity and innovation. This area of the building—called the Indigo Hall—was completely conceived and created by the youth as part of their FUTUREWORLDS project. It is lit by a calming blue light that illuminates murals of main characters in the FUTUREWORLDS theatrical/multimedia production. Draped over these murals and across all the walls are green vines, giving one the sense that they are walking through an urban space that Mother Nature has finally reclaimed. This space represents the ways that youth have been thinking about their own racial/ethnic, gender, and young adult identities in the world through explorations of Afrofuturism, speaking out against violence and the recent murders of young African Americans, and rising through revolution toward liberation and utopia. The Indigo Hall stands as a celebration of the youth's creative efforts, as well as inspiration for future work.

AS220 Key Considerations for Space

- Recognize that 'space' is not just a physical thing, but also something that can be experienced emotionally and socially as 'room for possibility' and 'room for growth'; space is not just about 'being' but also about allowing room for 'becoming' your best self
- Invite youth to co-create the look and feel of the space
- Celebrate youth voice by displaying the ways they express themselves or participate in the community
- Celebrate youth creativity by showing their work and efforts everywhere
- Acknowledge youth participation and presence not only by displaying their self-portraits, but also by putting up photos or posters of the current and historical artists, leaders, and change-agents who come from the same communities and backgrounds of the youth
- Ensure the space feels safe to be oneself and learn to be oneself

In these ways, AS220 does not approach 'space' as just a physical concept. Space is not only about the materials, tools, and objects of an environment at AS220, but also a

careful consideration of how youth can feel like they have room for possibility, space for growth, and the opportunity to become the adults they want to be. Participation at AS220 is not just about 'being,' but also 'becoming.' As such, posters and images of the community and historical leaders that youth can identify with and look up to—such as artists and activists of color—are hung up on the walls as reminders of who every young adult can both be and become. The organization takes seriously the saying "hateration gets no toleration" that was co-developed with their youth, to ensure that all adults and youth recognize there is no room for hate or meanness in the shared space, which, in turn, allows breathing room to be oneself, express oneself, and be creative. Creating space for innovation at AS220 is not just about making the physical space exciting to be in and look at, but also a place where people can feel supported in creating artistic projects while simultaneously creating themselves.

In alignment with the organization's goal to be an "unjuried, uncensored forum for the arts" that not only provides "space to access tools, technology, and knowledge" but also offers "space to come together, collaborate, innovate, experiment, and take risks," everything is conceived with youth and not just for youth.

What Does it Lead to?

A space for youth programming that's thoughtfully designed and maintained to lead to a variety of outcomes, including:

- **Agency.** Youth taking charge of their own learning and driving the direction of programming.
- **Ownership.** Youth feeling a sense of ownership of a space and, as a result, greater commitment to the community and experiences they build within that space.
- **Belonging.** Youth feeling supported in developing their unique identities as their experiences both being and becoming are acknowledged, welcomed, and supported.
- **Curiosity.** Youth feeling safe to explore and experiment with new ideas, materials and tools.
- **Collaboration.** Adults and youth growing together in the shared space they build together.

Guiding Questions

As you consider designing your space for creativity, your organization can consider the following questions:

- Who is your target audience for your programs? How do you want to invite them into your space?
- Is your space specifically for program-use only? Or is it also for administrative and organizational purposes as well?
- Moving beyond the technological tools or digital materials, what are your goals for your programs? What is your greater mission, and how does that align with an effort to instill creativity and innovation in your space?
- How do you want to make those goals and that mission visible to the outside world through decisions you make about your space?
- Do you want program participants to feel ownership of the space and, therefore, do you want to co-create your space with program participants? If so, how do you want to invite the community into designing your space together?
- How can you avoid getting locked-in with the space you design, allowing room for flexibility and change over time as your community shifts and grows?

Tensions and Challenges

While the spaces designed by YOUmedia and AS220 may seem utopian, as the saying goes, "Rome wasn't built in a day." Creating these learning environments required experimenting with a range of ideas and possibilities until things were just right for local communities these organizations are part of. Below are various tensions and challenges to keep in mind while designing your own space for creativity:

- **Space-making is dynamic and ongoing.** As suggested above, not all spatial organization ideas work identically for all learning communities, and even in our own communities, what 'works' or 'doesn't work' toward supporting our programmatic goals can shift with each new group of youth who enter that space. At the same time, there are aspects of a built environment that generations of youth in our programs will find comforting when maintained through the years, that can therefore make a space feel more welcoming to people who have seen their older siblings or cousins or neighbors in the space before them. Thus, designing the best space for your program requires being both nimble and open to experimentation, but also cognizant of what works or doesn't work for your youth.
- **Space-making requires adults ceding control.** Relatedly, it can be a challenge to balance control of a space between adults and youth. As we see at spaces like YOUmedia or AS220, co-creating a space with youth can positively impact the sense of belonging, ownership, and innovation among youth. However, this also requires that adults are willing to listen to what youth want, giving youth opportunities to be part of decision-making processes, and relinquishing some of the control that adults are used to having of a space.
- **Balancing safety and accessibility.** Another challenge that may arise comes with tool management: how do you make tools and other materials easily accessible to youth so that they can exercise their creativity while testing ideas and building things, but at the same time ensure their safety? Designing your space to make tools and materials visible to youth so that they feel welcome to use anything and everything, yet balancing this with appropriate safety measures and proper-use tutorials can be challenging but necessary when designing space for innovation.
- **Keeping things organized.** Similarly, in spaces that encourage creativity, there is often a lot of stuff. Finding ways to organize materials so that they are accessible and visible (to inspire innovation), but also not cluttering or taking up too much work space can be tricky.
- **It's hard to let go.** Tensions can also arise around when to keep or let go of projects, decorations, materials, and tools that once served a purpose in the space, but over time have become dusty reminders of hoarding tendencies rather than creativity.
- **Not all spaces can be persistent.** Finally, not all organizations have buildings or even rooms dedicated solely for youth programs. Some organizations lead mobile programming, traveling to different locations throughout a region in order to reach their youth. Others use a single room for multiple purposes that

serve a range of youth programs and/or administrative needs. As a result, these organizations must make different kinds of choices about how they shape their temporary, shared, and/or fluid spaces to maximize youth ownership and belonging toward creativity and innovation.

The Role of Media and Technology

When designing spaces for innovation, the technological tools themselves are not the focus of attention. This is because, too often, adults and youth can get caught up in the tools alone to a point where the tools eclipse their greater purpose and stymie active experimentation and creativity. Instead, organizations that seek to design spaces for creativity must consider how to make new technology feel accessible and not overwhelming, exciting and not intimidating, useful but not the only thing to use. This can involve making sure that the process is visible in the room, not just the results of using new technology. In other words, incomplete projects that people are working on using the different technological tools can be shown in varying stages around the room. Or the different ways one can engage or make use of technological tools can be on display in different areas of the room. Youth can also be assigned as peer-teachers and mentors to help newer technology-users gain confidence with tools.

Organizations that seek to design spaces for creativity must consider how to make new technology feel accessible and not overwhelming, exciting and not intimidating, useful but not the only thing to use.

Distributing Youth Driven Media Projects via Social Media

Michael Falevits, Tracee Brock, Patricia Joyner, and Jeff McCarter - Free Spirit Media

This tool highlights approaches to supporting youth distribution of media projects via social media from Free Spirit Media. Included below are a step-by-step guide and a resource on how to choose different social platforms for sharing youth media.

Who is this Tool for?

Youth and educators in media programs interested in using social media to engage a broader audience for projects they've produced.

When can this Tool be Used?

Whenever you would like to share youth-produced media projects beyond your local networks.

What are the Ideal Conditions for Use?

Youth are provided opportunities to lead every step of the distribution process. Adults establish a creative environment that facilitates access and provides direct support and guidance from development to implementation.

Why is this Tool Relevant and Important?

Effectively sharing your media can significantly increase audience engagement, expand reach, and potentially have a much greater impact.

HOW TO DISTRIBUTE YOUTH - DRIVEN MEDIA

These steps chronicle Free Spirit Media's distribution method for digital media initiatives.

01 Write a Title

A title grabs the audience's attention and makes them want to watch. "What creative title best represents your media?"

02 Create a Synopsis

A synopsis is a short summary of your media. How can you briefly describe your media to get people interested in watching?

Example: "FSM News South visited the Obama Summit to speak with leading activists..."

03 Design an Engaging Thumbnail

How do you attract a viewer to your piece? Including a strong thumbnail can capture a viewer's interest before they've even seen the piece. You can choose an image from the video or make your own.

how we distributed the

THE OBAMA SUMMIT

video created by Free Spirit Media

bit.ly/theobamasummit

04 Share on Social Media

Upload to YouTube, Vimeo, Facebook, write a Tweet, and share on Snapchat or Instagram. What groups or organizations can you tag? What hashtags related to your topic can you include?

Example: #obamafoundation #obamasummit

05 Submit to Festivals

What festivals, video competitions, youth media websites, etc., can you submit the video to? Start your search for festivals focused on highlighting youth voices or other relevant topics at filmfreeway.com/festivals or withoutabox.com.

Example: CineYouth Film Festival

06 Utilize Partnerships

Use partnerships with relevant organizations to collaborate with special guests.

Example: Obama Foundation, ABC7

,Gary Comer Youth Center

07 Celebrate Your Work

Host a screening to celebrate your accomplishment and solicit constructive feedback. Don't be surprised when people love the work.

FREE SPIRIT MEDIA™

SOCIAL MEDIA

Choosing the right platform for your content

TWITTER

Twitter is great for adding your content to larger conversations related to your topic. Choosing the right hashtags helps people interested in your subject matter find your media. Twitter is also great for event coverage. Live Tweet your event to get the community involved. Content on Twitter has high potential to go viral, but its brief engagement period means twitter posts only appear in your audience's news feed for a short time.

FACEBOOK

Facebook's algorithm makes it especially great for sharing photos. Since there's no character limit, it's also a good spot for posts that need longer explanations. Use Facebook's event tool to plan screenings and live streaming to share the experience online. Keep in mind, as Twitter and Instagram grow in popularity, Facebook may become less popular with younger people.

INSTAGRAM

Instagram is designed for sharing photos and 60-second video clips. You can generate interest in your media by sharing compelling images on Instagram and linking back to the rest of your work. It's among the most popular social media platforms with young people so engagement is high. Be aware, Instagram posts can only be made from a phone or tablet.

TUMBLR

Blogs like Tumblr are great for helping audiences engage with your work beyond observation. Share content packaged with a story or announcement to involve the audience in your progress. Tumblr helps people interested in your media learn more about it.

SNAPCHAT

SnapChat is an application that allows you to capture live action in the moment with friends and fans. From behind the scenes moments to engaging your audience with immediate insight about your project, Snapchat is an exciting way to invite your audience into all aspects of your production.

HOW TO

RECLAIMING Digital Futures

YOUmedia's Out-of-School Digital Learning Software Guide

Taylor Bayless - Chicago Public Library

TECHNOLOGY

This tool, developed by Chicago Public Library's (CPL) Teen Services department, offers a range of software that out-of-school time educators can incorporate into their digital learning programs to support youth to move from consumers to producers of technology.

In large organizations with staff located across various locations and with varying levels of technical expertise, it can be challenging to provide comprehensive training and professional development. At Chicago Public Library, staff come to their work with varying backgrounds and expertise. Some library staff function as teaching artists and some library staff begin their work at CPL with little or no technical digital media skills.

In order to support staff across multiple locations, Chicago Public Library's (CPL) Teen Services department developed a tool to help encourage individual self-paced learning around potential technologies that teen librarians could incorporate into their branches.

As new laptops for teens were rolled out at the library, this Airtable resource was created to not only inform staff of the software available, but also to spark learning. This list of software includes descriptions, curated resources and an eventual list of programs with associated contacts that can be used by staff to help spark individual professional development and to develop new programs based on best practices. We chose Airtable, a cloud-based database tool, as the platform for this resource because it allowed us to create an intuitive, shareable and easy to update format for our information.

This tool is organized in four sections.

- Software: Descriptions of software available for teen use
- Resources: The best guides we've found on how to get started with the software available
- Programs: Program descriptions of how CPL teen librarians and mentors have used these software tools in teen programming at the library
- Contacts: A list of CPL teen librarians and mentors who have added information to this resource

All of the software on this list was selected because it supported various current program offerings and most importantly because it was open source and free. We wanted teens to be exposed to software that was analogous to professional-level software, but we also wanted teens to be able to be familiar with software that they could access at home or away from the library.

For staff who are brand new to digital media, the software and resource list is designed to provide broad familiarity with available software. For the more advanced staff, the resource list and the program areas are a way for staff to share their expertise with the CPL Teen staff community. This tool is designed to be a living document. CPL Teen staff are encouraged to submit new content to the Resource and Program sections so the tool can grow along with the growing expertise of our staff.

A truncated version of this resource has also been created to share with teen library patrons so they also have access to the full list of software available to them at their local library. In combination with other professional development opportunities, this tool is a way to foster new learning and to strengthen the Chicago Public Library's teen staff community of practice.

Access the Chicago Public Library, Teen Services, Laptop Software Guide tool here.

Guiding Perspective:

Community

Strategically link programs as well as your organization more broadly to place and local need through participation in networks and partnerships.

The approach to digital learning highlighted in this toolkit is one that is deeply situated, place-based, and most importantly, rooted in community. Rather than something abstract or technical, community-based digital learning relies on organizations developing rich relationships across their communities to support powerful learning outcomes. The resources in this section highlight how community connections can amplify and enhance activities in specific programs. Community might be thought of as the people who live in the neighborhoods where programs are based, as well as local businesses, institutions such as local schools and churches, grassroots civic groups and more. Additionally, community speaks to the professional networks of collaborators and colleagues in which an organization participates.

Being 'place and community-based' means that organizations are attentive to the needs of those they serve, aware of ongoing community challenges, connected to potential partners and able to connect youth to new opportunities beyond their own programs. Effective strategies include leveraging local relationships in order to reach and serve disconnected youth, provide inspiration and audience for media and technology projects, build internal capacity for new digital learning programs, support youth to pursue interests across organizations and connect youth to professional and higher education opportunities.

- **Reach and serve disconnected youth.**
  Partnerships with institutions such as transfer schools or juvenile justice systems can allow youth-serving organizations with digital learning programs to reach youth that often have the least opportunity. Additionally, relationships with local social service agencies can allow organizations to connect at-risk-youth to critical resources around social welfare issues such as healthcare and housing.

- **Provide inspiration and audience for youth.**
  Digital learning programs can have youth reach out to community members to identify local concerns that they can then use to form the basis for service learning projects. Through capstone events that bring in parents, partners and other local groups, community connection can mean that youth have real audiences to present their projects to for both feedback and celebration.

- **Build internal capacity to develop new digital learning programs.**
  Deeper partnerships with organizations that have specialized expertise can be an important aspect of capacity building that allows innovative programming using digital media and technology. Additionally, connection to broader community institutions can allow organizations to bring in or hire talent supporting media, technology and the arts to advance programming in these areas.

Check out our resource on School Partnerships as On-Ramps to Informal Digital Learning, highlighting AS220's partnership with a school serving youth involved in the justice system.

Read about how youth from AS220 co-create the annual community event, FUTUREWORLDS.

Read our resource on Linking Youth to Local Creative, Arts, and Technology Scenes, highlighting YOUmedia at Chicago Public Library's approach on partnering with local community members and institutions.

- **Support youth to pursue interests across organizations.** Connections with other local programs and organizations better equip educators to help youth find next steps beyond what is offered by their own organization and promotes continuous learning pathways for youth across multiple settings.

- **Connect youth to professional and higher education opportunities around digital media.** Formal and informal community partnerships with aligned institutions can support youth pathways into work and post-secondary learning. Examples of this include formal mechanisms, such as a community college providing academic credit to youth that have finished certain advanced programs offered by an organization, or more informally, such as program staff being able to recommend their youth to a local business for summer internships. Additionally, for organizations interested in directly supporting economic mobility by preparing youth for jobs in technology, media and creative sectors, partnerships with industry groups can help them to align their curricula to the kinds of technical and SEL skills employers are actively seeking.

Watch a video case example from WMCAT on Leveraging Partnerships to Support Youth Pathways in Technology.

Check out our resource on Using Collective Impact Approaches to Support Youth Pathways in Technology.

As with all strategies, the kinds of relationships organizations develop with local communities should follow from the broader goals they're aiming to achieve. But these must indeed be active strategies - just because an organization is based in a given neighborhood doesn't mean that it's intentionally building the sorts of place-based connections outlined here. Figuring out what these strategies should look like, ways to pursue them, and who should lead them are key questions to answer in efforts to create an effective community-based digital learning program.

HOW TO

RECLAIMING Digital Futures

Linking Youth to Local Creative, Arts, and Technology Scenes

Anthony Pellicone - University of Wisconsin-Madison

Rafi Santo - New York University

This resource explores how youth development organizations can leverage local creative, arts and technology scenes to connect youth to social and cultural experiences. These kinds of experiences can support interest development, learning and pathways to opportunity.

COMMUNITY

What's the Issue?

Place-based digital learning programs are situated in local contexts, often drawing on talent, resources and activities from local creative, artistic, and technology scenes. This brief looks at the ways that out-of-school time organizations 'leverage the local,' and specifically the ways that they connect youth to the social and cultural experiences of practicing professionals and institutions in their surrounding neighborhoods and communities.

In this resource, we look at a couple of examples of what this looks like in practice. We explore how the Western Michigan Center for Arts and Technology (WMCAT) brings youth into a local music awards show, called The Jammy's, connecting their participants to both people and experiences in Grand Rapids' music scene. We consider Digital Harbor Foundation (DHF) in Baltimore, Maryland, and look at the way they connect their youth participants to a vibrant local 'maker' scene, bringing their work to wider audiences. Finally, YOUmedia,

based at Chicago Public Library, leverages the wide array of cultural institutions in Chicago to bring in new programming for their youth. We then explore outcomes associated with this approach, various challenges and tips and guiding questions for organizations to consider.

What Does it Look Like?

WMCAT, based in Grand Rapids, Michigan, is an organization committed to giving their youth meaningful exposure to work as media, arts and technology creators. WMCAT employs a teaching artist model, where their instructors and staff are drawn from the local arts and technology scenes. Their studios include video and audio production, digital photography, graphic design, and video game and mobile app design. WMCAT works frequently with partners in the city bridging the learning and pedagogy of WMCAT to experiences in the community. One such experience is The Jammy's. Mike, a teaching artist with WMCAT shares about how he's connected youth in his program to the event:

WMCAT Connecting Youth to Local Professional Scenes in Grand Rapids

> *There's been one special event that we've taken the students to, the Jammy's. It's this annual event that's kind of a big deal in Grand Rapids. It's like our version of the Grammy's for local artists. The students made a CD last year that played at the local radio station, W-Y-C-E, which puts on the Jammy's.*
>
> *It's great. About a thousand people go to this event. The students brought this CD in and from that, they've now been invited to play at this year's Jammy's. The students have gone for the last three years, and WYCE has been very kind to let them go backstage and let them do interviews with the artists, have other 'behind the scenes' access.*
>
> *The whole thing has been a great connection that we've built on to now get the students out performing in public...That's really intentional because minorities are often excluded from greater participation in the culture in Grand Rapids. This lack of participation and representation is something that comes up among my peer group and younger artists. It's something they complain about. They'll say, 'Oh, we never get into the venues' or 'You're only playing white rock bands here.' I feel like this is a good chance to get the students out and connected at a very young age to disrupt that culture..."*

In addition to bringing their participants out to events, WMCAT also brings local professionals into their space with a program called Friday Flip, where local business-people come into the space to discuss the types of paths through college and industry that make sense for their profession. These talks are coupled with career field trips, where participants are taken out to see those careers in action.

By connecting youth to experiences within the Grand Rapids community, as well as bringing professionals in to share their knowledge and stories, WMCAT is helping to bridge their participants to both social and cultural capital that exists within their local context.

By connecting youth to experiences within the Grand Rapids community, as well as bringing professionals in to share their knowledge and stories, WMCAT is helping to bridge their participants to both social and cultural capital that exists within their local context.

Digital Harbor Foundation (DHF), based in Baltimore, Maryland, is an organization that is heavily focused on the 'maker' ethos. For example, the introductory course for the program is known as Maker Foundations, which focuses on areas such as 3D printing, web design, and game design. Over time, DHF has realized the unique potential of their students to work in the local tech scene in Baltimore, and they has actively connected their youth to jobs within that tech scene, as well as provided them with workplace skills to succeed in those environments. Shawn Grimes, DHF's Director of Operations, explains:

> *Fearless Solutions is a local software development company. And they usually hire two of our youth a year. The last one they had they held onto for about two years. She was one who had gone through our youth employment program, and they raved about her. And then some of the other ones are usually like smaller tech companies. I have a friend who runs a government consulting company that he's always hiring contractors for and so he's waiting for our unit to finish up. We also have a local 3D design company called Direct Dimensions. And that's one of our goals for our print shop [for more information see our resource on DHF's 3D Print Shop], to get those youth internships at the company this summer.*

Shawn himself comes from that same tech scene, and part of the inspiration in starting DHF was to connect youth in Baltimore to opportunities in the tech industry. Mary,

Special Projects Manager at DHF, describes the process of making matches between youth in the program and external opportunities:

> *It depends on the opportunity itself. Sometimes it's a more extended experience, an internship, it might be a job, something similar. There's more vetting that happens, and these are also less frequent. But we also get a lot of opportunities for like 'hey, I need this one specific thing', it might be like 'I need this website' or 'I want these awards cut out of acrylic', whatever it might be. In these cases I tap into my knowledge, and then I confer with program staff to see if there's any youth they think would be interested. We have a shortlist of people, and I'll just blast out the opportunity to them, and then follow up with everybody and their parents to see like 'hey, did you see this opportunity?' And being clear about this is the timeline for when we need a response."*

At DHF, connecting youth to the Baltimore tech scene also takes the form of connecting their youth with local events centered around technology and making. As an example, Darius, a former student who's now staff at Digital Harbor (for more information see this resource), has been managing their client-based work PrintShop for more than a year. During that time, he has grown as a manager at the same time that his employees have grown as workers. Darius himself came up through the DHF Foundations program, and parlayed his experiences there into opportunities that reached as far as being invited to present at The White House in 2016. Darius is now sharing similar opportunities with his staff, and he talks about providing space at a local maker event called Garage Fest:

> *So we had this event called Garage Fest … It's a local event. The first one was at the City Garage, not far from here. It's another makerspace. And I had youth apprentices go over there and they basically presented on their own. And we raised a couple hundred bucks [for the program]. We sold a lot of items, and we got a lot of exposure through that. And I didn't really train them for talking to people outside, but they spoke proudly about themselves.*

This was paired with several other partnerships to draw clients to the 3D Print Shop program—including working with a local hospital's physical therapy residency program to print student design projects, as well as working with a local artist to create objects for an installation that she was designing.

Local Partnerships with Cultural Institutions at YOUmedia

YOUmedia, a program of the Chicago Public Library, also brings in many practices typically associated with public library youth services. One such practice is direct partnership with local cultural and educational institutions as a way of bringing programming to their teen populations. Jeremy Dunn, Director of Teen Services at CPL, described some of those partnerships:

> *Some key [partnerships are] the Museum of Science and Industry, the Adler Planetarium, the Shedd Aquarium, the Poetry Foundation, and the Art Institute. So we're are interested in this range of cultural institutions that also provide*

programs or particular expertise. We have relationships with people in all of those institutions, and we continue to circle back to them to do different projects.

Jen Steele, the Partnerships Coordinator in the Teen Services department, expanded on YOUmedia's selection strategy, describing the categories that make community partnerships work:

> *[We look at] a number of factors: Have they worked with teens? Are they comfortable working in an less structured teen environment, such as YOUmedia? Do we have shared missions and goals? Is what we're both bringing to the table going to be mutually beneficial? Do they have staff capacity to recruit participants and run programming? I think there is sort of a misconception that, 'Oh, the library has all these teens and all I have to do is show up.' So really, we ask ourselves a lot of questions before bringing in community partners.*

In this case local organizations bring content and expertise of working artists and local professionals to youth participants. In exchange, YOUmedia uses their deep connections with their youth to help these partners expand their reach.

What Does it Lead to?

Interactions and connections to local scenes and creative communities can be beneficial for both youth, educators, and youth-centered organizations more broadly. Here are some of the outcomes that might come from thoughtful community connections:

- **Building youth social capital.** This refers to connections to individuals and organizations that allow one to gain information, find resources, and explore opportunities. For example, someone in your social network may pass along information about a job opportunity they learned about from another connection of theirs. Without your social network you may never have known of that opportunity.
- **Building youth cultural capital.** Cultural capital refers to the ability of an individual or group to act within a situation through their familiarity with the norms and expectations of a given practice. For example, if you are attending a mixer at a work event, cultural capital

Guiding Questions

As you consider how you might connect your youth to local creative, media and technology scenes, ask yourself:

- What institutions or community events are relevant to our youth and their developing areas of interest?
- Are there connections that our educators have that we can draw on to make connections to local creative, media and technology scenes?
- Do youth participants have meaningful avenues of participation in experiences we're developing in relation to the local community?
- Is there an exchange of learning between adults from these scenes and youth participants?

refers to your ability to talk to navigate conversations, talk to your peers, and demonstrate your ability within your field. This sort of deep, cultural knowledge allows an individual to make strategic moves within their field and to navigate the inner workings of an industry.

- **Youth contributions to community.** By connecting their youth to other people and institutions, youth development organizations create contexts where youth are able to engage in projects that actively contribute to the betterment of their communities.
- **Building staff social capital.** Through local connections, educators at community-based organizations gain important connections that they leverage in future projects.
- **Increasing organizational expertise.** Intentional interactions with external professionals and institutions can lead to deeper skills and knowledge for educators, increasing the overall capacity of the organization in various areas.

In the examples of organizations we highlighted we can see these forms of capital evidence themselves in a number of ways. At WMCAT, program facilitators connect youth activity to local artists, and specifically artists of color. For example, by sharing the history of black musicians in Grand Rapids, students are given the ability to act as archivists for that history. At DHF, program facilitators leverage their connections with the local technology industry to provide opportunities for their students, while also connecting youth to experiences with other makers and designers in the city. At YOUmedia, program facilitators leverage the library's traditional role as a community cultural institution to connect their youth with programming opportunities, while also sharing knowledge with others.

In all of these cases, organizations are acting as a bridge, or a broker, to a wide variety of forms of capital: economic capital through employment opportunities; social capital in the form of personal connections to local artists, technologists, and other professionals; and cultural capital in the form of modeling engagement within local creative and technological professions.

Tensions and Challenges

There are, of course, some tensions and challenges that need to be actively navigated in order to lead to the outcomes we outline above:

- **Matching participants to developmentally and socially appropriate opportunities.** Youth experiencing a mismatch can lead to negative experiences, something especially important to be aware of in fields such as media and technology, where youth non-dominant groups have been historically underrepresented.
- **Making meaningful connections.** Not all connections to local scenes are substantive, and active attention must be given to ensure that the relationships and activities that come from these connections provide real opportunities for the development of social and cultural capital, as well as authentic youth contribution.

The Role of Technology

Increasingly, connecting to local actors and scenes is not only a function of face to face interactions, but also ones that take place within the digital sphere. This might involve youth working with program educators to circulate their creative works online through social media, and involving local actors and institutions in that process (see Free Spirit Media's resource on distributing youth produced media for more information).

Connecting to local actors and scenes is not only a function of face to face interactions, but also ones that take place within the digital sphere.

Additionally, youth-produced technology projects, as well as client-services they might provide (see our resource on the topic here), act as opportunities to engage with the local community. This might involve a client-based program tabling about their services, as described above in the case of Digital Harbor Foundation's 3D Printshop, or having media projects shared at a community event, as described in the case above of WMCAT's youth having their music played at the Jammy's.

Using a Collective Impact Approach to Support Youth Pathways in Technology

Rafi Santo - New York University

Collective impact represents an approach to actively coordinate many local institutions around an ambitious goal. In this case example, we explore how a digital learning organization uses this approach to support youth pathways into technology careers.

What's the Issue?

Many digital learning organizations care about not only supporting young people to have powerful experiences in a single program, but also with engagement in future experiences beyond their own programs. For some, this pathway orientation focuses on supporting economic empowerment for youth, envisioning young people from their programs eventually connecting to well-paying jobs in technology and other creative sectors. These are sectors where non-dominant youth are traditionally underrepresented, but ones that also represent potential economic opportunity through higher wages and entrepreneurship.

However, supporting youth pathways into technology is rarely something a single organization can accomplish on its own. Pathways to opportunity don't exist within individual institutions. They require the creation of interlinked ecosystems. Achieving this vision means coordination among many organizations across different sectors, coordination that can be achieved through what are called collective impact approaches (Kania & Kramer, 2011). Collective impact efforts aim to involve multiple sectors in order to achieve commonly agreed upon ambitious goals, engagement in mutually reinforcing activities, utilization of shared data to understand efficacy, and

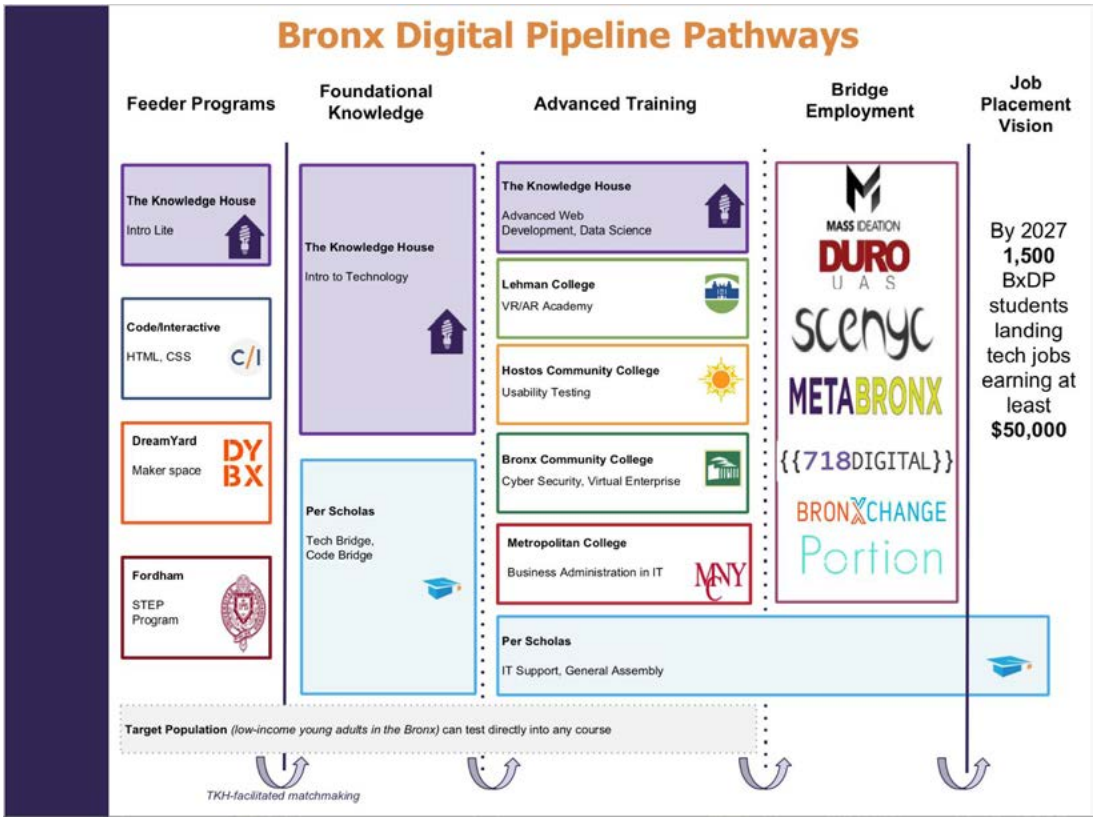
support of all of this by active stewardship of a 'backbone' organization.

To highlight what this can look like in practice, we share about the Bronx Digital Pipeline (BxDP), a collective impact effort organized by The Knowledge House (TKH). The BxDP is an effort involving over a dozen organizations in the South Bronx with a goal of supporting youth pathways towards technology jobs and a broader vision of "organizing and strengthening the Bronx's entire innovation ecosystem," as TKH puts it.

> Supporting youth pathways into technology is rarely something a single organization can accomplish on its own. Pathways to opportunity don't exist within individual institutions. They require the creation of interlinked ecosystems.

What Does it Look Like?

The Knowledge House has a goal of supporting 1,500 students from the Bronx enter tech careers by 2027. Its program offerings include introductory, intermediate and advanced classes in areas like web design, user experience/user interface design, and computer programming. However, the organization knows that it would be impossible to achieve their goals through courses alone. Jerelyn Rodriguez, the co-founder and CEO of TKH, shared, "We realized that there needs to be stronger coordination across different organizations or else our students fall through the cracks."



Bronx Digital Pipeline collective impact model aiming to support youth pathways into technology careers, achieved by coordinating partners across sectors.

This realization spurred TKH to develop the Bronx Digital Pipeline, an initiative that focuses on coordinating action with other youth development groups, workforce development programs, community colleges and industry partners. Rodriguez shared that the "goal is for each of the pipeline partners to contribute to the Bronx tech ecosystem

in its own way, by training, offering jobs, providing feedback on curricula, coaching candidates, strengthening internship networks, and granting community college credits as a gateway to postsecondary education."

Some of these partners act as 'feeder programs,' such as DreamYard and Code/Interactive, which offer high school aged programs related to technology. These programs feed into "foundational knowledge" programs, offered by both TKH and Per Scholas, that have a more substantive focus on developing hard skills in technology along with workforce readiness preparation in areas such as resume design and interviewing. These same organizations, along with a group of community colleges, then offer more advanced training to students who have gone through foundational knowledge programs, with various technology specializations in areas like project management, cyber security, virtual and augmented reality, usability design and javascript programming. At the most advanced part of the BxDP, a set of 'bridge employment' partners from industry act as internship placement settings for young adults.

An important feature of this pipeline ecosystem is the 'connective tissue' across different organizations. All of the organizations aim to actively broker young people from one part of the pipeline to the next. They also aim to share metrics that help the entire ecosystem understand key outcomes, including how many young people from a given programenter more advanced offerings, as well as how many eventually gain employment.

Additionally, industry partners that are part of BxDP give feedback on curricula and program designs to education partners to ensure skill alignment with employer needs. In order to accomplish all of this, TKH dedicated staff roles to the development and management of the BxDP, talent managers that focus on understanding the skills and interests of young people in the initiative and industry partnership coordinators that liaise with employers.

Guiding Questions

Organizations interested in a collective impact initiative, either from the standpoint of organizing one or participating in one, can reflect on a number of questions:

- Does the collective impact initiative align with the projected futures you value for your young people?
- Who are the partners whose programs either feed into or build on the experiences provided by your organization? How would you find them?
- Which staff in your organization should or can be dedicated to a collective impact effort? This includes responsibilities such as planning meetings and supervising the implementation of key strategies determined by the collective?
- What methods can be used to help stakeholders arrive at a commonly agreed upon goal for a collective impact effort?
- What routines and norms of communication can be set up in order to effectively coordinate action?

What Does it Lead to?

Utilizing a collective impact model focused on supporting youth pathways into technology can lead to a number of important outcomes that might otherwise be difficult to achieve:

- **Improved program design.** Evidence of outcomes can be gathered through data sharing about program completion and student performance within programs within the BxDP. These data can be helpful for both internal improvement for BxDP organizations as well as for pointing to evidence for funders. Additionally, stronger coordination across parts of the pipeline can help individual programs better align their offerings that are more effective in leading to future youth opportunity.
- **Informed educators.** Shared knowledge across institutions about young people's expertise and interests can help instructors understand the students coming into their programs. This data can also support staff or organizations who are placing youth in internships or full-time jobs.
- **Increased youth opportunity.** The primary outcome of this approach is that young adults are able to find opportunities at each step of the pipeline, ultimately resulting in more robust career options thus economic independence in the long term.
- **Stronger and more responsive communities.** Through the process of cross-institutional coordination, communities can form stronger relationships and thus better understandings of community needs. Ideally, this can mean that new community challenges are more quickly identified and addressed.

Tensions and Challenges

Collective approaches that support youth pathways are complex and ambitious endeavors, and those interested in designing or participating in them face unique challenges, including:

- Coordination and relationship development requires time and resources, and funders are often focused on supporting specific programs that reach young people as opposed to resources to organize broader ecosystem initiatives.
- The right partners might not all be available in a given region, resulting in gaps in a pathway ecosystem.
- Creating effective alignment across programmatic experiences involves continual tweaking, requiring a commitment to resource intensive program iteration.
- Participating organizations may have different goals and pedagogies, requiring negotiation around partner priorities and values.
- Engaging in data collection and sharing across organizations raises important student privacy issues that must be attended to carefully, aiming to maintain participants' privacy and security with goals of using data to help coordinate action.
- A commitment to continued engagement and program participation, especially at more advanced parts of a pathway ecosystem, means norms of accountability that might look different from more traditional youth development approaches that are more flexible. For example, in advanced TKH programs, students that miss more than two sessions are put on a form

of probation, and continued absences can result in being asked to leave the program. Jerelyn Rodriguez, TKH Co-founder and CEO, frames the approach in this way: “We’re going to be tough with you all because no one else out there cares as much as we do.”

The Role of Media and Technology

Technology can play multiple roles in a collective impact effort. In some cases, it is the centerpiece of program design. In others, it plays a critical part in coordinating the efforts of the entire ecosystem. For example:

- Data infrastructure can support tracking of student participation across organizations, as well as profiles of students with relevant information about their skills, interests, and life circumstances that may impact their participation.
- Data dashboards can provide snapshots of programs associated with particular organizations in the BxDP.
- TKH utilizes a technology supported ‘leaderboard’ system both within individual programs as well as across them where students gain points for areas such as program attendance, project completion, and attendance at supplemental events (e.g. hackathons and job fairs).
- TKH is aiming to develop an integrated job board system where industry partners that are part of BxDP can circulate postings for job descriptions.he system would also automatically pull relevant postings from major job sites like Monster and Indeed.

HOW TO

RECLAIMING Digital Futures

School Partnerships as On-Ramps to Informal Digital Learning

Peter Wardrip - University of Wisconsin-Madison

Schools are important entry-points for youth into digital learning experiences. This resource explores how youth development organizations can form various types of partnerships with schools to on-ramp youth into digital learning.

COMMUNITY

What's the Issue?

Building partnerships between youth organizations and schools is valuable to both parties, especially around goals of supporting youth pathways in digital learning. By bringing together key professionals in youth development and education, partnerships can exceed what one single school or organization is capable of accomplishing alone.

By bringing together key professionals in youth development and education, partnerships can exceed what one single school or organization is capable of accomplishing alone.

Youth-serving organizations can seek partnerships with schools to meet a variety of issues that can benefit both parties in the partnership. For example, working with schools is a way to help youth-serving organizations to reach a bigger and, potentially, broader audience. Also, many experienced youth-serving organizations that support out of school learning experiences hold significant knowledge about learning, from pedagogical design to facilitation techniques to assessment strategies. School partnerships with

youth organizations can create the conditions for sharing that knowledge with teachers. This could range from informal conversations to more formalized professional development opportunities.

Ultimately, forming and cultivating partnerships between schools and youth organizations reflects a broader philosophy that both sides may value. A pure, student-centered approach to learning means that we think about all the settings in which students are participants. Schools and youth organizations represent two potentially significant institutions in a student's life, and partnerships can create opportunities for deeper, more productive youth development.

In this resource, we will explore what partnerships can look like in practice, point to real-world examples, note challenges, tensions and questions, and consider the role of school partnerships to develop on-ramps for informal digital learning in out-of-school time (OST) contexts. In particular, we will consider partnerships that might exist at three different levels: school partnerships that operate at the school, district and/or administrative level, partnerships that involve working with teachers and partnerships that involve working directly with students.

What Does it Look Like?

Youth organizations seeking to build school partnerships to support digital learning in OST contexts have addressed this issue by partnering with schools at three different levels. First, youth organizations might find it beneficial to work at the leadership level whether this be the leader of a school, school district or another school management organization. Second, youth organizations can partner with teachers collaboratively supporting an educational experience. Third, some partnerships involve youth organizations working with students based at a school directly. As we will show, each of these three levels of partnership can be valuable depending on the goals of the partnership. And in most cases, partnering with one level is contingent on a partnership at another level.

Four organizations that have actively and intentionally cultivated school partnerships are the West Michigan Center for Arts and Technology (WMCAT), AS220, Beam Center and DreamYard.

Guiding Questions

As you and your organization consider school partnerships, there are some questions you might consider:

- What are the schools in my community, and how do they align, or not, with my organization's goals?
- Are there particular strategic priorities we have that school-partnerships can help us achieve?
- Based on our goals, which kind of school faculty are most important to engage with (district leaders, principals, teachers, tech specialists, etc.)?
- How can we invite school staff (leaders, teachers, or guidance counselors) to events we organize?

What it Looks Like at WMCAT

Located in Grand Rapids, Michigan, WMCAT is a youth organization that aims to create social and economic progress in people's lives and community through visual arts and tech engagement, workforce development and social enterprises. To help achieve this, WMCAT has built a long-standing partnership with their local school district. Through this partnership, the school district has provided transportation for students from district schools to WMCAT programs, eliminating a critical barrier to student engagement with their arts and digital learning programs. Through their relationships with the district, WMCAT is also able to communicate more directly with schools and students to build awareness of their programs. Finally, through this local school partnership, WMCAT has signed on to a data sharing agreement, where student data shared with the organization about student attendance and grades. This data proves to be critical for WMCAT student coordinators, who are able to understand what is happening at school for the students participating in their programs and provide necessary support. In discussing the partnership, WMCAT has noted the importance of having a champion in the partnership at the administrative level in central office to ensure continued support and communication around emerging needs.

What it Looks Like at AS220

AS220 Youth is a community arts organization in Providence, Rhode Island. For AS220, their school partnership is in a unique setting, the Rhode Island Training School (RITS), which serves youth from the juvenile justice system inside a prison. Here, AS220 staff provide direct arts-based learning experiences with youth currently incarcerated. In this way, the partnership provides AS220 with a way to reach and support particularly high needs youth who otherwise might not be able to access creative arts and digital learning opportunities. At RITS, AS220 mirrors the programming that they provide in their center, like fashion design, performing arts, illustration and media production. They see this as an opportunity to fulfill their mission of reaching all members of their community. And when the youth are released, they have an opportunity to be fast-tracked into AS220's broader programs.

Partnership provides AS220 with a way to reach and support particularly high needs youth who otherwise might not be able to access creative arts and digital learning opportunities.

What it Looks Like at Beam Center

Beam Center is a 'maker'-focused youth organization in Brooklyn, New York that enlivens students' curiosity and bridges the opportunity gap through involving youth in hands-on learning. Beam Center is involved in extensive school partnerships, many of which have emerged from network initiatives that they've participated in. One key form of school partnership for Beam focused on professional development for teachers. In these relationships, Beam Center staff partner with teachers to co-design lessons, activities or curricular units as a form of professional development, working with both principals and teachers to coordinate around their professional learning needs. A key element of working with the principal is to ensure that they are willing to provide time for teachers outside the classroom to work with Beam to learn and design projects. And then they work directly with the teachers to carry out the curricular codesign work. This high leverage model of partnership where staff from a youth development organization work with a teacher to transform both instruction and the learning experiences of the students is dependent, Beam states, on the principal's willingness to "let go and create opportunities for a change to happen in the school."

Beam Center staff partner with teachers to co-design lessons, activities or curricular units as a form of professional development, working with both principals and teachers to coordinate around their professional learning needs

What it Looks Like at DreamYard

DreamYard is a youth arts and social justice organization in the Bronx, New York that builds opportunity and pathways for teens and families through the arts. DreamYard also has extensive partnerships with schools that cut across all three levels, from leadership to working directly with students. For DreamYard, one pre-K to 12th grade school located in a community center, in particular, has offered a variety of ways to work together. For example, DreamYard teaches in programs at the school and is creating a 150-foot mural with the school. They also held a conference, Art is a Weapon, and convened the conference at the community center. DreamYard even involved a member of the community center staff in their own strategic planning process. In total, DreamYard integration of their work with the school and community center's work through partnership expanded their impact, built capacity with the partner school and built their own capacity in the process.

While all of these partnership examples are responsive to the needs and capacities of the organizations involved, it is worth stating that these partnerships serve to strengthen the work that the youth organization is already doing by reaching more youth—or different youth populations in different settings. These partnerships relied on people to people relationships between these youth organizations and school personnel.

What Does it Lead to?

These partnerships can lead to a variety of outcomes that can impact both the students and the partner organizations.

- **More responsive youth learning experiences.** Whether through sharing resources, integrating learning experiences across settings or learning from productive elements of the learning activities at the partner sites, school and OST organization partnerships can generate a higher quality learning experience for youth.
- **Bi-directional professional development.** In-school teachers and out-of-school educators can both learn a great deal from different kinds of partnership, from pedagogical approaches to simply better understanding how the varied settings youth spend their time in operate.
- **Alignment between school and out of school experiences.** This can be conducive for youth pathways to professional and post-secondary options, as well as better exploration of their interests when they're in out-of-school spaces and better integration of their interests within school spaces. While alignment does not imply compromising the integrity of what makes out-of-school learning "out-of-school," sharing data, communicating and recognizing student accomplishments in and out of school and coordinating program times can be examples of how partnerships can support inclusive youth learning and development.

Tensions and Challenges

While in principle, partnership between schools and out-of-school time learning organizations seems like a productive fit, in practice the prevalence of these substantive partnerships is less frequent. There are several reasons for this. For one, schools and OST organizations often have different goals and guiding philosophies that can make alignment difficult at times. This can range from the content being taught, the pedagogies employed and the amount of agency youth have in a given setting, to name a few.

Moreover, even though these partnerships can support the leveraging of resources on both sides, which may extend resources for programs, the hybrid nature of formal-informal partnerships can sometimes fall outside of traditional funding streams.

Furthermore, it may be necessary to be aware of the larger partnership atmosphere within the community. While it can be helpful for a school to have partnerships with multiple OST learning organizations, making sure that those partnerships are working in concert and amicably can be difficult to navigate. In addition, standard evaluation tools may be ill-equipped to help document the impact of these partnerships requiring additional time and capacity to craft new tools. Finally, partnerships can boil down to the relationships that were forged in the development of the work. When leadership changes occur or the people involved in the partnership change, it can become difficult to maintain those relationships over time.

HOW TO

RECLAIMING Digital Futures

Not just a Flyer: Rethinking Youth Recruitment into Out-of-School Making, Media and Computing Programs

Jean Ryoo - University of California, Los Angeles

Recruitment isn't just about getting numbers, but instead is an opportunity to match youth to experiences that are 'good fits' in terms of their interests and identities. This resource explores diverse recruitment strategies around digital learning that focus on 'finding fit'.

What's the Issue?

A large part of youth success in programs depends on ensuring that their visions, interests, and goals are well matched to the various programs offered by an organization. And this successful matching begins as early as recruitment.

Decades of experimentation with recruitment in various organizations has taught us that successful recruitment requires more than just putting flyers out in public spaces. Recruitment flyers depend too much on youth being at the "right place at the right time."

This resource describes how organizations like The Knowledge House, AS220, Beam Center, and the West Michigan Center for Arts and Technology (WMCAT) successfully recruit youth into their programs over time.

Organizations may achieve greater success in recruitment and retention of youth in their programs through different methods that build on:

- Application processes to find the right fit
- Developing community partnerships for recruitment
- Interactive events or showcase performances
- Social media

What Does it Look Like?

The examples below describe how recruitment can take many sophisticated forms that improve the match between youth and programs, while ensuring both youth and organizations are on the path to pursuing their unique goals.

Application Processes to Find the Right Fit

At The Knowledge House, a non-profit education organization focused on youth employment in the tech sector, all youth undergo an application process to enter their programs. However, application processes are not meant to deny youth access to learning opportunities. Instead, applications are developmentally oriented in order to: 1) help the organization understand what knowledge/skill supports youth may need upon entering their programs; 2) match youth to the appropriate programs for their skill levels; and 3) create enough of a barrier to entry for youth so that they can learn how to remain resilient during application processes while demonstrating their degree of interest/commitment to programs.

Regardless of the course level at The Knowledge House, all interested students have to complete a short essay application. This allows youth an opportunity to share the personal interests driving their involvement that are important for educators to know about. For the more advanced courses, the application process becomes more rigorous to not only ensure a level of commitment to the program upon acceptance, but also to test for specific knowledge and skills that students will need to excel in these advanced courses. If youth do well on their short essay applications, they are invited for a phone interview and an in-person logic test. Depending on the course, these tests may ask questions about how youth use technology in their free time (e.g., app use, social media use, etc.), or explore youth's persistence around challenging problems, or even ask youth to create a website or perform specific technology-based tasks to understand their entry-level abilities specific to advanced courses. Then, depending on the interests youth have expressed in their application process (e.g., such as a passion for video games or programming or finances), The Knowledge House staff will pitch different programs to the youth to best match their needs.

Depending on the interests youth have expressed in their application process (e.g., such as a passion for video games or programming or finances), The Knowledge House staff will pitch different programs to the youth to best match their needs.

At AS220 Youth, an arts and social justice education organization, youth undergo

Guiding Questions

Consider these questions when developing your recruitment strategies:

- Who are the youth you want to see in your organization, and what are their personal interests, goals, concerns, etc.? How can you connect your organizational programs to those unique interests, goals, and concerns?
- How can you use the social networks of the youth already in your program and across your organization to reach new youth who could benefit from what you have to offer?
- What types of showcase events and performance opportunities can your organization support that might organically draw in new youth to your programs?
- In what ways can application processes for your organization's programs support finding the right fit for new youth without discouraging participation?

an initial application process as well, but simply as a starting point for entering the organization and getting involved with their first program. Similar to The Knowledge House, this application process is helpful for the organization to understand youth's personal interests and goals so that the organization can better connect youth to programs. Youth are interviewed one-on-one following submission of applications, and AS220 staff ask questions that help match youth to the programs that might best meet their needs. Youth are then welcomed into the organization through the age of 21 years, without having to complete another application during their time in AS220.

Partnerships for Recruitment

AS220 Youth also recruits youth through partnerships with local schools and organizations, including schools for young parents, juvenile detention centers, youth arts collectives, afterschool programs, and more. Through AS220's programs during the school day and afterschool, youth get a taste of what is available at AS220 in hands-on workshops or field trips to AS220 studios. These bite-sized experiences create organic ways where youth can be inspired to get more deeply involved with AS220 programs. AS220 also partners with Family Services social workers and caseworkers around the city who are supporting youth in the foster care system, juvenile justice system, or who are teen parents. These social workers bring youth to AS220 to get tours of the space, which quickly opens the door for youth to sign up for programs and get involved in the AS220 family. AS220 also hangs youth art at the local juvenile courtroom so youth moving through that space can learn about the programs AS220 has to offer to them. In these ways, AS220's partnership recruitment approaches seek to intentionally find ways to share their programs with youth who have too often been given the least opportunities to learn and thrive.

In another example of how partnerships can support recruitment, WMCAT has a close relationship with Grand Rapids Public School System to ensure recruitment across all the high schools in the city. As a result of this partnership, the schools provide WMCAT with access to: 1) in-school recruitment opportunities (e.g., lunchtime recruitment, classroom presentations, etc.); 2) event recruitment opportunities (that allow WMCAT to meet families, parents, legal guardians, siblings, etc.); 3) paper recruitment opportunities (e.g., announcements or program efforts featured in quarterly newsletters, etc.); and 4) electronic recruitment opportunities (e.g., sharing about WMCAT in weekly E-newsletters and bulletins that go out to all public school families). After students learn about WMCAT program opportunities, they are encouraged to complete a paper-based application form that must be submitted in-person. This is because WMCAT learned that encouraging students to sign-up for programs online often resulted in more students applying than actually showing up, because it was easy to complete a form online without committing to actually going to WMCAT. However, when youth bring their applications to WMCAT in-person, they are provided an opportunity to tour the space, learn about programs that best match their interests, and gain that little bit of self-confidence and curiosity needed to follow-through with the application process. During this initial visit, youth also gain insight into the various programs offered with tours of the various art studios and learning spaces. The school district continues to be an important partner for this aspect of WMCAT recruitment, because they also provide transportation to/from WMCAT's programs for youth at the high schools so that they can submit their initial applications and attend WMCAT programs. Thus WMCAT's partnership with the public school system is crucial to their recruitment and retention process.

Public Events for Recruitment

At AS220 Youth, capstone performances of their various programs are also an important part of their recruitment process. The Zu Krew—a youth performing arts and music group that formed at AS220—does a large number of performances in the community, in addition to sharing about their work through radio interviews. The AS220 theater troupe's performances also draw in a range of people to the organization. And the digital arts and apparel program youth run regular events, such as pop-up shops where they showcase and sell their work, attracting a large number of new youth into AS220. In previous years, AS220's monthly open-mics were also a space that resulted in effective recruitment into their programs. The organic ways that youth learn about AS220 through word-of-mouth among peers is now a more intentional recruitment process for the organization through these showcase events. When youth unrelated to AS220 get a chance to see other youth shine and see the final product of working through performing arts, music, poetry, digital arts, and other programs, they get the clearest sense of what it can mean to be involved at AS220. And AS220 staff ensure that information and applications are easily available to youth attending their events and performances, building on the excitement and interest of young audience members.

Beam Center, a 'maker' focused organization based in New York City, recruits some of their teen youth at local schools through interactive workshops, where youth create projects in less than an hour that give them a taste of the types of activities they can engage in through Beam's programs. In these workshops, Beam Center educators give a quick description of their programs with photos illustrating what they have to offer, and then youth create projects

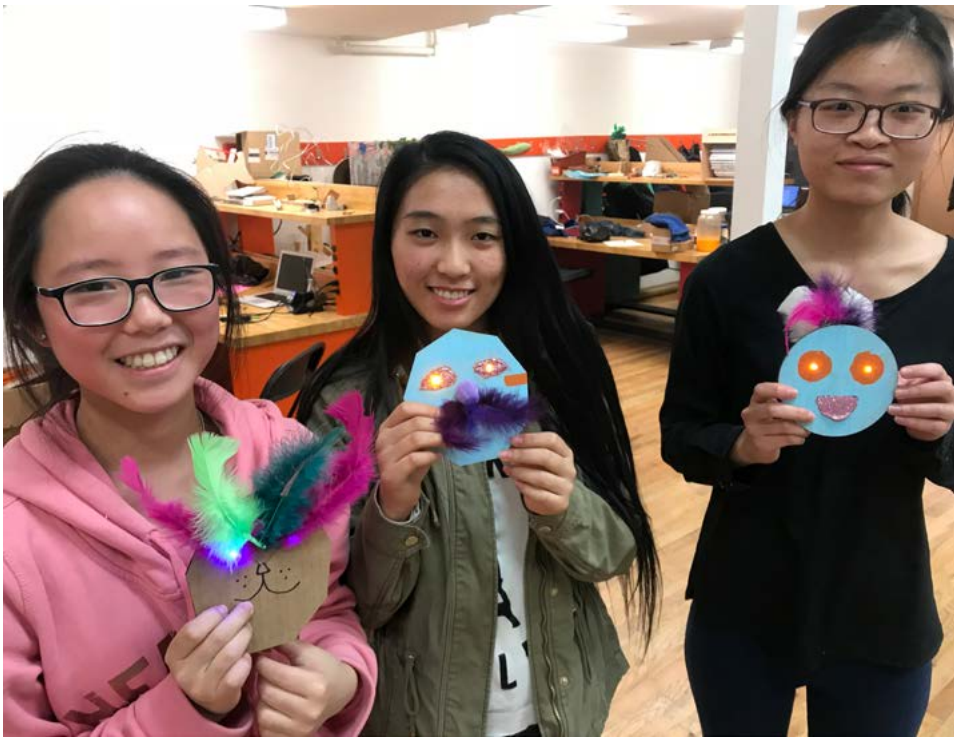
WMCAT learned that encouraging students to sign-up for programs online often resulted in more students applying than actually showing up, because it was easy to complete a form online without committing to actually going to WMCAT. However, when youth bring their applications to WMCAT in-person, they are provided an opportunity to tour the space, learn about programs that best match their interests, and gain that little bit of self-confidence and curiosity needed to follow-through with the application process.

like the 'Circuit Mask' that involves using cardboard for the head, two LEDs for the eyes, and wires connecting the LEDs to a 3V battery on the back of the mask. Youth get the opportunity to learn how to safely solder their circuits—which works well for exciting youth interest since soldering involves building trust with your partners while using a 750º F soldering iron together. These types of hands-on recruitment activities are critical for gaining youth interest since presentations alone do not fully illustrate the joy and exhilaration youth may feel when physically creating something. Additionally, ensuring that there is an educator partner or advocate in the school where Beam Center conducts these recruitment workshops—partners/advocates who can recruit potentially interested students to join the workshop and follow-up with youth after the workshop—helps cement the engagement formed through the experience and the follow-through for youth to apply and visit Beam Center.

During Beam Center's recruitment events, youth get the opportunity to learn how to safely solder their circuits—which works well for exciting youth interest since soldering involves building trust with your partners while using a 750º F soldering iron together. These types of hands-on recruitment activities are critical for gaining youth interest since presentations alone do not fully illustrate the joy and exhilaration youth may feel when physically creating something.

Social Media for Recruitment

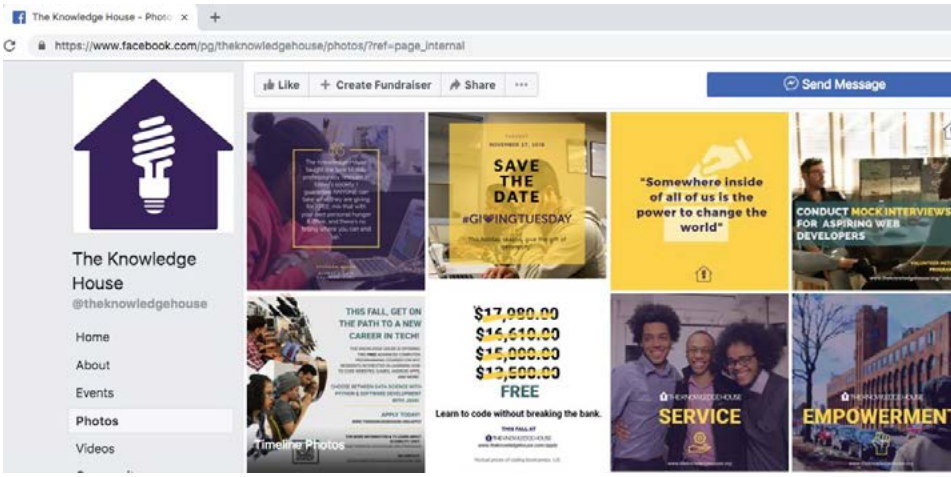
Not surprisingly, social media platforms—Instagram, Facebook, Twitter, etc.—serve as a valuable means for recruiting youth. The Knowledge House recruits using their student and teacher networks to ensure that new people have opportunities to get involved in their programs. Employing a full-time Special Projects and Events Coordinator who can manage all marketing and outreach efforts as well as event coordination, The Knowledge House is able to more effectively place ads as announcements on their various social media pages. This strategy has served useful to both recruiting new students and encouraging current students to apply for new programs coming up in the organization.



Beam Center Circuit Masks

What Does it Lead to?

Experimenting with recruitment in the targeted ways described above can have important long-lasting impact on organizations, including:



Examples of The Knowledge House's Facebook Recruitment Efforts

- **Attracting new youth into programs** who have had little to no previous access to out-of-school learning opportunities, but can truly benefit from what organizations have to offer.
- **Building capacity of partnerships** that out-of-school time organizations have with other institutions and schools to be even better at serving youth.
- **Ensuring effective matching** so that youth not only sign-up for programs, but that they are good fits with the programs that will best meet their interests and learning needs so that they can be the best they can be.
- **Improved retention rates** through more informed youth-to-program matching during recruitment.

Tensions and Challenges

The following tensions and challenges should be considered when developing specific recruitment strategies:

- Communities have unique histories and cultural practices that shape the ways people interact, find new information, build social networks, etc. As a result, youth in different communities have varying interests and concerns that reflect their unique cultural-historical pathways and contexts. Organization leaders must seek out an understanding of what those unique histories, cultural practices, interests, and concerns are for youth in order to build the best recruitment strategy that will catch their attention.
- Organizations serve different kinds of purposes driven by different visions and missions. Some of the recruitment methods described above may not match what you have to offer or how your organizations are structured (e.g., drop-in center vs. long-term programs, etc.). Finding the best recruitment strategy related to organizational goals and mission is important for ultimate success.
- Not everyone has the capacity or time to hire marketing employees, lead recruitment workshops, etc., so considering what is the most high-impact given the resources at hand is critical.

The Role of Media and Technology

Media and technology can be central to recruitment strategies in a digital world. Many youth participate in social media, and recruitment announcements through these platforms can be effective for attracting interest or attention. At the same time, media or technological tools can be valuable ways to excite youth in the context of interactive events, performances, or workshops used for recruiting. Ultimately, the most powerful way to recruit youth can be when youth see their peers excelling at expressing themselves through the use of media and technology in our unique program contexts.

Media and technology can be central to recruitment strategies in a digital world. Many youth participate in social media, and recruitment announcements through these platforms can be effective for attracting interest or attention.

Guiding Perspective:

Capacity

Ensure that your organization hires the staff and develops the program improvement structures that effectively support your vision of digital learning.

In considering how organizations can engage in creative, robust and opportunity-focused programming around digital learning, a central issue is staff and organizational capacity. Capacity is not only the skills that educators have and what kinds of programs they can carry out. Capacity includes but goes beyond what any individual staffer is able to accomplish. It encompasses the whole organization as a collective that learns and improves. In thinking about capacity, we're concerned with questions like: What kinds of staff roles are needed to ensure that young people are able to access opportunities that deepen their digital learning pathways both within and across an organizations? What kind of staff are needed to support youth futures with digital media? What forms of professional learning might an organization envision to effectively implement these programs? What kinds of structures are necessary to develop and improve program pedagogy?

Developing robust digital learning programs that connect youth to future opportunities presents an additional set of challenges. Depending on what kind of staffing model is in place, frontline educators may have more expertise in technology, creative media and the arts and less in youth development, or vice-versa. Additionally, a focus on connecting youth to future opportunities around digital learning pathways both within and beyond a given organization's programs requires rethinking staff roles to include ones that haven't traditionally been part of informal education organizations.

The resources we share in this toolkit highlight a number of effective practices around building capacity for digital learning, including implementing peer-to-peer professional learning structures, creating data routines to support programs, hiring frontline staff that span multiple professional worlds, and developing new staff roles that explicitly focus on connecting youth to digital learning pathways.

- **Implement peer-to-peer professional learning structures.** More traditional 'one-off' professional development workshops from external providers are just one element within broader strategies that effective, place-based digital learning organizations employ. Peer-to-peer professional learning approaches leverage existing knowledge within organizations, position staff as experts, help an organization better understand how their colleagues can support them, and support processes of continuous learning and sharing focused on developing and improving programs.

Read our resource on Supporting Peer-to-Peer Professional Learning in Informal Education Organizations.

- **Create data routines to support evidence-based improvement.** Instead of using data to solely report on outcomes after programs end, organizations can build capacity and improve instruction through using ongoing continuous improvement data. Regular data reviews allow staff to come together to see trends within ongoing programs, identify struggling youth and troubleshoot issues on the fly.

Read a case example on How The Knowledge House uses Data Routines to Improve Informal Digital Learning Programs.

- **Hire frontline staff that span multiple professional worlds.** Implementing effective digital learning programs calls for staff that are capable in both creative and technology disciplines as well as educational practice. Additionally, staff with backgrounds that span multiple professional worlds, including those linked to arts, media and technology, can leverage their social capital in order to enrich programs and create opportunity for youth.

Read our resource, Why Teaching Artists?, that explores the affordances of having staff with diverse professional networks.

- **Develop new staff roles explicitly focused on connecting youth to digital learning pathways.**
  A commitment to supporting youth pathways in media, arts and technology can require the development of new staff roles. These can include roles focused on youth case management, talent management and partnership coordination with industry and post-secondary sectors. These roles would explicitly focus on ensuring that youth have opportunities to engage in connected, continuous and long-term trajectories of learning around digital futures that extend beyond a single organization's program offerings.

Read our resource on how to think about Educator Capacity to Support Youth Pathways in Media & Technology.

HOW TO

RECLAIMING Digital Futures

Peer-to-Peer Professional Learning around Informal Digital Learning

Jean Ryoo - University of California, Los Angeles

Digital learning programs require educators that have diverse skills, spanning the technical and the pedagogical. We explore how organizations use various peer-to-peer professional learning approaches to foster cultures of inquiry and knowledge among their educators.

What's the Issue?

Many informal education organizations have been lucky enough to find educators with a range of expertise as artists, musicians, digital media gurus, youth advocates, and more. But how do we ensure that the person we hired for web design skills also understands how to weave in social and emotional support into every lesson in ways that reflect our organization's goals? Or how do we help the talented music teacher keep abreast of advancements in technology so that our youth benefit from both her understanding of music and new digital learning experiences? And, most importantly, how do we provide opportunities for informal educators to continually grow through professional learning experiences that not only allow them to be the best teachers they can be, but also keeps everyone in the learning community excited about our shared work?

How do we provide opportunities for informal educators to continually grow through professional learning experiences that not only allow them to be the best teachers they can be, but also keeps everyone in the learning community excited about our shared work?

Out-of-school educators have too often been de-professionalized by harmful stereotypes that frame the afterschool educator, the librarian, the teen facilitator, or the community artist as 'babysitters' simply there to 'entertain' youth, but not necessarily play substantive roles as teachers and mentors. Those who actually work in informal education contexts know that these characterizations are both offensive and wrong. Providing opportunities for peer-to-peer professional learning can help counter these stereotypes while supporting informal educators' growth in their teaching practice.

This resource explores how peer-to-peer professional learning experiences can be invaluable for supporting informal digital learning that aligns with organizational missions/visions. Through examples from DreamYard, AS220, and The Knowledge House, this resource explores various formats of peer learning that can happen in informal learning organizations, the impacts this can have on educators and organizations, the tensions and challenges for such work, and the role of media and technology in professional development contexts that support digital learning for both adults and youth.

What Does it Look Like?

Peer-Led Pedagogy Groups

At DreamYard, a community-based organization focused on arts and social justice in the South Bronx, a variety of peer-led learning groups support staff to learn together about new topics relevant to their work and/or share teaching approaches.

In one professional learning structure called the DreamYard Learning Community, full-time staff organize and lead monthly meetings for one another where they can establish shared ways of understanding what racial equity means, and how to work towards racial equity at DreamYard. Educators collaborate in teams to prepare for these meetings, choosing readings to share and discuss (e.g., articles, video clips, news, etc.) around topics such as sexual orientation, immigration, housing and transportation and other issues that relate to their youth's everyday experiences in a racialized world, as well as to their own interactions within the organization. These meetings last 2-3 hours, and all staff have opportunities to organize and lead the meetings throughout the year. One important aspect of these peer-led meetings is that staff are collaborating across programs, and working with others in the organization who they might not otherwise learn from and interact with.

Peer-to-peer professional learning can take on a variety of goals and structures including:

- Peer-led pedagogy groups
- Coaching
- Digital documentation of pedagogy
- Peer-to-peer teaching practice
- Group deliberation about student support

Another approach DreamYard has developed, more focused on supporting part-time teaching artists, is called the Social Justice Pedagogy Team. This group focuses on how social justice relates to program pedagogies, and specifically around how to use social justice frameworks toward DreamYard's core themes: Create, Connect, and Empower. The Arts Center's teaching artists as well as administrative staff engage in 3-hour meetings, occurring 5-6 times per year. These meetings allow for teaching artists across the programs to share community building experiences and engage with guest speakers. Additionally, cohorts of peer groups meet in between these meetings to discuss their work and classes together, which are shared back with the rest of the community by the 3rd or 4th meeting of the year. One or two sessions and/or projects a year focus on how digital learning can intersect with social justice pedagogy, as teaching artists are introduced to various digital learning tools that they can begin to integrate into their own work towards the creation of digital portfolios, blogs, and other forms of digital storytelling.

For example, The Sankofa Create Project focused on providing opportunities for people of color (educators and youth alike) to control their personal narratives and histories using a digital platform. This project sought to teach educators and youth about ways to counter negative stereotypes and harmful depictions of people of color that are created when their stories are taken up and filtered through lenses that they did not choose or produce. Teaching artists at DreamYard would develop lessons based on the Sankofa project idea, implement them with students, then digitally document the projects created by youth to share back with one another. By creating "digital narratives for Black and Brown posterity," teaching artists and subsequently their youth could learn to use digital tools toward creatively sharing their own and/or students' stories in ways that were socially just.

Coaching

In parallel to these Social Justice Pedagogy Team meetings, teaching artists at DreamYard experience coaching that connects the meeting themes to lesson-development and program practice. Coaches—who are or have also been teaching artists—observe the program classrooms three times a year, offering feedback on what they saw as well as helping their peers think through ways to build social justice pedagogy themes and digital learning into their lessons. For example, one year DreamYard focused on media literacy and community in the "Connect Project." Educators created a lesson or a series of lessons that explored, interrogated, and investigated questions such as 'What is community?' or 'Who and what do I care about?' 'How do we create a space where people are listening

Guiding Questions

While building peer-to-peer professional learning opportunities for educators in your organization, you may want to consider the following:

- What is your organization's mission and values? To what degree and how do you want your mission and values to be a through-line in your teaching staff's professional development?
- Are your teaching staff isolated from one another? Or are departments somewhat siloed within your organization? How can you build overlap in teaching staff's work hours so that they can interact and support one another?
- What are the digital tools that you want all your staff to gain comfort with, so that they can build these into their own lessons and pedagogy? What are the digital tools that staff are excited or curious to learn about?
- Who are the natural leaders in your organization who would be excited to help plan and execute a peer-to-peer learning plan for your teaching staff?
- What pedagogical practices do you want your educators to gain fluency with, regardless of the media or technology?

and being heard?' or 'What builds and breaks down community?' Digital tools were incorporated into these projects, and educators also identified research or theory that they felt related to the content or structure of their projects. Coaches supported educators in developing these projects, that were then presented to peers.

Digital Documentation of Pedagogy

DreamYard teaching artists also work on annual projects where they document and share the work they are doing in their classrooms with the larger teaching community within the organization using digital tools. This supports further peer-to-peer learning and counters the potential siloing of various educators in their specific areas of expertise. For example, one year DreamYard teaching artists worked with high school teachers and Parsons School of Design faculty to understand how best to support and create digital learning portfolios. Educators created their own blogs to document their classes and support young people in creating blogs and slideshows as well that documented their learning processes. Through this work, they developed a cyclical Digitize-Organize-Publish approach to explaining the digital portfolio development process. This digital documentation approach had a two-fold purpose of allowing learning to happen across peers in the organization about what other teaching artists were doing in their classrooms, but also for teaching artists to, through the process of digitally documenting their practice, extend their individual learning with digital tools over the course of the year that had recently been introduced to them in shorter workshops.

A digital documentation approach allowed learning to happen across peers in the organization while also supporting teaching artists to extend their individual learning with digital tools.

Peer Observations of Instruction

At AS220, educators improve their pedagogical skills through a two-week long experience where they practice teaching lessons in front of their peers. Reflecting together on student engagement or lesson structure, educators offer feedback after experiencing each other's workshops. This provides an important opportunity for educators to not only learn about each other's approaches to teaching, but also offers educators an opportunity to empathize with the experiences of their youth when put in the position of workshop student vs. workshop educator. Especially for educators newer to the organization, this type of experience offers a way to not only practice new lessons or ideas while gaining the input of other experienced educators, but also begin building a learning community of educators who can trust each other for support and input on classroom or workshop contexts.

Group Deliberation about Student Support

At the The Knowledge House, whose program model aims to support deep development of technical skills and advancement into more advanced programs, program educators both strategize and learn from each other in weekly instructor meetings that are focused on discussing specific students. The weekly meetings are an opportunity for instructors to talk through challenges that students are experiencing,

be it in terms of grasping certain concepts, or with completing work or consistently showing up for programs. In the meetings, instructors meet with each other, along with a program director, to discuss specific cases, and then strategize around how to change their approaches to support struggling students. In the process, instructors can not only decide on new tactics, but expand their pedagogical repertoire by hearing from their fellow educators.

Through group deliberation, instructors can not only decide on new tactics, but expand their pedagogical repertoire by hearing from their fellow educators.

What Does it Lead to?

Across the various organizations, peer-to-peer professional learning gave educators opportunities to collaborate while simultaneously learning from one another. This had many important positive impacts, including:

- **Increasing educator self confidence.** When educators have the opportunity to lead professional development, offer advice to colleagues based on their own practice, gain comfort with new digital tools while documenting their own teaching, or try out lessons with fellow educators, they can gain new pride, excitement, and confidence in their unique art of teaching. This, in turn, can be an important stepping stone to further professional growth and leadership that supports the goals and visions of our organizations.
- **Decreasing staff turnover.** Your organization may experience fairly high turnover rates for teaching staff. This may be because teaching positions are part-time and thus employees are already juggling several jobs to make ends meet. Or employees may be in school at the same time that they work for your organization, or have other long-term career goals in mind beyond teaching for your organization. While you may not see impacts on staff turnover immediately upon implementing peer-to-peer learning opportunities for your teaching staff, offering these types of professional developments may gel your organizational community in ways that can slow the vicious cycle of staff coming and going from your organization. When educators' peer-to-peer professional learning is treated as a priority, organizations are signaling to their staff not only that they expect their educators to continue growing in their

pedagogical skills and practice, but that they also believe in educators' long-term contributions to the organization and youth community.

- **Professionalization of educators.** Offering educators opportunities to learn—and specifically to learn from one another—brings the focus back on how every educator has a wealth of knowledge that they offer to our communities, and how all are professionals growing in their practice. Peer-to-peer professional learning opportunities help support the argument that our educators are, in every way, professionals.
- **Increased comfort with digital tools.** When specifically embedding digital experiences as mechanisms to facilitate learning within peer-to-peer professional development, educators can gain the dual benefit of improving their pedagogical practice with peers, while also learning how to use new digital tools. Importantly, peers can then serve as a valuable resource to one another in gaining increased comfort with new digital tools, and those educators in the community who have the greatest comfort or skill with specific tools can become the leaders that others can turn to when in need of help.
- **Breaking down organizational silos and increasing educator social capital.** When organizations support peer-to-peer professional learning, educators gain better knowledge of who knows what in the organization, what different areas of programmatic activities look like, and generally form stronger relationships outside their immediate teams. This increase in social capital across an organization, with attendant trust and understanding of fellow educators, can support a more robust, nimble and coordinated organizational culture.
- **Improved alignment with organizational values and mission.** Peer-to-peer professional learning opportunities that keep organizational values and mission at the center of activities (for example, how DreamYard ensured that core social justice values were the organizational theme for professional learning experiences, regardless of format) can ensure that educators are not only building their pedagogical skills and comfort with digital tools, but also seeing how their work aligns with the larger goals of the organizational community.

Tensions and Challenges

Professional development in informal learning contexts can often be an afterthought given the many other needs of an organization. While many may want to support the professional growth of staff beyond initial onboarding training, there may be roadblocks limiting the degree to which an organization can organize and even make time for professional development. These include:

- **Time.** It may feel like there is never enough time available for professional development. For part-time teaching staff, it may feel impossible to make room in their schedules for anything extra beyond planning and running programs. For others, professional development may feel like a waste of time and unrelated to their actual work.

- **Resources.** Professional development can often feel too expensive to build into one's organization. Hiring consultants or full-time staff to focus on designing and implementing professional learning opportunities for staff can be daunting, especially at the start. Paying educators for attending PD can also feel like an additional cost that wasn't originally budgeted for. If there isn't a champion for supporting growth across the organization, it may feel like there are not enough resources (human and monetary) available to build up a professional learning program for staff.
- **Organizational Culture.** It takes time to develop cultural norms in an organization that value putting time and resources toward professional learning. Team members may not initially understand why they should devote extra minutes in the day to attending a workshop or organizing a workshop or watching a colleague teach. Others may feel uncomfortable opening their programmatic spaces to other educators in the organization, with fears of being negatively judged.

Peer-to-peer professional learning may not initially seem like an easy approach to integrate into your organization—due to these time, resource, and cultural constraints—and positive results may not be visible during the first or even second year of such an endeavor. However, while the time/resources investment may seem great in organizing professional learning opportunities at the start, the long-term investment is minimal compared to the growth your organization will see through such efforts. We believe it is important for organizations to have staff who dedicate time to aligning organizational missions with professional development goals. Supporting your staff to be part of that effort through peer-to-peer learning opportunities can be a positive means for teaching staff to not only improve their own practice, but also the overall health of your organization.

While the time/resources investment may seem great in organizing professional learning opportunities at the start, the long-term investment is minimal compared to the growth your organization will see through such efforts.

PERSPECTIVE

Educator Capacity to Support Youth Pathways in Media & Technology

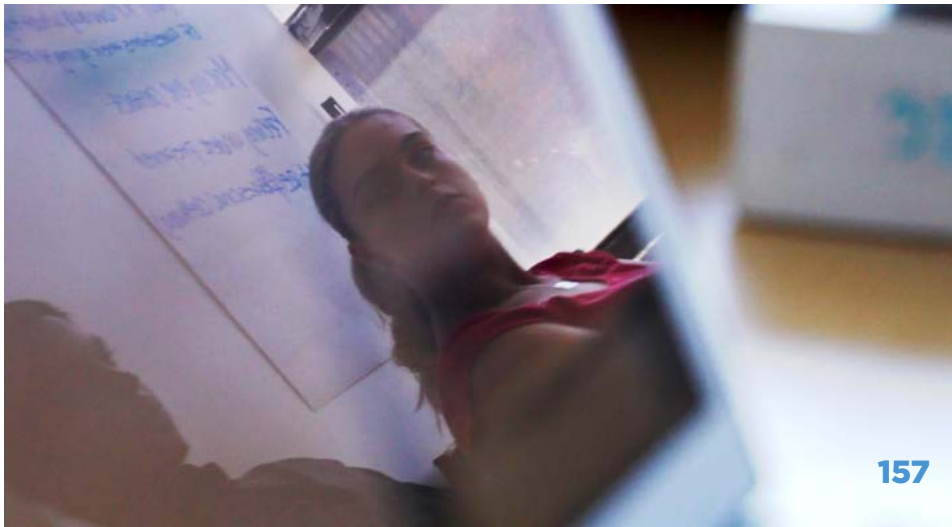
Peter Wardrip - University of Wisconsin-Madison

To support youth futures in media and technology, youth organizations need to not only be purveyors of knowledge, but be able to directly connect youth to opportunity. This resource explores how organizations build capacity for educators to become 'learning brokers.'

What's the Issue?

One focus of many youth organizations today is to create opportunities for the youth they serve to deepen their interests and expertise through digital media and technology. To do this, one approach is to create ways for youth to figuratively travel along interest-based pathways to professional and community opportunities that take place in various settings outside the youth organization itself. In doing so, these youth organizations are often responding to shifting opportunity pathways locally and nationally. For example, the current labor market has become more precarious with the rise of contingent or "gig" work. Moreover, there is recognition of declining wages and increased automation in the workplace that might take the place of human work.

In addition, the post-secondary trajectories of young people are becoming more and more uncertain. For example, the cost of college is exponentially increasing, with completion rates at community colleges continuing to remain low. And while emerging fields in technology and creative media may offer new chances for work, the entry-points for these fields are less apparent than more established sectors. To address this, youth organizations are developing



culturally relevant, community-rooted and place-based learning programs that not only build skills and social capital with youth, but also directly support pathways to these opportunities.

> Organizations must focus on the capacity of their educators to be strong connectors, or 'learning brokers.'

But to do this well, organizations must focus on the capacity of their educators to be strong connectors, or 'learning brokers.' In this resource, we consider what it means for educators to have capacity around supporting youth pathways in media and technology. In particular, we will look at the evolution of professional roles in youth organizations, the practices that practitioners in out-of-school time (OST) learning organizations employ in these organizations and the roles that network participation plays in the work of practitioners. Ultimately, the youth pathways have been identified by many as both a means to greater outcomes as well as an end unto itself. This brief seeks to provide some practical examples to transform or reorganize an organization in order for staff to support youth pathways.

What Does it Look Like?

Youth organizations seeking to support youth opportunity pathways have been found to address this issue in three different but related ways. First, they've shifted the professional roles played by front-line staff to include responsibilities that directly support youth pathways. Second, they focus on specific youth development practices that their educators engage in to support the development of pathways. Finally, they actively consider what networks their educators participate in so that they can be more effective learning brokers with greater knowledge of what opportunities are out there.

Two organizations that have actively and intentionally sought to support youth opportunity pathways in media and technology are the West Michigan Center for Arts and Technology (WMCAT) and The Knowledge House (TKH). Located in Grand Rapids, Michigan, WMCAT is a youth organization that aims to create social and economic progress in people's lives and community through visual arts and tech engagement, workforce development and social enterprises. Similarly, in the Bronx, New York, The Knowledge House is a youth organization that works to develop an education to tech employment pipeline for young adults in low-income communities.

One of the most important ways that youth development organizations have addressed the need to support youth pathways is by creating new, dedicated roles that focus on the issue.

At WMCAT, educators in the role of 'student coordinator' don't run any programs themselves, but they are the ones that think most actively about making sure current youth participants get to WMCAT programs and are connected to future professional or post-secondary opportunities. They're supported by the data-sharing agreement that WMCAT has with their local school district, which gives student coordinators insight into how their youth are doing in terms of attendance and grades.

At The Knowledge House, the organization has put into place two key roles that support youth pathways, specifically oriented towards the organization's goal around entry of low-income youth into the tech sector. An Industry Partnership Coordinator actively works to develop and manage relationships with local tech companies where graduates of TKH can get placed in internships and full-time jobs. And a Talent Manager focuses on understanding the current group of youth participants in TKH programs, noting student interests, their levels of expertise, and what might be good opportunities to connect them to that are a good 'fit.' The Talent Manager is supported by a strong data infrastructure at the organization that has data on student interests and program participation, and this person works actively with the Industry Partnership Coordinator to help match students to various opportunities with the organization's employment partners.

New Pathways-focused Educator Roles

Effective organizations also have existing educators incorporate pathway-supporting practices within their pedagogy.

Incorporating Pathway-building Practices into Programs

In addition to new roles, effective organizations also have existing educators incorporate pathway-supporting practices within their pedagogy.

For example, WMCAT educators explicitly connect youth participants with local companies through field trips in order to illustrate what work is like in the creative sector. While this brokering of connections was never explicitly referred to as a 'career trip,' these opportunities sought to expose youth to professionals in their community and ask the question, 'How did they get there?' These experiences enable the participating youth to imagine themselves within the context of specific professions and specific professional settings.

In addition, WMCAT educators try less formal approaches. For example, they let their students know about the recording studio resources available at the local library. This is not a feature of the program, but rather simply connecting the content of a program or the interests of students with resources that exist right down the street from the organization.

At The Knowledge House, the organization intentionally connects their programs with real-world projects (see our brief on Client-based Work as Pedagogy for more

information). For example, one of their staff facilitating an advanced class in web development seeks out partnerships where the organization works with startups to identify meaningful projects that their youth can productively engage in. This gives the youth concrete opportunities to work with clients as part of a class, experiencing project management and engaging in their technical skills. This authentic experience and application for the youth is both dependent on the facilitator being able to make the real-world connections with projects within the flow of a class while also having the contacts and knowledge to work with businesses and provide value to them.

A Focus on Educator Social Capital and Network Participation

In order for a youth development organization to be effective in connecting youth to new opportunities in media and technology, it needs to have staff that are well connected. After all, it can't connect to opportunities it doesn't know about. To do this, effective organizations do two things: (1) they hire staff that span multiple worlds, and (2) they support staff to participate in broad professional networks.

In order for a youth development organization to be effective in connecting youth to new opportunities in media and technology, it needs to have staff that are well connected.

The Knowledge House actively hires front-line staff who span specific professional worlds who can leverage their rich, sector-specific social capital to connect youth to new digital learning experiences. For instance, a program manager at The Knowledge House was previously a coder at a non-profit. However, she also had non-profit arts management experience prior to TKH. This provided her with not only a window into these different work communities, but also separate social networks that she can leverage to connect students. It is also worth noting that the Knowledge House hires extensively from their alumni. Depending on the hire, this may align with the hiring of tech specialists, but it also suggests that the alumni have an idea of the lived experience of the youth they are serving and can potentially address impediments to engaging in pathways.

Many of the organizations that were studied in this project actively promoted engagement in a variety of professional networks on the part of their staff. These might be networks of other youth development and digital learning organizations, such as the Hive Learning Networks in New York and Chicago, or local tech meet-up groups that might be the source of partnerships that lead to youth internships or fellowships.

Whether an OST organization is looking to support a pathway of learning or a pathway to work (or a combination), the roles, practices and social capital of the educators at the organization are significant for making the pathway visible, encouraging pathway participation and making connections to enable youth participation. And those roles played by staff are supported by their previous experience, the understanding of the mission of their organization and how their role within the organization is defined. The staff play an intentional role in brokering awareness, access and participation in these pathways.

What Does it Lead to?

There are several potential impacts that come from supporting youth pathways in media and technology. These impacts come both from the practical experience of youth organizations as well as the research literature on youth pathways.

- **Connecting program learning to 'real world' experiences.** Connecting youth to opportunities outside of the organization is one way to make connections between what they are learning in an organization's programs and the outside world. It is a recognition that learning and opportunities to learn happen across settings (youth organizations, home, school, work places), and it supports research on youth pathways, which shows that resources woven together from many contexts promote positive developmental outcomes.
- **Helping students push beyond their comfort zone.** Some organizations see supporting youth pathways as a way of getting students out of their comfort zone. It is a way to help students interact with people outside of their social networks and to cultivate a basic skill of curiosity, helping students recognize that there are other opportunities and resources that are not immediately in front of them.
- **Connecting youth to resources and expertise.** Of course, there is a tangible benefit of supporting youth pathways through direct connection to people, institutions, opportunities, and more. This has been noted to be specifically important for youth from underserved families. Research has noted that people with fewer resources often rely on external organizations to broker access to knowledge and resources (Allard & Small, 2013).

Some youth organizations see supporting youth pathways as foundational to programs and initiatives they are running. For instance, The Knowledge House's Bronx Digital Pipeline Initiative (which we highlight here) has been launched to provide students in the Bronx with a structure that exposes them to technology at the high school level and then helps them navigate pathways into a tech career through extensive partnerships with post-secondary and industry groups.

Guiding Questions

As you and your organization consider supporting youth pathways in media and technology, and your educators' capacity to do so, there are some questions you might consider:

- What kinds of youth pathways are most valued by your organization?
- What learning assets does your community possess that could anchor potential pathways?
- What professional networks can you or your staff participate in?
- How does your organization practice investment in the capacity and growth of your professional staff that mirrors the practices you invest in youth?
- How, if at all, does your organization offer its staff the agency necessary to make change and respond to the communities that they serve?
- How can your organization design professional development that helps staff understand and change the systemic structures of communities and educational environments that reinforce inequality?

Tensions and Challenges

While building educator capacity for supporting youth pathways in media and technology might be a goal, there are certainly challenges associated with this work. For example, pathways need to be responsive to the needs of the organization's students. At The Knowledge House, one of their staff people stated that they do not "want to create cookie cutter developers who just go and do the work that you're told 9-5. We know that for that cultural change to happen, we need to really be responsive to the needs of our students." Thus the pathways must be tailored to the interests and needs of the students about to travel on them.

In addition, pathways as a metaphor necessitate youth organizations to be clear about what is meant by a pathway. Pathways can serve as openings to careers or a place in the workforce. Pathways can offer a guide to opportunities to deepen one's interest and expertise through service and experiences in their communities that are not necessarily connected to a career direction. Pathways can connect learning spaces within the learning ecology of the city. While all of these pathways may be appropriate for an organization's learners, the roles that staff play and the ways organizations build their staff's capacity are different for supporting these different youth pathways.

Finally, how to effectively broker these pathways is itself a knowledge and skill to be learned and practiced by educators. While strategic hiring of educators can enable access to built-in expertise and networks, in general, building the capacity of educators to broker and support pathway participation may need to be incorporated into larger plans for professional learning within a youth organization.

Data Routines for Improving Digital Learning Programs

Rafi Santo - New York University

Data and routines around them can play a key role in improving youth digital learning programs, supporting students, and building capacity of educators. In this case example, we highlight what this looks like during one digital learning organization's staff meetings.

In this case example, we share an account from one of our research team members observing a bi-weekly data sharing meeting at The Knowledge House (TKH), a nonprofit technology education organization based in the South Bronx focused on economic opportunity and workforce development for low-income youth. Through a commitment to not only collecting extensive program data, but also routines for staff to come together to examine and discuss implications of emerging data, we show how technology-focused youth development organizations might use data to better serve students and improve programs.

Opening and Setting

I exit the 6 train at Prospect Place in the Mott Haven neighborhood of the South Bronx and head towards Lafayette Avenue, where the Bronx Digital Sunshine Incubator is housed. The incubator was co-founded by Joe, one of the co-founders of The Knowledge House, and TKH's offices are based in the back of the incubator. Each week, the full staff, now just under twenty people, gathers in the back of the incubator for a weekly meeting where they review program progress and data, troubleshoot issues that are coming up, share out about organizational changes and activities, and develop strategic plans.

When I show up, Jerelyn Rodriguez and Joe Carrano, the co-founders, are having a meeting in one of the glass-walled conference rooms that are right next to the front desk of the incubator. I wave, and Jerelyn pops out to say that I can just head to the back where their desks are and that she'll join in once she's done with her meeting. I head back, where I see Stephany Garcia, another TKH staffer who has sat in on some of the interviews we've been doing as part of our research. She lets me know that they're just starting to set up the back area. Not wanting to just sit around, I begin to help one of the staffers that's started to wheel out tables and arrange them. His name is Elvis, and he's an instructor at TKH, and, I learn later, Stephany's brother. I ask him about his work and learn that he runs programs at three high school sites that TKH works in, including one I'm familiar with, Fannie Lou Hamer High School, where he conducts professional development for teachers around one of TKH's course offerings.

We continue to set up with some of the other staffers joining in, and by the time 2 pm rolls around about fifteen of us have settled into a U-shape configuration, with a computer projecting onto a screen at the front of the U. The group is a mix of instructors, program coordinators, program managers, various specialist roles like HR, outreach coordinators, talent managers, and, of course, the co-founders, Joe and Jerelyn. I'm the only white person there - everyone is either black or Latinx - and at 35 I'm pretty sure that I might be the oldest person there as well. The group feels young, energetic, earnest. A lot of them feel like they could've been my former students from when I was running youth media activism programs in Brooklyn. I learn that a good number of them are former TKH program participants themselves.

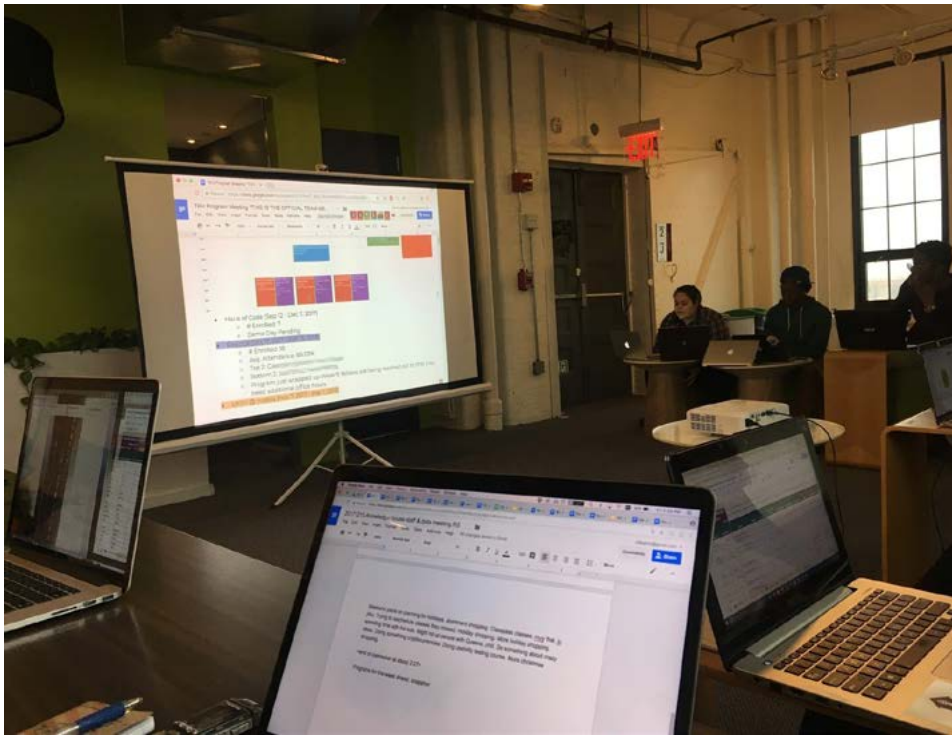
As we settle down, I'm chatting with the staffers around me. One, Nohely, I met when the TKH City Saturday program visited my colleague and me at our offices at NYU's Media and Games Network. She had her laptop in front of her, with spreadsheets upon spreadsheets open to what looked like some form of student data. I asked her about it, and she said that she's basically just cleaning up all the student data to get it ready as they'll be moving over from a purely spreadsheet-based system to using Salesforce, and they need to make sure there aren't any errors so that it goes smoothly.

Start of Program Data Share-Out

The meeting opens with an icebreaker, where folks go around sharing 'bright spots,' or little highlights and successes from the week. People share about successes in helping struggling students, looking forward to program 'graduations' since it's the end of semester, and upcoming 'demo days' where students will be sharing out final web site projects they've been working on over the course of the semester. Some of the higher ups share bright spots around things related to organizational development, with Joe sharing that he'd been working on a new structure for team meetings that he thinks will help streamline things as the organization grows, and Jerelyn sharing that she just heard from their auditor that they've been approved to now receive larger grants.

At about a half hour into the meeting, the group moves into what seems like the core agenda: reporting out and discussing data coming out of the different active programs. On the projector, a 'rolling' google doc for the regular weekly staff meeting shows data about programs that, based on what I can tell, program coordinators and managers have filled in ahead of the meeting. It looks like most of the staff are also in the document as it's being projected, indicated by the many multi-colored 'avatars' present at the top of the google doc.

Madeline, a program manager, begins by sharing out about a number of programs. There's a common set of metrics shared about each - the numbers that are enrolled, the average attendance rate, and the two 'top' and 'bottom' students in the course, based on the TKH's leaderboard scores, the organization's internal "gamified" system of assigning points based on attendance, assignment submissions, quizzes, participation in extra events, and a number of other factors. As she mentions the name of one of the bottom students in one of the courses, Joe notes that "it's because he doesn't do homework, that's why..." She goes on with one of the program share-outs, saying that with week 9 of the program wrapping up, some of the bottom students will "be contacted to talk about next steps, including probation, case management, or dismissal from the class." She moves on to the next program without comment.



Data as a Prompt for Troubleshooting: "What are we doing about Middlespring?"

The report out from Madeline seems to proceed without incident, until she reports out the numbers for a program co-facilitated with Middlespring Community College, a local partner. It's a context where they have both weekday and weekend programs in coding (React.js, a javascript) and design (User Experience/User Interface). She reports that the weekday attendance rate is 66.82%, and the weekend is 58.3%. Joe asks, "Is that consistent with the experience so far?" Madeline responds, "Yeah, it's pretty consistent...I think it's a 2% decrease from the week before, but it's pretty consistent..." She goes on to report on some other program numbers, ones that are notably higher in their attendance rates, and as she finishes she sums things up by stating that, basically, overall numbers for high school programs she's overseeing is over 80%, which is exceeding their target goal of 80%.

Joe jumps in, asking Dre (Andre), who also works on that program, "So, Dre, what are we doing about Middlespring? The attendance?"

Data as Prompt for Context Sharing and Ideation on Partner Coordination

Jerelyn pretty quickly jumps in, sharing that she'd actually connected with Tom, their contact at Middlespring Community College, after this question came up last week. She said there were apparently some mixed messages going out to students related to what to prioritize within their participation. "We have a challenge with both React and with UX/UI," Jerelyn starts, "because he's telling me that students are confused about what their number one priority is. Is it going to bootcamp, because they're in WDC (a workforce development program), or, doing their coursework in either React

or UX/UI? I think we're probably not all on the same page about the messaging. From my understanding, Tom is telling them that they should be focusing on their coding bootcamp applications, so they are trying to get excused from coursework…So I'm not really sure what you all think about that." The data share-out highlighted an issue that was actionable. Now, it was time to do some coordinated problem-solving with a key partner around how priorities were communicated to students.

Data 'Trouble Spots' as Prompts for New Data Strategies

Jerelyn goes on to ask whether there's a way to know what the overlap is between the UX/UI and React students. Stephany shares that she connected with Tom at the college earlier today, and that they had expressed the same concern. She had advised him to make a separate spreadsheet with the overlap between the WDC students and the others, so that they could be especially mindful of those overlapping students since they might be getting mixed messages. She also advised him to ultimately prioritize bootcamp placement, since that's the college's number one priority. Stephany also shared that they also need to come up with a strategy to deal with the tension of students completing their coursework while simultaneously making their applications to the bootcamp good. This meant that students should reach out to TKH staff for help, schedule office hours, and be able to make up work. In this case, the 'trouble spot' in the data highlighted a need to potentially create a new data stream that focused on particular students.

Data as Prompt for Considering New Pedagogical Strategies

After Stephany shares about this interaction with Tom, Sam, a Talent Manager who focuses on workforce placements for TKH students, shares that she'd also been attuned to this issue with the bootcamp applications. She says that once she realized it, she went ahead and actually tried to fill out the bootcamp application herself to see how long it would take her and to understand "how grueling the process really is." "Frankly, I don't know if I'm being a little bit unforgiving, but I think we could just hold a 3-4 hour workshop and make sure that every single student has a strong draft," Sam said. "Leaving them to their own devices isn't getting the kind of results that we need, and it's leaving room for them to make excuses." Jerelyn then shares that Tom agrees that there is a need to integrate the application into the program structure. In this case, the data sharing prompted a discussion about program structure and pedagogy and whether a new program element needed to be added to help reach their goals.

Data as a Prompt for Reviewing Student Progress, Highlighting Program Design Tensions, and Discussing Shifts in Program Expectations

Following this, Jerelyn raises a new issue, pointing out that one of the low performing students, José, is actually one of TKH's most successful alumni. In fact, he's already been placed in a job. She wonders whether José's case highlights some tensions in how they communicate what successful participation looks like. She reflects that José probably is not performing well in the TKH course or going to the career events that count towards the leaderboard score because he already has a job. Joe even notes that José is doing the course assignments; he just isn't turning them in. He also helps out during the classes. Stephany shares that students like José, who have "already met the definition of TKH success," and therefore do not need this course, should possibly consider dropping the course. This leads into a larger conversation of whether TKH

should institute some form of course auditing for cases like José. The group debates on this for a couple of minutes; it's clear that this is a challenging area. Jerelyn notes that it's come up before. In order to solve it, the first thing the group needs to do is gain more clarity on the types of exceptions or new policies that might be put into place. Joe suggests that students who already are placed in jobs that pay more than $50,000, TKH's key metric of student success, should be able to audit classes. Jerelyn concurs.

Prompts for Further Inquiry: Query about Causes of Low Attendance

As the conversation moves on, Jerelyn asks whether the participation in WDC, which I've come to understand and associate with the issue of bootcamp applications, is the cause of low attendance scores in the UX/UI course at Middlespring Community College. Dre shares that they might be low because students are missing career day events. This prompts a larger conversation about why they're not attending these days. Stephany shares, "My high level assumptions of why students are missing out on career days is that they've already been placed and they already have this career training and they don't need to go, but that's not an excuse for not showing up."

They go into a larger conversation about how some students need career development activities, like working on resumés or interview skills, while others could be exempted from them. Some suggest assessing students at the beginning of a course to determine what career development skills they need. From there, they can modify what each student is required to complete in the course. Again, I'm seeing questions about how program requirements, associated data and student needs in their actual daily lives intersect.

The conversation moves to questions about the current pedagogical design of career days. Cassandra, who works on outreach, asks, "How different are career days for developers and designers? From what I've seen they're not that different." She continues, "I think they should be different. Developers and designers are different. They need to market themselves differently." This leads into questions of standardization versus customization of career day activities within the overall TKH model.

"They're Dealing with Outside Issues" - Ideation around Addressing Root Causes

The conversation about career day models and requirements comes to an end, and it seems like they may be about to move on to further program share outs. It's been about twenty minutes or so since this the group began this conversation about low attendance rates at the community college course. As the conversation settles, Jerelyn asks the group "anything else?" There's a pause, and then Sam jumps in.

> *Regarding job placement interfering with the students applications, I honestly think there's something else and that's just the students' [difficulties]. They had difficulties coming in. I think it's more so that they didn't get support services that they were told to get, so it's just carrying over to the next class. They're dealing with outside issues. We are thinking it is just the fellowship, but truly it is that plus a lot of other issues from the outside. That's why something that should take less than a week is taking longer. If they don't know where they're*

getting their next meal, a student might struggle to complete something... We can see the top level issue, but we really have to deal with the root problem, which is accessing supportive services that are literally right next to them. Sometimes the person from HRA (a social service agency) will be there at a class, and will literally be like 'I'm here to help you, come talk to me.'

This prompts a larger conversation about what kinds of communication is happening within the organization regarding student needs and why students are not taking advantage of services that are already offered. "So let's follow up on that," Jerelyn says. "This sounds like a case management issue, and we might need to change our case management policy. How do we find more services for our students, or ones that are better fits for them? My question is why aren't students taking advantage of the ones that we already have in place, like Workforce One." Cassandra responds, "They might be reaching out to them. We need to have a feedback loop from Workforce One." Jerelyn responds, "We should be tracking that, logging that somewhere." The conversation moves back and forth about tactics that are already in place to know to track social service uptake among their students, raising examples of how they've seen other partners track both qualitative and quantitative data around these sorts of barriers or root cause issues and how these approaches could have implications for both reporting metrics and supporting case management of students.

Closing Out the Program Report

The meeting moves on from the conversation about Middlespring, with Cassandra sharing out data from some other programs. The data includes familiar metrics, such as attendance and 'top' and 'bottom' students, but there are also program specific data points. For example, one program tracks the number of mock interviews completed, standout fellows, and students flagged as 'concerned.' Cassandra shares some positive stories about some of the stand-out fellows. "Michelle and Caroline, despite their challenges in coding, have been very committed to office hours and are trying to figure things out that are hard for them in term of coding. Michelle told me that she was downtown one night until 2am so that she could use access wifi. It showed me her perseverance, and that she's not going to let anything stop her." After some additional program reports, the data report-out meeting adjourned.

Takeaways - Roles of Data to Support Programs

Over the course of the interaction, I noticed a number of ways that data supported program planning and iteration:

- **Data as a prompt for contextual knowledge sharing.** Middlespring's low attendance data, presented by Cassandra, prompts Jerelyn to share context about what she's hearing from their partner at Middlespring, Tom. This illuminated the issue of misaligned priorities in messaging to students.
- **Data as a prompt for coordinating strategy with partners.** Sharing the additional context about Middlespring leads into discussion of how to engage with Middlespring staff to help students set priorities.

- **Data as a prompt to identify emerging needs.** New barriers to participation, as well as ways to identify them, were discussed by TKH staff during the Middlespring 'root causes' conversation.
- **Data as a prompt for considering new pedagogical strategies.** In one instance, the data about application completion prompted Sam to recommend a workshop for students who needed to work on their drafts.
- **Data as a prompt to analyze how current data models match student activity.** In the example of José, a student who was disengaged because he was already placed in a job, the organization questions whether their current approach to data might be shifted to better align with student needs.
- **Data as a prompt for questioning the ways that current pedagogical approaches are designed.** The example of José prompts the staff to consider adding an option for students to audit a class.
- **Data as a prompt for hypothesis making about root causes, with implications both for data strategies and pedagogical changes.** The data allowed the staff to have a root cause discussion about the true barriers to program participation, which included access to social services and other barriers stemming from home-life. This also made them consider new approaches to what data might be collected around root causes.

In your own organization, you might consider not just what data is collected, but when and how it's used to reflect on and advance both student support and program improvement.

Why Teaching Artists?

Peter Wardrip - University of Wisconsin-Madison

Teaching artists can support a wide range of positive outcomes for youth. They span professional worlds, expose youth to real disciplinary practices, and can build the capacity of educators they partner with. In this resource, we explore the role of the teaching artist.

What's the Issue?

Youth-serving community arts organizations work to provide ambitious programs for youth that are fundamentally arts-based. And in providing these experiences, often these organizations rely on teaching artists to support the design and facilitation of these programs. This is an intentional move when they could also select arts educators for this role. This choice presents challenges and opportunities for these organizations as well as for the teaching artists.

While different organizations may define a teaching artist in different ways, in general, we might define the role in this way, "A teaching artist is a practicing professional artist with the complementary skills, curiosities and sensibilities of an educator, who can effectively engage a wide range of people in learning experiences in, through, and about the arts." (Booth, 2010, p. 2). In this way, a teaching artist might be considered first for their arts background and practice.

In this resource, we explore the role of teaching artists and why youth organizations may wish to utilize teaching artists. In particular, we will highlight the fact that teaching artists provide connections to social networks and communities of artists that can

Teaching artists provide connections to social networks and communities of artists that can support youth participation in pathways.

support youth participation in pathways. In addition, teaching artists provide specific expertise in art, media and craft. Finally, teaching artists can help inform and contribute to new programs by using their own projects and practice to create ways to authentically engage youth.

What Does it Look Like?

In choosing to work with teaching artists, we can learn from the rationale of youth organizations. Here, we provide two brief examples from the West Michigan Center for Arts and Technology (WMCAT), and DreamYard. Located in Grand Rapids, Michigan, WMCAT is a youth organization that aims to create social and economic progress in people's lives and community through visual arts and tech engagement, workforce development and social enterprises. DreamYard is youth organization in the Bronx, New York that builds opportunity and pathways for teens and families through the arts. Both organizations prioritize teaching artists to carry out the educational work of the organization for slightly different reasons.

What it Looks Like at WMCAT

One reason that WMCAT leverages teaching artists for their programmatic work is that the teaching artists give their programs added credibility. Having youth work with a teaching artist communicates to them that they will be working with someone who has a deep knowledge of a particular artistic medium. For example, with a mural project that WMCAT was initiating, the project class was facilitated by a local artist who was fairly well-known in Grand Rapids. This mural project was under the stewardship of this local artist and WMCAT feels that this is a strength for the program because his involvement sells the professional quality of the program. It not only makes sense to have a mural project run by a muralist, but run by one who is well respected for his mural work in the community.

Having youth work with a teaching artist communicates to them that they will be working with someone who has a deep knowledge of a particular artistic medium.

For WMCAT, selecting teaching artists instead of general arts educators, is an intentional move beyond what it conveys with respect to the quality of a program. Teaching artists bring with them their own body of work and their own professional practice of being an artist. WMCAT supports these artists to share their world with the youth so they not only understand the craft of a particular kind of art making, but also the ways in which that art making encompass one's professional world.

And this professional world helps new programs develop since they can be developed around a teaching artists' work. For instance, a photography program can be richly

facilitated when there is a photographer as the teaching artist. The teaching artists' professional world also enables them to connect the work in the program with partners in the community. Whether this is a non-profit in the community, like a cat shelter, or a workplace that the teaching artist is connected with, the professional world of the teaching artist becomes a big part of the educational domain.

What it Looks Like at DreamYard

DreamYard relies on teaching artists because of what they can directly offer students as well as how they can be conduits for partnerships. One fundamental way that DreamYard utilizes teaching artists to both run programs as well as partner with teachers in partner schools. For example, in the Art Center that DreamYard manages and maintains, a teaching artist can run an educational program in their medium either alone or with a high school aged intern. This may also convey quality and credibility similar to what WMCAT mentioned, in that a practicing artist is the one facilitating the program.

In addition, teaching artists can be key for partnerships. For example, teaching artists work with some of DreamYard's partner schools. In this case, a teaching artist can work collaboratively with a classroom teacher. The teaching artist can co-plan a lesson or lesson sequence as well as co-teach the class with the teacher. In the spirit of arts integration, DreamYard is leveraging the arts expertise of the teaching artist and the educational expertise of the teacher to come together for an integrated learning experience. In doing so, both teaching artist and teacher are co-learning about their own educational practice.

It is worth mentioning that DreamYard takes seriously the professional development and supports that they provide for their teaching artists. While they try to hire teaching artists that have some background in education, they also intentionally try to find out where they can build capacity in their teaching artists. In general, DreamYard has staff people that oversee the teaching artists and provide professional learning supports for them. These are directors in separate art forms as well as a Director of Digital Learning that can provide this support. For the teaching artists that work in the schools, the intentional partnering with teachers provides them with ongoing learning experiences. In addition, the teaching artists take advantage of professional development that is provided for both them and the teachers, for instance, around restorative justice. And finally, the DreamYard team connects the teaching artists with the building guidance counselors so that if some issues emerge with the students in the classroom, the teaching artist has an additional resource to go to in order to find productive ways to support the students.

Guiding Questions

As you consider the potential place of teaching artists in your organization, you can ask yourself:

- What other organizations use teaching artists in my community?
- How can teaching artists further our organization's goals?
- What professional development needs might teaching artists have in our community?
- What motivations do teaching artists have in our community to continue their work?
- What are the arts domains we focus on (or wish to focus on) which could be supported by teaching artists?

What Does it Lead to?

There several benefits that can accrue based on utilizing teaching artists in youth organizations.

- **Youth access to diverse networks.** First, the aforementioned goals of utilizing teaching artists can support youth participation in pathways for deepening learning and interests (see the our brief on educator capacity to support youth pathways). By acknowledging the professional worlds that teaching artists bring with them to a youth organization, there are opportunities to model and connect youth participants to people and practices consequential to the work of an artist in the community.
- **Authentic arts-based learning.** By acknowledging the expertise and professional practice of artists, programs can gain recognition for providing authentic arts-based learning experiences. Like other content areas and disciplines, a deep knowledge of an artistic practice can help teaching artists support deeper learning and engagement for the youth participants. This is particularly important when we consider the learning trajectories of our youth and how they begin to see themselves as someone who can competently engage in an artistic practice.
- **Multidisciplinary learning.** Teaching artists have been noted to be critical to the success of some models of inter-disciplinary learning within schools (Burnaford et al., 2007). As some teaching artists act as service providers for schools, their artistic perspective can be crucial in furthering the integration of art with other content area learning experiences. This is especially important as youth organizations consider ways to partner with schools. Teaching artists can be a bridge between the learning that is valued within the school and the learning that is valued in the community arts organization.

Tensions and Challenges

While this resource has acknowledged strengths in relying on teaching artists in youth organizations, there are some tensions and challenges to make clear. First, teaching artists often lack the necessary educational experience to design and facilitate educational programs effectively when they are hired. As mentioned in the DreamYard example, teaching artists may need additional support, whether it is to carry out a program, teach a class or work collaboratively with a teacher. Because of this, youth organizations may need to invest in professional development for their teaching artists, whether that is an internal program of professional learning or an external program. A related challenge to this is the fact that it is difficult to find specific professional development for teaching artists in many of our communities.

In addition, another tension is that when teaching artists serve as direct service providers to schools, they may induce anxiety from teachers who may feel that teaching artists are an inexpensive way of replacing in-school arts programs and teacher, or that a teaching artist will deliver a particular program that is not supportive of other work happening in the school and then disappear (Booth, 2010). While this

challenge can be mitigated over time through the trust and relationships that are established through partnerships, it can certainly be a consideration in the beginning of a partnership.

In some cases, it is not easy to find willing teaching artists. WMCAT noted that in a city that is the size of Grand Rapids, there is not as much 'teaching artistry' as the bigger cities. They noted that they need to reach out to the local school of art and design in order to attract more teaching artists.

Related to finding teaching artists, one other challenge is the nature of scheduling that comes with teaching artists. By this, we mean that the work of teaching artists is often part-time and during the afterschool time. The extent to which a youth organization can find teaching artists who are willing and able to work consistently during those times can also be a challenge. When teaching artists are not able to have somewhat consistent relationships with an organization, this impacts their ability to develop deeper connections with youth and be effective mentors. Ideally, organizations can find ways to have more consistent and ongoing relationships to the teaching artists that are involved in their youth programs.

CASE EXAMPLE

RECLAIMING Digital Futures

Professional Learning Supports for Flexible and Responsive Drop-in Programming at YOUmedia

Jeremy Dunn - Chicago Public Library

This resource highlights the professional learning approaches of Chicago Public Library's Teen Services division. They focus on providing flexible, ongoing avenues for youth educators across their branches to advance pedagogy around interest-driven, drop-in models of digital learning.

Providing engaging programs for teens in the context of a large, complex system such as Chicago Public Library (CPL) sometimes feels like trying to master the complexities and problems of space travel. At the root of our strategic structures for professional learning is effective communication and practical, hands-on learning. If we can consistently provide the structures and formats for peer-to-peer sharing as well as flexible and meaningful real-world learning, we know that our staff will grow and our engagement with teens will thrive.

Our mission at CPL is to keep the teens coming back; they keep coming back because they have found value in the relationships they develop and in the resources they discover for their own personal learning journeys. One of our key strategies to fulfill this mission is to effectively prepare our staff to meet a range of needs so that teens who visit our libraries have positive and affirming experiences.

How do we nurture and sustain effective professional development practices so we can succeed? How do we assemble the diverse set of resources at our disposal to create the right stuff so that more teens who to the library have great experiences?

As a first step, we recognize the complexity of our system. Our library serves a large and diverse city with varying community compositions as well as a range of library facilities. In addition, teen interests and needs are not

monolithic, requiring staff to develop the right relationships and responses to the teens who are in front of them. Finally, staff bring varied experiences, skill sets, and personal styles to their work. Even in light of "best practice," we recognize that staff must develop facilitation styles that work for them and that also align to teen developmental needs.

Our Approach to Professional Learning

The professional development that CPL provides for teen library staff is based on supporting them as educators to develop responsive and flexible drop-in programming. The administrative team supports this work by providing resources—materials, partners, program opportunities, etc.—as well as structured learning opportunities that provide a range of activities through a variety of activities and formats. As outlined in the logic model below, our approach first emphasizes the diversity of youth needs; second, it recognizes that staff development goals are individualized and reflect nationally-recognized youth development standards. Ultimately, our aim is to support staff to independently develop and grow their program implementation so activities are successful for their communities and are aligned to our mission of nurturing learning for our teen patrons.

Logic Model for YOUmedia Professional Learning

Inputs	Activities	Outputs	Outcomes	Impact
Dedicated Staff and Mentors Supportive Administrative Team Strategic Commitment to Informal Learning Technology Resources Partnerships & Projects	Dedicated Staff and Mentors Supportive Administrative Team Strategic Commitment to Informal Learning Technology Resources Partnerships & Projects Monthly cluster meetings Staff shadowing opportunities Staff share-outs Hands-on training One-on-one consultation	Staff learn new technical skills Staff strengthen facilitation skills Staff build relationships among their peers and with youth	Staff develop and implement new programs Staff independently develop programs that meet teen interests and needs Staff actively refine and iterate on past programs Staff Identify new community resources and partners	All library spaces and branches are welcoming and active spaces for teens

Professional Learning in Action at CPL

Development of programs within YOUmedia and the Chicago Public Library can take a number of forms. These are just a few examples of how programs develop within the Teen Services community.

Formal Hands-on Training and Traveling Kits Lead to New Program Opportunities

After successfully piloting sewing machine usage at CPL's downtown YOUmedia location, teen librarian Marshall offered hands-on sewing machine certification trainings to teen library staff at large. After the training, traveling sewing machine kits were made available to teen staff to check out to use for programs at their branch locations. Maggie, a teen librarian at the Albany Park branch, used these new skills and resources to develop programs that connected directly with here teen audience's interests. Teens at Albany Park love geek and anime culture, so Maggie helped teens at the branch to learn how to design and construct cosplay costumes to wear to conventions. These teens also did not have easy access to new clothes so they also learned how to upcycle old items and thrift store clothing, a program extension that helped them connect with their community in new way. At the West Belmont library branch, adults and teens need to use the same workshop space due to physical constraints. When teen library associate, Karen, discovered that adults were equally interested in the sewing classes that she had introduced to her teen patrons, she redesigned the workshop to be multi-generational so she could involve both demographics in a space-challenged environment. As we continue to provide training that builds staff knowledge and provides access to new technology, we also give staff the freedom and power to use newfound knowledge and in novel ways that are focused on their community of learners.

Staff Share-outs Igniting New Programs

Teen library associate Ade, recognizing a need at his branch in West Englewood, developed a community program called Barbershop @ the Library. Local barbers offered free haircuts to teens and also a safe space to talk about issues that these teens were facing in their lives and in the community. But it wasn't until a local TV station created a spotlight of his barbershop program that our central department learned about his innovative approach. In our large program universe—stretched across 77 neighborhood communities across 234 square miles—not all staff readily share their program successes, another factor to navigate in facilitating effective staff-to-staff communication in a large constellation of programs.

As we learned of Ade's programmatic achievement—and as he was being recruited as a feature for Chicago's morning show Windy City LIVE—we asked him to share out with staff during the next "cluster meeting," our monthly Teen Services library staff meeting that provides a forum and a community of practice for 80+ positions at CPL that provide teen programs. A new teen associate, Armena, who worked in a different community in Chicago, learned about Ade's barbershop program and was inspired. It didn't happen immediately, but within 18 months, she had adapted the program for her neighborhood library on the west side of Chicago, renaming the program Fades 4 Days.

It's easy to take a good idea and replicate it if it meets your needs and inspires you. We provide those structures and channels for good ideas to find the next audience that needs them so we can continue to accomplish our mission.

Staff Shadowing and Consultations as Key Tools for Program Improvement

New teen staff are given the opportunity to shadow existing staff members at established branches, with shadowing locations selected in order to give staff a wide breadth of experience. Because each branch is different, new staff members need to experience the differences while also recognizing the similarities in services between locations.

After the initial on-boarding, staff are then encouraged to follow up with each other through cluster meetings and through individual consultations to refine their program ideas. For example, the Dunning and West Belmont branch are in fairly close proximity and have an overlapping service area. The teen library associates from these branches regularly conduct outreach together and meet to discuss program ideas and best practices that can serve their communities.

Staff communities that are geographically far apart also meet with each other to learn new skills and refine program ideas. Staff from the Harold Washington Library Center and the Thurgood Marshall branch would discuss programming around podcasting and AV production often. Even though their communities were very different, the teen interest was the same and the ability to consult with each other within the CPL Teen Services network allowed the programs in both communities to evolve.

Accessible Supports for Professional Development

In order to support staff who are at varying levels of comfort and knowledge with digital media tools, Teen Services staff have developed new resource guides for our software offerings. While ideally we would want to provide hands-on training for staff on all software that is available for teens to use, we know that is beyond our institutional capacity. However, we can provide guides and resources on all of the software so staff can familiarize themselves with software offered to teens.

One example of this is our software guide that we developed to support the rollout of new laptops for teen programs. The guide is designed to provide multiple access points to allow staff to use it in a variety of ways to support their own learning so they can build new programs that will keep teens coming back again and again.

As our program continues to grow in size and evolve in form or content, we anticipate that new support structures may develop and lead to even more effective staff performance and institutional responsiveness to youth needs. But one thing we don't plan to change is putting the learner at the center of all that we do. Program administrators will continue to leverage effective communication among staff as a key to professional development so that program staff are fueled by both inspiration from their peers and effective, practical training offered in flexible formats.

Building Staff Capacity through Peer Learning and Passion at the Digital Harbor Foundation

Mary Reisenwitz, Shawn Grimes, Rhea Ramakrishnan and Adena Moulton

Digital Harbor Foundation

In this resource, Digital Harbor Foundation shares its approach to building internal staff capacity around maker and technology-based learning, even when staff don't come from technical backgrounds, by focusing on peer learning and learning by doing.

Over the years, as we've navigated the landscape of informal and after-school learning, people have come to us trying to figure out where our successes lie. As we explain what we do, we are often met with a chorus of doubt, ringing like "we can't do that because we don't have someone like _____ on our staff." This may have been true when we first started and there were just a handful of us because we relied heavily on vision rather than practice. However we've come to the conclusion that our success is not just a matter of who we hire, but how we maintain a culture of peer learning throughout our organization. This article will break down some key components in the process of building organizational culture staff capacity in technology from the ground up.

Some Assumptions We're Making about You and Your Staff

- You have experience working with youth (anyone 1-18 years old)!
- You are passionate about learning new things.
- You believe there's an exchange of knowledge between youth and facilitators that flows in both directions.
- You have a practice of making that extends into your own life. For us, this covers a lot of ground (everything from cooking to carpentry, programming to poetry). The key is not that you self-identify as a maker, but that you are producing (not just consuming) in this world.

Who We've Become

Digital Harbor Foundation (DHF) has always existed as a melting pot of people from wildly different backgrounds (in both education background and professional experience). In particular, we've found there to be some sort of magic that happens when educators, technologists, and artists operate in the same space. That said, this breakdown has shifted over time and we find that our staff frequently break the mold of what is expected of their formal training. All this to say that we've noticed patterns in the people we find, but **our background isn't necessarily our destiny.**

The Digital Harbor Foundation Culture of Learning

Officially, DHF's mission is to foster learning, creativity, productivity, and community through education. Unofficially, our vision is to promote productive and sustainable adults in our community. In practice, this takes the form of:

- Increased access to high-growth enrollment and employment opportunities to underserved youth
- Development of career-readiness skills like communication, leadership, and problem solving in our youth

By being so broad in our goals, we have made it much more challenging to establish practices that universally foster this growth. Now we need to prepare youth for nearly any path they may be interested in rather than focusing on a single, predetermined, future.

We looked to each other and members of our community to determine what this success looks like. We found that a **passion for learning** unites us and has extended into our adult lives. For many of us, we have switched careers or are doing something seemingly unrelated to our formal education. Our passion for learning helped us bridge those transitions.

Because youth at DHF respect our staff and identify with staff interests, they constantly come to us with questions. Our goal is neither to give them the answer nor turn them away. Instead, it's our responsibility to make sure they're on the right path toward a solution.

Passion guides us and sets us apart from gatekeepers of knowledge, who many of us came to know in formal learning environments. These can be spaces where adults present themselves as the primary and proper access points to content and comprehension. At DHF, nobody presents themselves as a **knowledge expert**. Of course, we've all learned a lot about tools or processes through experience, but there's always room to grow. As staff, we work to signal to youth where our **interests** lie, rather than project that we know everything about x, y, or z.

Presenting ourselves as non-experts is more active than passive. Because youth at DHF respect our staff and identify with staff interests, they constantly come to us with questions. Our goal is neither to give them the answer nor turn them away. Instead,

it's our responsibility to make sure they're on the right path toward a solution. We ensure that young people stay on track by pointing them toward potential resources. Naturally, this is a skill that relies on accumulated experience.

More often than not, answering a question means looking in one of three places: peers, educational resources, and the internet. Look around you and you'll find that someone else has probably asked the same question. Maybe they've even answered it! This philosophy has taken form in our **"Three Before Me"** policy. When youth have a question about how to do something, staff inquire about the steps youth have taken to find an answer. If this measures less than three separate sources, staff direct youth towards another option.

The key to maintaining trust is ensuring that youth don't feel as if staff are withholding knowledge for withholding's sake. This would reinforce the gatekeeper culture we are trying to avoid. Instead, the discovery of a solution is a shared experience. If a youth comes to staff with a question (and has followed "Three Before Me"), then the answer given to them may be as simple as, "Have you tried searching for _____ instead?"

It's important that this interaction is posed as a question. This leaves room for doubt that the staff member knows whether this path can provide a solution. This doubt is vulnerable, but it reinforces peer learning. When a young person finds an answer, it is a resolution they own rather than one they've been given. When they own that knowledge, they can become a resource for others and the cycle of peer learning is enhanced.

In the same way that we speak and work with our youth as equals, we hold our staff to similar standards. While we are a highly collaborative and energetic group, we expect our staff to take charge of their learning too. This looks similar to how our youth develop: put all you've got into learning and practicing something on your own, knowing that there's support if/when you need it.

Learn by Doing

We believe experience is the best teacher and that this is true for all learners at all levels. When our content developers start with a course as an idea, they begin by scouring the internet for resources relating to that subject. These research skills are key to getting started, but the real learning happens when anyone puts those ideas into practice. Whether it's programming, electronics, or fabrication, our staff test concepts and techniques constantly. Before youth start projects that we've planned, course facilitators

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work through creating these projects themselves. Not only does this allow for the creation of sample projects for youth to see and work from, it ensures that our staff understand how our youth will develop skills and provide an opportunity for feedback.

For example, in a recently offered youth course called Raspberry Pi for the Web, the primary objectives were twofold: learning how a Raspberry Pi can be used as a web server and developing custom content for the web. Early in the course, youth were asked to remotely access another person's Raspberry Pi. The goal was to demonstrate that the Raspberry Pi is a computer that serves information (youth websites) on the web and that information can be accessed in a number of ways. Using the facilitator guide and our learning management system, program staff were first asked to focus on the technical elements of this mini-project. Naturally, they must be able to walk through this task independently before guiding youth through the process.

While it's simple enough to access a computer (the Raspberry Pi) remotely if you have access to that Pi's IP address and login info, the usefulness of that process is less intuitive. The facilitator guide outlined how to remotely access a Pi, but it was up to course facilitators to determine the best way to describe the usefulness of this procedure (i.e. that you can access the information stored on a computer from another computer).

We refine our content and projects by way of communication between program staff and content developers. We all benefit from operating in one central location, but the key is regularly making all parties available to each other for communication. We tackle bigger picture changes between course offerings (before and after) and tinker with smaller, logistical revisions as the course is running.

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Let's return to the Raspberry Pi example. During their prep for Raspberry Pi for the Web, program staff were asked not only to complete this "remote-in" activity, but also find ways for youth to make more meaningful connections. They knew the experience would take place early on, so youth would not yet have established web servers on their Pi's.

Rather than remote into blank or disjointed sites, program staff suggested that youth input four facts about themselves into a blank text editor. Then, they'd each write down their individual IP addresses on a piece of paper and toss it into a bag. Each youth would collect someone else's IP address at random. After learning to remote into that site, each youth would use the command line to access the file containing a classmate' four facts.

The activity became centered around figuring out whose site you had "hacked" into via their new-found technical know-how. As program staff made these adjustments, they communicated with content developers and it was reflected in the facilitator guide and our learning management system. In this way, the course was enhanced as staff prepared to facilitate it.

As the course progressed, program staff found that the technical scope (learning to use a Raspberry Pi and the command line to control) was more limited compared to some other courses. Ultimately, youth took more time developing their personal sites. This utilized HTML and CSS skills that most youth had already acquired through previous web development coursework.

Upon reflection during our course debrief, program staff suggested that this course may better in the context of a youth mini-course (8 course hours) rather than a full-length youth course (56 course hours). Mini-courses give us the opportunity to teach a specific tool or program that works with a young person's existing knowledge the demonstrate the full potential of their skill sets. We'll implement this change in the next version of the course, after which we will come together to reflect and iterate once more.

We can't count on everything to work the first time we teach it, so we're constantly poised to pivot. Again, this is where we rely on **experience, rather than expertise.** It allows our program staff and content developers to come together, and quickly brainstorm ways to navigate challenges with content or facilitation.

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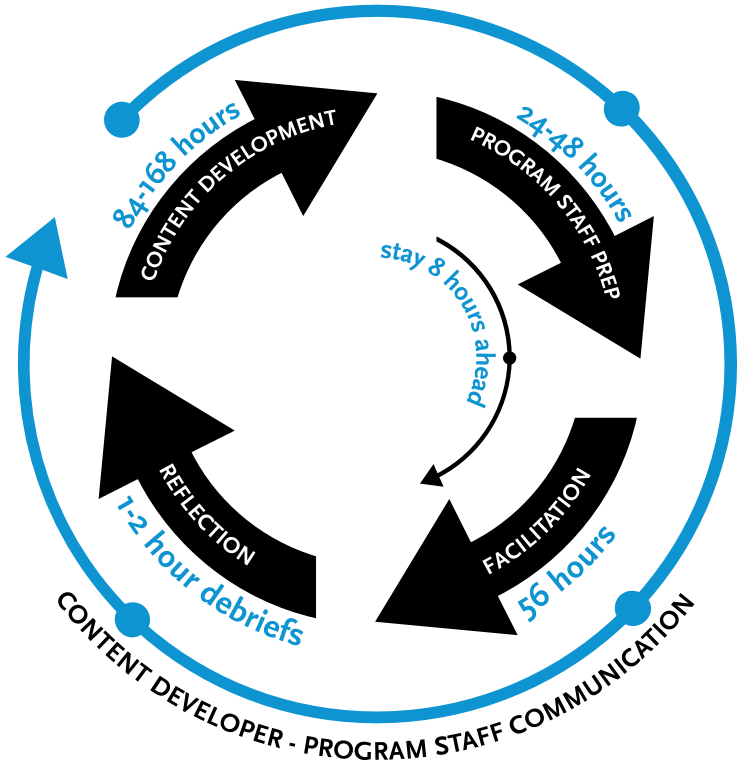
When we talk about changing course content as it's running, these changes need to be made **quickly** (usually within 2-4 days). Of course, when we have staff that have more extensive experience in subject areas it's easier to turnaround changes faster, but this isn't a necessity (or always an option). We expect our program staff to stay only two weeks (or 8 hours/four class sessions) ahead of our youth in terms of content preparation. This is true whether staff have experience in specific subjects or if they're learning content for the first time. We find that when the material is fresh, instructors relate better to their students. They can remember challenges and successes they had in the process of learning in greater detail. For many experts, it's difficult (if not impossible) to remember what it was like to learn fundamental concepts for the first time.



This pace also forces our staff to focus on what's in front of them for a given day. Though our staff have an understanding of what's important within a two week time frame, they really need to know today's content. This means that project prep has a lower level of personal investment than if our staff had months to prepare. *For instance, in order to learn about 3D printing, our staff start by*

designing small and simple models. This prevents us from letting our prep projects become precious and take time and focus away from the task at hand (an experience many of our creative staff can attest to). It also ensures quicker turnaround and limits what can go wrong. When they find a method that optimizes output, our staff scale up and modify their designs as time allows. We encourage our youth to prototype and work through projects in a similar manner.

We're not worried about finding projects that "work" right away or forever. It's easy to let fear take over when trying something new and look for a guaranteed win. Our programs operate with an opposing philosophy: try a project (and be prepared to fail at it) many times before deciding that it works.

So what do you do when it *doesn't work?* The real test (and solidifier) of knowledge lies in troubleshooting. Anyone who's taught anything can tell you this. Since our staff aren't necessarily "experts" it's important to prepare them for the very real possibility that things will not go as planned. To do so, content developers and program directors lay out very clear and simplified goals, with the understanding that these are our best intentions. Everything can (and often *should*) be adapted as we go.

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As we prepare and develop content, we outline benchmarks for front-line program staff in our facilitator guide for each course. These guides are the first documents that staff receive when assigned to a course and they guide their planning and preparation throughout its lifetime. Most importantly, they contain what we call our **must-do's** and **can-do's.** These help staff understand what's most important and where content goals are flexible.

Must-do's represent the *fundamental skills* that we want our youth to attain by the end of a course. This is what grounds the learning in a subject area and should allow youth to continue learning and exploring the subject going forward. Crucially, this list of skills is always very short, usually limited to *three to five core concepts* over the course of 14 weeks (or 28 class sessions). This does not make them experts! We're looking to drive sustainable learning and for us, this often means working slowly and steadily. We are confident that this will allow our youth to build expertise more effectively over time. If youth struggle in a course, we first look to evaluate their comprehension of these core skills.

For example, when we teach 3D printing, it's essential to cover the basics before moving on to advanced concepts. There are so many physical considerations in the process of 3D printing, but the first and often biggest hurdle is making sure that designs are sized properly. They can't be so big that they don't fit on the printer or so small that they break apart.

This means that youth have to measure their designs within a virtual workspace. It's not necessarily intuitive to gauge the size of an object on your computer screen. Once

they get it, though, youth can use measurement tools to make more complex objects that fit together. If youth are struggling with tolerance (the degree to which 3D printed objects fit together), we step back to reinforce core measurement skills. In this case, the egg certainly has to come before the chicken.

The must-do's are the meat of the course, so we don't want to rush through or overlook them. It's always worth doubling back to refine core-skill development, even if that means getting through less content overall. We work with a diverse group of young people, so it's important that we listen to and recognize the pace at which they learn. Sometimes this even means re-evaluating the attainability of our must-do's, so long as we really develop first-served fundamental skills. That kind of feedback is essential to us as facilitators and helps us better refine content in the future.

Can-do's encompass all the learning we hope to happen within a course. Almost every time we offer a course, the sum of the can-do's are far greater than youth or staff capacity, and that's okay! It's always better to have too much, rather than too little content to deliver. Having these goals pushes us because there's always more to learn and accomplish. This is especially true for youth that learn quickly or have pre-developed skills in a given subject area. Rather than trudge through content that they've already mastered, we can activate them with additional challenges. When youth are exceptionally skilled and hit even these higher bars, we adapt their role within the classroom to assist others. We pair youth based on skill and personality to further develop a culture of **peer-learning.**

Again, we're looking to create courses that drive learning in practical and sustainable ways. Can-do's are usefully outlined as the content that can most easily be moved around because it shouldn't impact fundamental understanding of core concepts. Furthermore, we don't despair when we don't get to everything! This leftover content becomes the starting point for next-level courses in these subject areas. We view our youth courses under the lens of research and development. With this frame of reference, adjusting our content per youth needs does not qualify as failure; it's data that informs our decisions going forward!

Concluding Thoughts

Most of the world looks to a person as an expert when they can verify their knowledge in some tangible way. For some, this may mean having a degree, certificates, or specific professional accomplishments. If you looked at DHF through that lens, many of us would be experts in something other than what we teach. None of that discounts the learning we've done in the years since the organization was founded. Have we gained tremendous insight into ways to serve our youth and community? Absolutely. Do we have more experience and information than the average person with tools and technology? Most likely. Does this make us experts? We don't think so.

To say we're experts feels more terminal than any of us are comfortable with. Deeply rooted in our organizational culture is the mantra **"always be learning."** This means that at no point do any of us arrive at the destination of figuring anything out completely. Particularly when it comes to technology as the ground is constantly shifting underneath us.

Any success we've had has come because we are comfortable with this fluidity. We firmly believe that adopting this mindset may allow others to build staff capacity and community.

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Conclusion

As youth enter a changing digital world, it will be critical that they be prepared with the knowledge, skills and social capital necessary to not only thrive, but actively take their place in society. They must not only be consumers of technology, but creators of it. They must not only be the subjects of culture, but shapers of it. And, most importantly, they must not only participate in their communities, but actively transform them. Our sincere hope is that the ideas in this report support youth-serving organizations to accomplish these aspirations.

We've highlighted a range of practices that educators can consider throughout this report. We've emphasized that technology is one important part of successful digital learning, but far from the only one. Technology plays a key role in promoting creativity, voice, local problem-solving, and identity development. And it's one piece of the puzzle when it comes to community-based digital learning. We've shown that it's critical for educators to think through a range of skills - both hard and soft - that are key to preparing youth for cultural, professional and political participation. We've shown that technology must be integrated into powerful pedagogy that builds on youth interests, engages them in real-life projects, and gives them access to valued identities and practices. We've emphasized that the most powerful digital learning happens in the context of community, with youth becoming deeply connected to those beyond their everyday experience. And we've highlighted how organizations can bring all of these facets together through effective capacity building practices, including attending to who they hire, careful structuring of educator roles, and creating cultures of continuous learning among their staff.

What should be taken away from the ideas we've offered here? We believe that the answer lies in conversation among each organization's educators, as well as among their youth. Organizations looking to start or deepen work in digital learning can begin by looking across the resources offered here and make their own meaning around what's useful. The practices here come from particular cultural and organizational contexts, and it is key for educators and organizations to first consider their own context - their youth, the communities they serve, their educators - along with the broader world they're a part of. We hope that the steps that educators and educational organizations might take from the best practices in this report will help to advance powerful new forms of learning with technology.