PLAYBOOK

BUILDING COLLABORATIVE INNOVATION NETWORKS FOR TEACHING AND LEARNING

And if America pulls together now around our young people, if we do our part to make sure every single child can go as far as their passions and hard work will take them, then we will keep the American Dream alive not just for your generation, but for generations to come.

PRESIDENT BARACK OBAMA

TABLE OF CONTENTS

CASE STUDIES

Pittsburgh has a rich history of coming together to make things. Pittsburghers forged the steel that built America's arsenal of democracy. Our civic leaders created international research universities, erected sanctuaries of human culture and the natural world, and led sweeping philanthropic efforts that reshaped communities around the world. Then, from the ashes of a decimated steel industry, Pittsburghers rebuilt.

Through innovation, collaboration, and unyielding hope, Pittsburghers reinvented their economy and revitalized their region. Today, Pittsburgh stands at the forefront of research, technology, medicine, and learning. It endures as a center for arts and culture. It is one of the most livable cities in America.

Pittsburgh's recovery didn't happen overnight, nor did it happen by accident. Our comeback was achieved through an unrelenting commitment to our people, and a deep faith in what happens when citizens come together to change their circumstances and shape their destinies.

There's no better example of this than the Manchester Craftsman's Guild (MCG). What started as an audacious vision quickly developed into a reality that reshaped a community and remade the lives of youth in a long-neglected pocket of the city. By reimagining the learning environment as a place that can nourish imagination and inspire creativity, MCG has empowered thousands of students for more than 20 years. Now a national model for arts education, apprenticeship training, and out-of-school learning, MCG is an enduring legacy to the power of people when they get organized and get going. We draw strength when we come together.

And, MCG is not alone. It's part of the Remake Learning Network, a collaboration of more than 200 organizations coming together to expand opportunities and enhance learning outcomes for young people in the greater Pittsburgh region. Working together, network members are inspiring a generation of lifelong learners through creative and imaginative learning experiences that prepare them to thrive in the 21st century.

Just as Manchester Craftsman's Guild remade opportunity for youth on Pittsburgh's North Side, the Remake Learning Network is expanding the sense of what's possible for all children throughout our region and inspiring educators in cities across the country.

William Peduto

Mayor
City of Pittsburgh

Bill Strickland

President & CEO
Manchester Bidwell
Corporation

Introduction

GREGG BEHR, EXECUTIVE DIRECTOR OF THE GRABLE FOUNDATION AND
DR. LYNNE SCHRUM, DEAN, ABRAHAM S. FISCHLER COLLEGE OF EDUCATION,
NOVA SOUTHEASTERN UNIVERSITY AND CO-AUTHOR OF LEADING 21ST-CENTURY
SCHOOLS, FOUNDING CHAIRS OF THE REMAKE LEARNING COUNCIL

Almost a decade ago (before the inception of the Remake Learning Network) we heard again and again from teachers, librarians, museum educators, youth workers, and others a common refrain that was simultaneously expected and yet astonishing: "I'm not connecting with kids the way that I used to."

This expressed frustration would, of course, have been natural if these educators had been talking about the usual challenges of the generation gap, or the gradual shift in youth culture. After all, generations of adults have voiced worries about "kids today." What was astonishing, however, was that these educators were referring to dramatic changes brought about largely by digital media and technology.

So we asked ourselves: "What on Earth had happened in such a short period of time to create this disconnect between educators and students?" Digging in to the learning sciences, we found that youth in the digital age are pursuing knowledge differently, developing their identities and interests differently, and seeking support differently. Faced with this new reality, how could we help educators in- and out-of-school connect with today's youth and develop learning experiences that engage them deeply and equip them with the knowledge and skills relevant to the world in which they now live?

We reached out to our community and quickly discovered that the Pittsburgh region was home to a broad range of creative people—not only teachers, youth workers, and museum educators but also gamers, technologists, and roboticists—who were beginning to think differently about connecting with kids.

We believed we could harness the resources in our community for the benefit of all children and youth. We were confident that we could remake learning.

TIMELINE OF REMAKE LEARNING MILESTONES

Before July 2007: First breakfast meeting at Pamela's Diner

March 2008: "Kids+Creativity Group" ideation session held at The Sprout Fund

September 2008: More than 40 organizations gather for first official Kids+Creativity meeting at WQED Multimedia

2007

2008
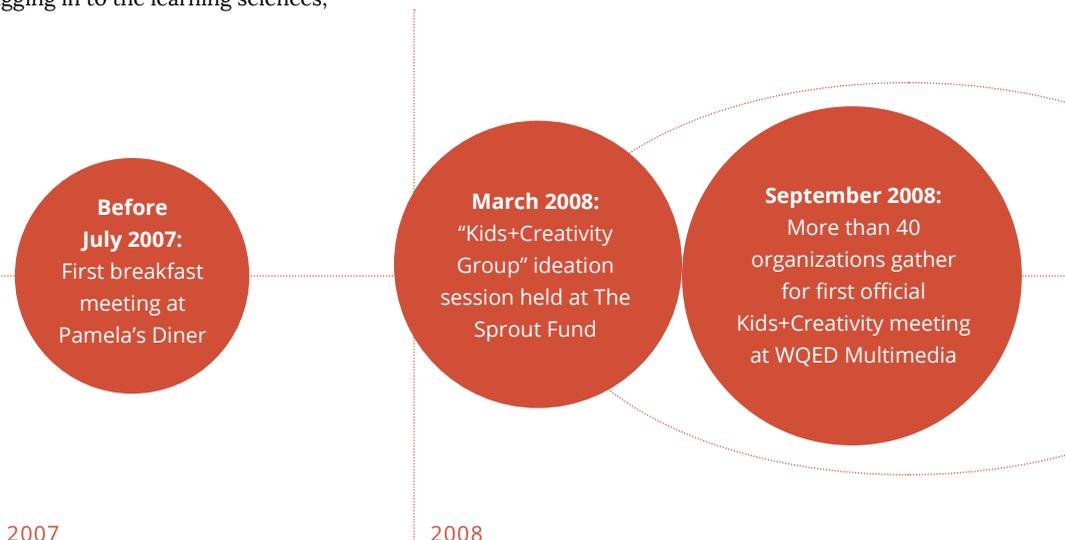
In 2007, The Grable Foundation convened an interdisciplinary group of thought leaders and field practitioners to explore how contemporary, active learning pedagogies could improve educational experiences in the region's schools, museums, libraries, early learning centers, and out-of-school program sites.

First adopting the name Kids+Creativity, this informal working group—fueled by coffee and pancake breakfasts—began meeting regularly, exchanging ideas, and collaborating on new initiatives. Ten doubled to twenty, and twenty doubled and then doubled again. Together, the group engaged academics, artists, librarians, educators, technologists, and parents in thinking anew about 21st-century teaching and learning.

Early investments awarded by The Grable Foundation and such other funding partners as the Claude Worthington Benedum Foundation, the Buhl Foundation, McCune Foundation, and the Pittsburgh Foundation included support for such leadership organizations as The Sprout Fund (a community-based grantmaking nonprofit) and the Allegheny Intermediate Unit (an educational service agency). Respected for connecting the grassroots community to major regional

priorities, in 2009 The Sprout Fund began providing catalytic support for new projects and programmatic partnerships—adding fuel to the fires of innovation. That same year, in order to catalyze innovative teaching in the region's school districts, the Allegheny Intermediate Unit began awarding STEAM Grants to enable administrators and educators to reimagine learning in public school classrooms, labs, and library spaces.

The emerging network focused on providing high-quality maker, STEAM, and digital learning opportunities that would equip children and youth with competencies they need to thrive now and in futures yet to unfold. These approaches are not just passing fads in education; they are the key to building engaging and relevant learning experiences that prepare today's youth for school, college, workforce, and life.

In 2011, after several years of successful small-scale projects and flourishing interest in Kids+Creativity, The Sprout Fund stepped in to formalize the network, enhance the individual and collective capacities of all members, and create a sustainable support structure

November 2009:
More than 30 network members present new ideas for learning at Kids+Creativity Lightning Talks at the Children's Museum of Pittsburgh

October 2010:
The Children's Innovation Project launches pilot program at Pittsburgh Allegheny K-5

May 2009:
The Center for Creativity at the Allegheny Intermedia Unit makes first STEAM Grants to school districts

June 2009:
Early Pittsburgh network efforts are mentioned on MacArthur Foundation's Spotlight on DML blog

June 2010:
BirdBrain Technologies spins out of the CREATE Lab at Carnegie Mellon as a new ed-tech venture

May 2009:
The Sprout Fund makes first micro grants to catalyze learning innovation

2010

through a coalition of major regional and national funders, including the John D. and Catherine T. MacArthur Foundation. That's when the since-renamed Remake Learning Network soared.

What began with just a handful of people and organizations has grown into a diverse network of more than 200 organizations, including more than 2,000 educators and professionals in schools, museums, libraries, afterschool programs, community centers, university research centers, educational technology companies, local philanthropies, and youth civic groups.

Recognizing the need to sustain momentum, leaders across the Pittsburgh region reaffirmed their commitment in 2014 and formed the Remake Learning Council. The Council brings together leading executives and learning scientists in business, higher education, public education, civic and cultural organizations, foundations, and government to strategically support the greater Pittsburgh region's efforts to remake learning in all the places where children and youth learn.

In the years since the network's inception, millions of dollars have been invested by regional and national funders. Thousands of educators, students, and families have been engaged in the process of learning innovation. We've witnessed remarkable projects emerge as the result of interdisciplinary collaborations that are pulling together diverse individuals, resources, and tools, and bringing them to bear for the benefit of all learners. We've seen a dramatic change in our region. Dozens of school districts are transforming their buildings, curricula, and teaching practices. More youth are participating in innovative out-of-school learning programs than ever before. And network members are being recognized as leaders in learning on the national and global stages.

Learning is indeed being remade in Pittsburgh.

We're working hard to share what we've learned so that successful strategies from the rural hills of Elizabeth, Pennsylvania are brought to Pittsburgh's urban neighborhoods and the innovations pioneered at our world-class research universities shape classroom practices in nearby West Virginia.

March 2011:
Pittsburgh sends first delegation to attend the Digital Media & Learning Conference

October 2011:
MAKESHOP opens at The Children's Museum of Pittsburgh

April 2012:
Online directory of network people, projects, and organizations first launched

September 2011:
CREATE Lab establishes first Satellite Lab at Marshall University

September 2012:
The Labs @ CLP opens at the main branch of the Carnegie Library of Pittsburgh

April 2011:
Assemble opens community space for art and technology in Pittsburgh's Garfield neighborhood

April 2012:
Grantmakers for Education hosts member briefing in Pittsburgh

June 2011:
The Sprout Fund assumes network stewardship role

2011

2012

We've also been privileged to share what we've learned so far with colleagues across the country and in cities across the world. Many have come to visit, some have heard us speak at national events, and others follow us online.

Our aims for this Playbook are threefold:

First, we want to tell the stories of the remarkable people, projects, and organizations that are remaking learning in the Pittsburgh region. They are helping children and youth develop their interests and pursue their passions while inspiring a generation of lifelong learners in our community.

Second, we want to document the techniques and strategies that have been integral to the growth and development of the Remake Learning Network so that we might achieve even greater scale and impact in the future.

Third, we want to enable you. By sharing insights, key resources, and critical lessons learned, we hope to provide educators and

community leaders with practical and actionable information, enabling anyone to take advantage of new and innovative learning practices. Learning now happens anywhere, at any time, and at any pace. And so, communities of caring adults—teachers, youth workers, mentors as well as gamers, technologists, artists, and others—need to think differently and collaboratively about how we light up every child to the joys and wonders of learning.

We've learned a lot since our first breakfast brainstorms. We've tried many things, and we've made plenty of mistakes. But ultimately, we've seen significant progress in our effort to provide all children and youth with the best available opportunities to learn and be creative.

We're confident that all of us, together, can remake learning all across America.

February 2013:
transformEd opens at the Allegheny Intermediate Unit

August 2013:
Inaugural Hive Pittsburgh Maker Party hosted at TechShop

October 2013:
The Digital Corps launches first digital literacy sessions at afterschool sites

February 2013:
Pittsburgh becomes the third Hive Learning Network in North America through the support of the John D. and Catherine T. MacArthur Foundation

February 2013:
remakelearning.org launched

August 2013:
The Dream Factory opens at Elizabeth Forward Middle School and the district joins the League of Innovative Schools

2013

November 2015: Pittsburgh Tech Council and EdSurge host ed-tech summit

December 2015: 4th annual Remake Learning Network Assembly

October 2015: *Remake Learning Playbook* published

October 2015: The Children's Museum hosts first Maker Faire in Pittsburgh

May 2014: The Children's Museum partners with the Institute of Museum and Library Services to create a national framework for makerspaces

March 2015: The Children's Museum and Kickstarter launch "Kickstarting Making" initiative to bring maker learning to schools

August 2014: Pittsburgh hosts convening of Education Innovation Clusters with Digital Promise and the U.S. Department of Education

January 2015: Kids+Creativity is renamed the Remake Learning Network

June 2014: Pittsburgh becomes a City of Learning

November 2014: Avonworth and South Fayette join Elizabeth Forward in League of Innovative Schools

2015

February 2014: The Sprout Fund hosts Open Badges Summit to Reconnect Learning in Silicon Valley with many Pittsburghers as facilitators

May 2014: STEAM Grants surpass $2 million of direct investment in school districts

September 2014: Inaugural STEAM Showcase for school districts presented by the Allegheny Intermediate Unit

April 2014: Pittsburgh receives Tribeca Disruptive Innovation Award for education innovation

June 2014: The Remake Learning Council convenes business, education, government, and higher education leaders to guide the network

2014

Remaking Learning for a Changing World

THE WORLD IS CHANGING. EDUCATION NEEDS TO CHANGE WITH IT.

The world today is more complex and interconnected than ever before. Reading, writing, and arithmetic, while still essential, simply aren't enough to prepare young people to thrive in the digital age. Communities need to come together to build on the basics and connect students with hands-on learning experiences that cultivate creativity, imagination, and grit. Our global, networked world today calls for new kinds of teaching and learning—and new kinds of problem-solvers.

Learners today need to be technologically fluent *and* imaginatively creative, yet most lack meaningful opportunities to engage with the nuts-and-bolts of technology or flex their creative muscles. According to The Nation's Report Card, only about 10% of U.S. public high schools offer classes in computer science. Meanwhile, the time and space available for integrating creative inquiry into classroom instruction keeps slipping away.

Many out-of-school programs offer exceptional learning opportunities, but equitable access remains a staggering barrier. Economists Greg Duncan and Richard Murnane have found that enrichment spending by affluent families was nearly 700% greater than the poorest families. When it comes to the promise of technology to open up new pathways of educational opportunity, the digital divide still persists. As Secretary of Education Arne Duncan wrote in April 2015, "If the technology revolution only happens for families that already have money and education, then it's not really a revolution."

Absent a radical shift in top-down educational policy, the best chance to equitably spread the adoption and speed the scale of innovative learning practices is through distributed, city-based networks. Schools remain critical to a young person's education, but so too is the learning happening in museums, libraries, afterschool sites, community centers, at home, and online. What's needed today is a new model for learning that values all learning opportunities and provides children and families with easy access to meaningful and rewarding experiences wherever they are, especially in marginalized communities.

That's where the Remake Learning Network comes in.

Formerly known as Kids+Creativity, since 2007 the network has connected Pittsburgh to the growing global movement to reimagine learning, while developing our own unique local solutions to pressing regional challenges. We've built a model for education innovation that uses technology in creative ways to enhance learning and provides opportunities for the traditionally underserved. By building a supportive network of cross-sector collaborators, the Remake Learning Network is helping educators and innovators provide *all* children and youth with opportunities to develop their own interests, to work collaboratively to find creative solutions to problems, and to experiment, fail, and start over with new ideas.

In the years since we began this work, we've seen our region transformed. Teachers and administrators work with designers and technologists to collaboratively develop new course curricula. Learning scientists are embedded in out-of-school learning programs to not just observe, but to co-design more effective connected learning experiences. Education technology startups are partnering with educators and students to create technologies that enable deeper learning rather than simply adding expensive gadgets and gizmos to already stretched budgets. And more of our region's young people are enrolled in out-of-school learning programs than ever before, with participation rates more than 10% above the national average.

In many of our region's school districts, you won't find children sitting in rows listening to the "sage on the stage." Instead, through the support of the Remake Learning Network, students are collaborating with their peers in project-based learning where teachers act as a "guide on the side." These efforts have resulted in three of our region's school districts—Elizabeth Forward, South Fayette, and Avonworth—being inducted into the League of Innovative Schools. And, beginning in the 2015-2016 school year, Pittsburgh Public Schools established a STEAM learning magnet school, bringing interdisciplinary, project-based learning to the region's largest urban public school system.

Maker learning has captured the imagination of tinkerers of all ages: from the MAKESHOP at the Children's Museum of Pittsburgh, where families learn together through hands-on, DIY creativity to community makerspaces like the Maker's Place in Pittsburgh's Homewood neighborhood where teens are using real-world maker skills to turn their ideas into entrepreneurial ventures.

Following the lead of The Labs @ CLP, the Carnegie Library of Pittsburgh's digital teen learning spaces, our region's libraries are reimagining their role. Historic institutions like the Carnegie Library of Homestead are transforming unused spaces into media making studios where teens use professional equipment to make movies and music. Pop-up libraries like the Allentown Learning & Engagement Center in Pittsburgh's struggling Hilltop community are bringing resources—in both print and digital format—to communities in need. And nearby small town libraries, like the Millvale Community Library, are creating spaces dedicated for tweens and teens eager for more opportunities to make and be creative.

Early childhood centers are being thoughtful in their use of new digital media tools. Committed to using technology to unlock opportunities for the traditionally underserved, technologists in the CREATE Lab at Carnegie Mellon University developed Message From Me, a tablet-based app that enables young children at more than 100 Head Start centers around Allegheny County to compose and send photo and audio messages to their parents and families sharing stories from their school days. At the same time, we're seeing a greater emphasis on play as a mode of learning for young children. The Pittsburgh Association for the Education of Young Children (PAEYC) maintains a mobile Imagination Playground to deploy in elementary and pre-schools that lack permanent play equipment. PAEYC also partnered with the Pittsburgh Parks Conservancy, the Carnegie Museum of Art, and other members of the Remake Learning Network to launch the Pittsburgh Play Collaborative, a new initiative that is expanding play-based learning opportunities for students of all ages.

Our network's educators are receiving national recognition for their work. The Children's Innovation Project, led by Pittsburgh teacher Melissa Butler and artist Jeremy Boyle, was covered by *The Atlantic*. Teacher Michelle King spoke alongside MacArthur Foundation Director of Education Connie Yowell about building a connected learning community at the 2014 Digital Media & Learning Conference. Kris Hupp from Cornell High School and Aileen Owens of South Fayette Township School District, two Pittsburgh-area educators deeply involved in the network, received Digital Innovation in Learning Awards from Digital Promise and EdSurge. In spring 2015, Corey Wittig, Digital Learning Librarian at the Carnegie Library of Pittsburgh, traveled to Spain to speak about the innovation of American libraries.

And these are only a small sampling of what Pittsburgh's educators and innovators are doing to transform teaching and learning in our region. This exciting momentum didn't materialize overnight, and it didn't come out of thin air.

We've been working together for years to build open and collaborative communities of practice where everyone contributes to a shared vision of learning remade in Pittsburgh. In the following chapters, we'll take a look under the hood to show you how the Remake Learning Network is structured, how it operates, and how it connects schools, museums, libraries, afterschool programs, and ed-tech companies to enhance learning opportunities for children and youth—and how you can build a network to create similar change in your own community.

TAKING ADVANTAGE OF CONNECTED LEARNING OPPORTUNITIES

A note from Mimi Ito, Professor in Residence, University of California–Irvine, Donald Bren School of Information and Computer Sciences

Young people today are constantly connected and have information at their fingertips in ways that are transforming how they learn and socialize. So, as educators, parents, policymakers, and learners, we need to take a hard look at our own role in how to make the most of the opportunities for learning, especially those that come with our open, networked, online world. Education is not just about delivering expertise and content, especially in an era when information and knowledge are abundant. And it shouldn't be primarily about assessment and credentialing, particularly when we are seeing that learning happens anywhere, anytime, and that the demand for learning never stops. Educational institutions need to connect young people's learning to their social lives, their communities, their interests, and their careers. That's where connected learning comes in.

Connected learning, an educational approach designed for a rapidly changing world, involves diverse learning institutions committed to providing youth with a range of experiences to develop their knowledge and expertise based on their unique interests and potential. Through connected learning, institutions like schools, museums, and libraries, and networks like Remake Learning in Pittsburgh, can, and already are, taking part in innovative strategies, leveraging digital media to make learning more relevant and engaging to youth, and linking the three crucial spheres in a learner's life—peers, interests, and academic pursuits.

DESIGN PRINCIPLES

LEARNING PRINCIPLES

INTEREST-POWERED

OPENLY NETWORKED

PRODUCTION-CENTERED

ACADEMICALLY ORIENTED

PEER-SUPPORTED

SHARED PURPOSE

Voices of the Network

The success of the Remake Learning Network rests on the strengths of its individual members. While they share a vision for the future of learning, each member contributes a unique perspective to our collective work.

In interviews conducted in 2015, network members discussed their motivations, experiences, insights, and future hopes. In this selection, network members reflect on what innovation means for teaching and learning.

MICHELLE KING
ENVIRONMENTAL CHARTER SCHOOL

"The work that I think I can do best as a teacher is to ask good questions. What are the real questions that lead us to deeper inquiry about the kinds of places we want to create for our young people and the kind of society we want to create? This is all the work that's done in the laboratory we call school."

ROSANNE JAVORSKY
ALLEGHENY INTERMEDIATE UNIT

"There's so many great things happening, how are you going to discern what will make a difference for students in a classroom? And that's really where we constantly have this balance. We want the excitement. We want the motivation. We want the student engagement, but ultimately we need those student outcomes."

DR. TOM AKIVA
UNIVERSITY OF PITTSBURGH

"It's increasingly clear to those of us who study out-of-school time that kids learn everywhere. We need to pay more attention to the learning happening outside of school, how the programs work, and how we can provide high quality offerings."

DR. LISA BRAHMS
THE CHILDREN'S MUSEUM OF PITTSBURGH

"Everything in MAKESHOP is flexible. Nothing is fixed except for the beams that hold up the structure. And that's intentional so that we are learning every day and understanding ourselves better every day and understanding the needs of our visitors every day and understanding the differences in how visitors learn."

MELISSA BUTLER
CHILDREN'S INNOVATION PROJECT

"We redefine innovation as finding something new inside something known as opposed to making something, and we redefine technology as raw material. We care about children having access to the thinking of technology, not the stuff of technology."

TOM LAUWERS
BIRDBRAIN TECHNOLOGY

"We focus on making the software easy to install in a school setting. And then what is the curriculum around that? Are there classroom examples that we can show teachers? What is the professional development situation like? Is there a way for a teacher to be trained? All of those additional things are part of the product. They're not just add-ons. They are an essential part."

Hear full interviews at playbook.remakelearning.org

The Learning Network

Networks drive today's world. The hierarchical, centralized approaches that have worked in the past are poorly suited to a world where dispersion—of ideas, opportunities, and risks—is the reality. Highly coordinated communities of people and organizations allow for synergies, swapping ideas, rubbing shoulders—working together toward a shared vision.

This new reality isn't limited to the worlds of high technology and global business. In its 2014 report, the Aspen Institute Task Force on Learning and the Internet called for "a shift from the traditional focus on one learning institution, the school, to a focus on the learner and all the places where there are opportunities to learn, like museums, libraries, after-school programs, and the home." The report's overarching recommendation is to build learning networks (made up of online and physical places) to connect and spread opportunities for children and youth.

What does that look like? To build a community where anywhere, anytime learning is a reality, cities and regions need to tap into their many talents and resources to create a vibrant ecosystem of opportunities. That's the approach we've taken in Pittsburgh, and we're not alone. "I have come to see that an ecosystem for learning is essential," Michele Cahill, program director of urban education at the Carnegie Corporation of New York, has said. "Schools themselves have intellectual capital, but a city's ecosystem has so much more of it. Why are we keeping it so separate?"

The short answer: Probably because these networks don't just materialize, even when a city has a wealth of resources. They take planning, coordination and time to emerge.

The U.S. Department of Education, in partnership with Digital Promise, has been exploring network-based approaches through its work to develop Education Innovation Clusters, inspired by Harvard Business School professor Michael Porter's "Cluster Development" theories. Dr. Porter demonstrated that clusters of interconnected firms, suppliers, related industries, and specialized institutions raise productivity of each organization as well as the whole region.

The cluster concept for learning envisions three key partners: educators, researchers, and commercial enterprises.

- ▸ **Education partners** pilot new solutions with input from students and teachers. Educational partners might be early learning providers, public or private schools, libraries, community centers, afterschool programs, institutions of higher education, or virtual learning organizations. They provide the flexibility and capability to rapidly develop, test, and collect data on new learning approaches and educational products.

- ▸ **Research partners** conduct basic and applied research. They both inform and help validate the products and approaches developed in the cluster.

- ▸ **Commercial partners** take the new ideas and products to market. They also provide investment capital.

Learning Environments

Learning innovation begins where learning happens—in schools, museums, libraries, afterschool sites, and community centers.

Education partners, both in school and out-of-school, are the locus of learning in any network—not just as learning institutions, but also as hubs for information, connection, and access to critical community resources. Enterprising teachers trying new approaches in classrooms or visionary administrators reaching out to external partners are jumpstarting change in districts, both from the bottom-up as well as from the top-down.

But learning doesn't end when the school day ends. A learning network would be incomplete without the participation of key out-of-school learning environments.

Large cultural institutions like museums and libraries, as well as established national organizations like YMCAs and Boys & Girls Clubs are already deeply trusted in many communities. As learning environments, these institutions often employ instructors, mentors, and coaches who develop their own educational programing. Neighborhood-based afterschool sites, community centers, enrichment providers, and faith-based programs are free, safe, and accessible places for children and youth to connect with one another, seek the academic help they need, and pursue their own learning interests without travelling too far from home.

Intermediary organizations are important conduits for distributing information, resources, and support to front-line education partners. For example, in the Pittsburgh region, the Allegheny Intermediate Unit provides professional development and other support services to teachers in 42 regional school districts, while Allegheny Partners for Out-of-School Time

provides ongoing support and coordination for hundreds of afterschool learning sites large and small. As members of the Remake Learning Network, these and other intermediaries advance the spread and adoption of innovative approaches to teaching and learning among the organizations they serve.

CONTRIBUTE TO THE NETWORK
Space and time to engage students in innovative learning programs, instructional expertise, shared learning content

RECEIVE FROM THE NETWORK
Funding to support innovative practice and professional development, introductions to collaborative partners, greater exposure to target audiences

Innovation Research & Development

From new technologies to new pedagogies, higher education institutions are engines of innovation.

Higher education institutions are sources of equipment and talent, basic and applied research, and professional connections to local and national leaders.

Universities are hubs of intellectual capital at the forefront of human investigation and discovery. They house precocious students and erudite faculty importing and exporting ideas as part of a global academic community. By bringing the latest knowledge and most advanced expertise to bear, university labs and research centers act as generators of new ideas and pilot programs that can be put into practice through effective partnerships with other members of the network.

Outside of academia, independent tech developers and designers, as well as public-private innovation hubs and tech-transfer offices, help bring innovation from the lab to the market. By building bridges between developers and the audiences for which they are designing, the network turns the community into a collaborative test-bed for innovation.

Working closely with educators both in- and out-of-school, researchers and designers put their latest innovations into practice in a variety of learning environments. That enables instant feedback from students and teachers and informs the design of early-stage products. Coupling this iterative process with ongoing professional development for educators, innovators ensure that their creations are relevant and approachable.

Additionally, outreach is critical to assuring that powerful new tools don't get stuck in the ivory tower of academia. In Pittsburgh, the CREATE Lab Satellite Network connects researchers and developers with regional schools of education so that tomorrow's teachers can experiment with new technologies and integrate their use into lessons and curriculum planning. And through programs like Carnegie Mellon's Entertainment Technology Center, student design teams take on projects for "clients" from the Remake Learning Network, including school districts testing gamification in the classroom and museums seeking to create more immersive learning environments.

CONTRIBUTE TO THE NETWORK
Access to world-class talent and technology, international connections inside and outside of academia, technical assistance for local innovations

RECEIVE FROM THE NETWORK
Funding to support pilot projects, more opportunities to meet and collaborate with educators, new pathways from laboratory to marketplace

Learning Scholarship & Advocacy

Grounding action in research and making the case for innovative practices that work.

In addition to being sources of new technological innovation, higher education partners provide critical evaluation resources to help practitioners test the effectiveness of their programs.

Learning scientists and design researchers actively evaluate new approaches to teaching and learning being implemented throughout the network. Their work informs the design and implementation of new products and pedagogies, and evaluates the effectiveness of new practices or policies, and the network itself.

In Pittsburgh, initiatives like the University of Pittsburgh Center for Learning in Out-of-School Environments (UPCLOSE) embeds research and design fellows within education organizations to develop deep understandings of existing programs and provides expert consultation on the design of new programs.

Advocacy organizations, particularly those focusing on specific areas of importance like early childhood education or afterschool enrichment, use research findings to advance the spread and adoption of innovative learning practices within their field. These organizations also raise greater awareness among elected officials and other policymakers.

For example, the Pittsburgh Association for the Education of Young Children (PAEYC) campaigns for greater emphasis on early childhood education on the local and state level, while also offering professional development opportunities to help early childhood educators learn how they might integrate new digital tools and technologies into their classrooms.

By contributing to national academic discussions, research and advocacy organizations also spread research findings to a global community of practice. At the Fred Rogers Center for Early Learning & Children's Media at Saint Vincent College, research fellows and children's media experts study programs led by network members and share their learnings with key stakeholders. These efforts have shaped national recommendations for the appropriate use of digital media in early childhood education.

CONTRIBUTE TO THE NETWORK
Research and analysis of the learning landscape, thought leadership, a voice in the public discourse about education

RECEIVE FROM THE NETWORK
Funding to support research and evaluation, sites to study innovative approaches to learning, greater exposure to share findings and messages with target audiences

Universities are hubs of intellectual capital at the forefront of human investigation and discovery; they house precocious students and erudite faculty importing and exporting ideas as part of a global academic community.

Commercial and Entrepreneurial Engagement

Designing and marketing new products with input and investment from the network.

Digital technology products—from touchscreen apps and tutoring software to hands-on kits and online platforms—are the textbooks and chemistry sets of the 21st century. The ed-tech firms and media companies creating these learning experiences are an integral part of the network, whether they locate their businesses in the community, partner with educators to co-design and test new products, or work with network members to adapt existing tools and services to meet local needs.

Ed-tech incubators facilitate connections between entrepreneurs and their end users by inviting educators and students into the design and development process—from the idea generation stage to user testing and beyond.

In the Remake Learning Network, the Pittsburgh Technology Council launched the Creative Industries Network to support companies working in a variety of fields, including education technology. And through informal activities like ed-tech meet-ups, firms connect with one another, learn about investment opportunities, and participate in "design jams" with teachers.

Small ed-tech enterprises are engines of economic growth for communities. They attract talent with a heightened appreciation for high quality in the learning environments for their families. Schell Games, a game design and development company founded by Carnegie Mellon University professor Jesse Schell, has grown to the largest game developer in Pennsylvania with more than 100 employees.

The contributions made by companies to the network aren't limited to technology development. Major regional employers want today's students to be prepared with the knowledge, skills, and dispositions they'll need to be effective members of tomorrow's workforce. They often focus their corporate giving efforts on learning programs that cultivate these competencies and can be a source of funding for innovative training and workforce development programs.

CONTRIBUTE TO THE NETWORK
Early access to new education technology products, input on the needs of regional employers, resources to support new programming

RECEIVE FROM THE NETWORK
Product input from educators, students, and learning scientists, increased exposure to potential customers and future employees, more opportunities for public-private partnership

Strategic Stewardship

Guiding the network, supporting its members, and sustaining an environment where learning innovation thrives.

The Remake Learning Network first came together as a small group of like-minded people who met to exchange ideas over breakfast. In its earliest days, these personal, informal gatherings helped innovators communicate, seed some of the first collaborative projects, and build momentum. But as networks grow in size and complexity, direct coordination often becomes necessary.

Even in a self-organizing network where partners come together and begin collaborating right away, intentional coordination helps networks go farther, quicker. Philanthropies often lead the way, using funding to focus the network's attention and set regional priorities.

Rather than selecting a single organization to lead the network, consider a spoke-and-hub or constellation model that empowers teams of organizations to act as "network hubs" for different sectors of the network. The best candidates for

these hubs are intermediary organizations that act in the best interests of the network, allowing other network members to focus on their core mission and programmatic activities.

Hub organizations play several roles. As conveners, they bring people together and build the field. As catalysts, they invest money and resources to get new ideas off the ground or help exciting projects to develop. As communicators, hub organizations enhance networks members' ability to tell their story effectively and efficiently, internally and externally. As champions, hubs lift up the accomplishments of network actors, regionally, nationally, and internationally. And, as coordinators, hub organizations connect the dots, recommend priorities for the network, and connect those priorities to national resources.

In Pittsburgh, The Sprout Fund, a nonprofit organization, serves as a connector of the many spokes of the network and offers a suite of support services to all network members. At the leadership level, the Remake Learning Council brings together major community leaders drawn from government, higher education, school districts, and the private sector. The Council sets a long-term agenda for the network and brings the collective resources of Pittsburgh's major institutions to bear.

CONTRIBUTE TO THE NETWORK
Funding support and other resources, network coordination and leadership, greater exposure to partners and supporters outside the network

RECEIVE FROM THE NETWORK
Community of local educators & innovators ready to put learning innovation into action

Regional Strengths and Priorities

Build on regional strengths and channel them into focus areas where the network can make the biggest impact.

With a supportive network structure in place, it's important to identify key areas of focus that align network activities with regional priorities and build on local strengths.

Focus areas should be based on each region's unique characteristics. Perhaps your region has a concentration of advanced manufacturing industries. Then you may consider maker learning opportunities that prepare students for careers in this field. Or your region may have a wealth of arts and culture institutions that can come together to provide learners with opportunities to deeply develop their creative capacities. You can easily see how Los Angeles might focus on the entertainment industry and media making, while in Houston, a dual focus on space exploration and energy might make the most sense.

In Pittsburgh, the Remake Learning Network is leveraging regional strengths in a number of areas:

▸ **Robotics:** With the leadership of Carnegie Mellon University, Pittsburgh is a global hub for lab-to-market robotics technology. So it's only natural that programs and tools for learning, teaching, and designing robotics are being developed in our network.

▸ **Gaming:** Regional assets like the Entertainment Technology Center and local companies like Schell Games and Zulama position our network well to dive deeply into educational gaming and playful learning.

- **Early Learning:** The legacy of media pioneer Fred Rogers is alive and well in Pittsburgh through both the Fred Rogers Company, which produces children's media like "Daniel Tiger's Neighborhood," and the Fred Rogers Center, a research institute that studies and advocates for quality children's media made for the digital age.

- **Youth Voice:** Pittsburgh is home to several independent media companies and schools working in radio, podcasting, as well as film and video production. Organizations like SLB Radio, Pittsburgh Filmmakers, and Steeltown Entertainment create a rich environment for youth to produce their own creative media. And initiatives like Hear Me and the YMCA Lighthouse program amplify the voices of youth on important social issues.

In addition to these regional strengths, the network has also identified three approaches to learning that are critical to preparing youth to thrive in the 21st century:

- **Maker Learning:** Students learn how to work together and to reshape the world through hands-on tinkering, hacking, and building with real tools and materials, making combines physical and digital skills from science and engineering, technology and media, crafting, and the arts to learn how to work together to reshape the world.

- **Digital Learning:** New tools are transforming how we learn, socialize, and participate in the world. The pace of change in the digital age will only continue to increase, encouraging everyone to become adept producers and thoughtful consumers of digital media.

- **STEAM Learning:** Purposefully incorporating elements of multiple disciplines—science, technology, engineering, arts, and mathematics—STEAM programs develop learners ready to address the complexity of real-world problems by putting their curiosity and creativity to work.

With these areas of focus for the Remake Learning Network, we define the kinds of learning experiences we seek to create and identify opportunities to partner with national leaders. For example, through STEAM Grants offered by the Center for Creativity at the Allegheny Intermediate Unit, regional school districts can seek up to $20,000 in funding to support the meaningful integration of STEAM learning practices in their schools. To expand access to digital learning opportunities, The Sprout Fund worked with Allegheny Partners for Out-of-School Time to create the Digital Corps, a team of trained digital learning mentors who are embedded in community learning sites throughout Pittsburgh and Allegheny County. These mentors provide hands-on, project-based digital learning workshops free of charge. And through the MAKESHOP at The Children's Museum of Pittsburgh, school teachers and informal educators can take part in Maker Educator Bootcamps that provide professional development for those seeking to implement maker learning practices in their classroom or program.

Voices of the Network

The success of the Remake Learning Network rests on the strengths of its individual members. While they share a vision for the future of learning, each member contributes a unique perspective to our collective work.

In interviews conducted in 2015, network members discussed their motivations, experiences, insights, and future hopes. In this selection, network members reflect on the evolution of the Remake Learning Network, its past and its future.

CATHY LEWIS LONG THE SPROUT FUND

"We really want a context for understanding how to maximize new learning opportunities for young people. So taking a network approach, allowing thought leaders in different centers of excellence within our region to contribute to that overall learning equation for a young person becomes really important. So when you begin to bump up educators with technologists, you can really get something different than if you just had educators working with educators and technologists working with technologists."

DR. BART ROCCO
ELIZABETH FORWARD SCHOOL DISTRICT

"This was a completely different way of looking at schools and how you redesign spaces for children. We learned basic principles about the design process, how we need to teach children these ideas of resiliency and that failure is part of the process of learning and that habits of mind will help kids move forward in the world that they're going to enter because it's a different kind of a process than it was years ago."

Hear full interviews at playbook.remakelearning.org

DR. ILLAH NOURBAKHSH
CREATE LAB

"CREATE Lab is fundamentally about community engagement. What we do is pick a community of practice and then work with that community of practice to understand their needs to improve the world socially and then innovate with them. So it's what we call participatory design. It's interesting because the whole Remake Learning Network is about participatory design."

DR. DREW DAVIDSON
ENTERTAINMENT TECHNOLOGY CENTER

"When the network started, it seemed like a really great fit for us because we're always looking for partners who have a design challenge. So for our educational goals, like giving an interdisciplinary team an interesting and creative design challenge for the semester, can also help a school or a museum or a library."

GREGG BEHR
THE GRABLE FOUNDATION

"I hope that ten years from now, this work doesn't look like it looks right now. We're going to learn differently. And ideally this motivates schools and museums and libraries and other places of learning that want to be relevant to today's children and youth to the need for that continuous improvement. It's about meeting today's kids where they are, not where we want them to be."

LINDA HIPPERT
ALLEGHENY INTERMEDIATE UNIT

"I believe every quality educator wants to do good things in the classroom. Just like your medical doctor has changed in the procedure he or she is using, educators need to do the same thing to address the needs of students for what we call 21st-century skills, and we're well into that now."
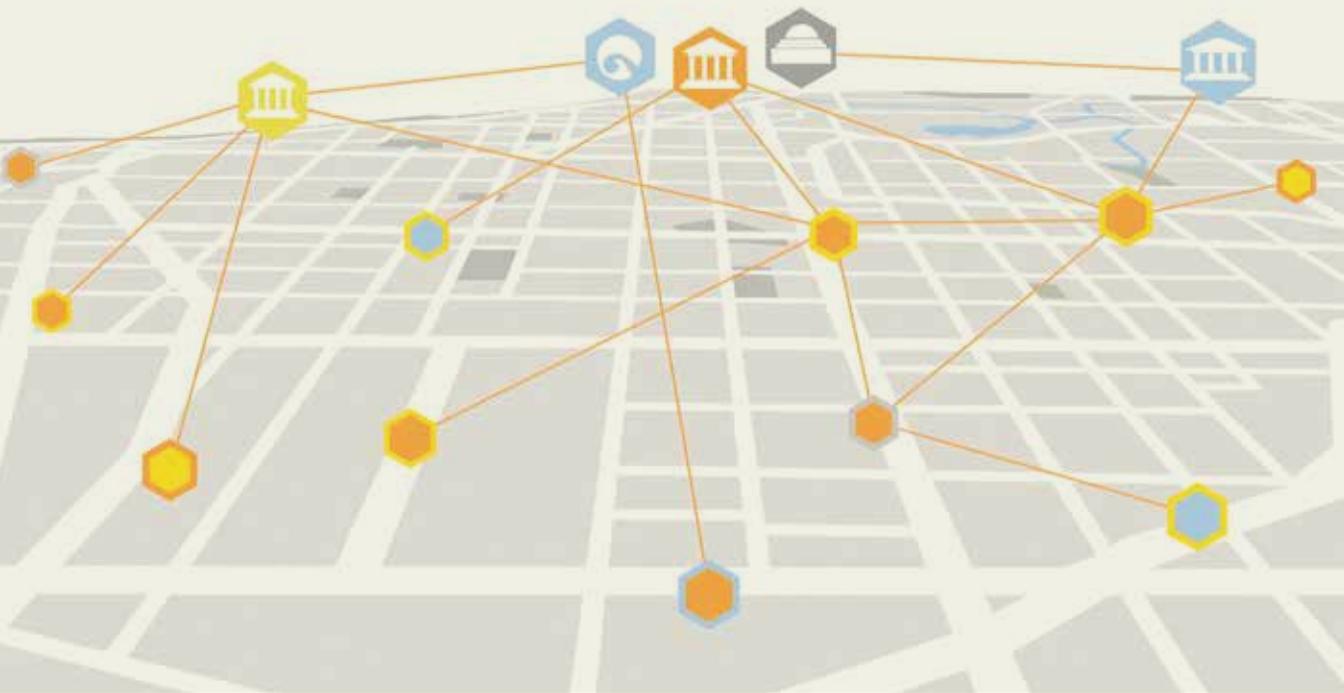
How Networks Can Transform Learning

MARK SURMAN, EXECUTIVE DIRECTOR, MOZILLA FOUNDATION

There is near consensus that we need to transform our education system. The 9 to 3 classroom was designed to help us industrialize: to help farm kids become city kids with the literacy and regimen needed to be factory workers and office clerks. The thing is: we don't live in an industrial world any more.

We live in a world where all of our lives are to some degree tied into the culture and technology of the web. We also live in a world of service and creative jobs, where critical thinking, collaboration, flexibility, adaptivity and digital skills are just as critical to being able to read and write. Even in industrial and agricultural jobs, the Internet and 21st-century work practices are increasingly a part of how work gets done. Unfortunately, our education system, by its very design, is not suited to help young people gain the skills and mindsets they need to succeed in this world.

The good news: educators, parents, entrepreneurs, policy makers and young people themselves are stepping up to fix this. They're mashing up John Dewey. Learning by making, playing, inventing and sharing. Making learning more social and collaborative. Infusing digital skills and tools into all that they do. And tapping into the knowledge and humanity that sits inside the global Internet. These people are social innovators, rolling up their sleeves to develop fresh approaches that create new ways to learn – and giving young people new ways to thrive.

The biggest challenge we have right now isn't an innovation challenge (or, not primarily). As you flip through it, you'll see that this book is full of innovations that have great promise.

The real challenge we face today is one of spread, scale and equity. We must spread the innovations we see emerging so they're in everyone's hands and minds. And this means everyone: children in America born into poverty on average get 6,000 less hours in learning than their middle class peers by grade 6. In particular, they tend to get far less access to the kind of innovative out of school programs that teach 21st-century skills. If we want to tackle challenges like spread, scale and equity, we need to change the system at some level.

The real challenge we face today is one of spread, scale and equity. We need to spread the innovations we see emerging so they reach everyone's hands and minds.

One way to tackle systems change like this is with open, collaborative networks: humans connected to each other bringing their own ideas and solving their own part of the problem. Networks lend themselves to this kind of change because no one institution has the mandate or resources to take on massive, systemic issues like transforming education. This is fairly obvious. The less obvious – and more powerful point – is that networks have the potential to slowly transform systems by sneaking into the cracks. A single passionate educator can bring an innovative practice to a school or a city. Out-of-school spaces like libraries and museums can invent and try out radical new programs. And young people themselves can simply follow their passion on the Internet and find others to discover and create with. Together, members of the network come up with ideas, vet for the best ones, try things out, make things better, and over time start to transform their approach to teaching and learning. As this happens, open minded people nearby start to say. "Hey, something is different here. And it's kind of cool. I'm going to try it." From there, innovations seep more deeply into the cracks.

We've seen this over and over again with the Hive Learning Networks that Mozilla runs in a number of cities around the world. Hives are local networks of educators committed to bringing connected learning and digital literacy into how they teach. The main thing these educators do together is share ideas, try out new tools and, in many cases, invent new curriculum and programs together: an educator at a science museum working with

a digital literacy org to get kids collecting data about plants in a local park (skills: research, design, critical thinking, basic digital content creation); or a local library network and a group teaching hip hop developing a program for kids who want to produce their own music (skills: creativity, entrepreneurship, planning, advanced digital literacy). By working on these collaborative projects – and through regular meet ups and teach ins – educators also develop their own connected learning and digital literacy skills. In a sense, a Hive is at once an open source digital literacy lab and a peer-to-peer professional development program.

We've seen similar approaches with Pittsburgh's Remake Learning Network (which is tied into Hive). The thinking in Pittsburgh was this: a city is an ecosystem with many actors and many interdependencies. To solve complex problems and achieve long-term goals, people need to put their energy together around a common vision. Remake Learning brought together educators, designers, technologists, researchers, artists, entrepreneurs and community members around the idea that they needed to transform education if they wanted Pittsburgh to be the best place to live, work and raise a family. Each member of the network acted independently to pursue their own mission *and* was committed to a loose but intentional affiliation to these common goals. By building a network that made connections between all the city's assets and resources, Remake Learning created the kind of openly networked approach that helps innovation spread.

As networks like Hive and Remake Learning mature, we start to see innovation not only in the cracks of the system, but also at the heart of the system itself. The growth of creative digital literacy programming in New York City provides an example of this. Hive New York was the birthplace of Mozilla's web literacy work—an effort to help people learn how to read, write and participate on the web. As an initial spark in this effort, enterprising educators in organizations like MOUSE and the New York Public Library helped Mozilla create a program that quickly gets young people making things together. It then builds more real-world skills like resilience and advanced creativity and technical skills from there. After three years working with educators like these, this approach is now part of the thinking being integrated into the New York Department of Education's Office of Post Secondary Readiness. Their Digital Ready program connects Hive organizations to schools to provide the kind of digital learning experiences that schools cannot otherwise offer. Ideas that emerged and grew "in the cracks" have gained the credibility and strength needed to become a part of a more mainstream plan for educational transformation. This is how innovation spreads—and how networks have an impact.

This slow shift into the mainstream isn't about spreading for spreading's sake. It is about making 21st-century skills that young people need today available to everyone – whether they can get to a specialized after school program or not. Hives are very focused on who learns, why and when, in great part because network leaders and members share a commitment not only to new skills and new approaches to learning, but also to equity. With the right approach and patience, the network approach can start to move the ball on the equity agenda.

One critical element in the effectiveness of these networks is "working in the open." This includes a number of simple practices commonly associated with open source software:

> When people build things together
> they tend to own them emotionally
> and want to roll them out after they are created.

making curriculum and tools easy for others to discover; publishing using an editable format that allows others to freely use and adapt them; using an open license like Creative Commons. It also includes a set of work practices that make it easy for people to collaborate across organizations and locations: collaborative writing in shared online documents; shared public plans on wiki or other editable platforms; progress reports and insights shared in real time and posted on blogs. These simple practices are the grease that lubricates the network, allowing ideas to flow and innovations to spread. More importantly, they make it possible for people to genuinely *build things together*—and learn along the way. This point cannot be emphasized strongly enough: when people build things together they all tend to own them emotionally and want to roll them out after they are created. If the people building together are from different institutions, then the innovations in question spread more quickly to more institutions.

Another key element is connecting these city-based networks to each other. In 2014, we created Hive Global: an umbrella network to connect New York, Pittsburgh and a dozen other cities aiming to transform learning and give young people the skills they need for today's world. At a global level, this effort provides ways for local educators to see what is happening in other cities, get copies of program materials and curriculum they might try in their own work and, from time to time, travel to work with peers in other cities and other countries. This global work is essential fuel for the work of local educators who are able to adapt new ideas quickly to their own local context. The result is an approach to innovation which is at once global and local.

In the past, social innovators like the members of Hive and Remake Learning could only share information through informal networks or trade publications with limited distribution. In the age of the web and open source, we have the opportunity to build networks where ideas move much more fluidly—and where new innovations seep more quickly into the cracks. As these networks mature, they have the potential to spread innovations beyond the cracks. They have the potential to make new skills and new ways of learning available to everyone. They have the potential to change the system.

What does this mean for transforming education? Hopefully it means that we're moving toward a future where young people have the skills and mindsets they need to thrive in today's world. If we can build a future where this is the mainstream of education, we can help *all* young people not just get a job—we can also help them pursue their own path and figure out who they want to become. Whether it's Pittsburgh or New York or anywhere, that's the kind of future I want to see us build.

Network Support Strategies

It's one thing to plot people and organizations in an idealized network structure. The real challenge is developing a supportive infrastrucutre strong enough to guide that network forward, yet flexible enough to get out of the way and let the network members take the lead.

The Remake Learning Network operates several programs and services to support innovative people and organizations in the greater Pittsburgh region.

We've organized these network support strategies into five action areas:

▸ *Convene* a community of practice;

▸ *Catalyze* innovative learning projects;

▸ *Communicate* within and outside the network;

▸ *Coordinate* network members to maximize impact; and,

▸ *Champion* the network's accomplishments.

Within each action area, this chapter explains the theory of change that connects our activities to our outcomes, describes how the strategies have evolved over time, and provides starter ideas for implementing these techniques in your community.

These strategies can be executed in whatever order makes sense for you. They are presented in the general order in which they were established in Pittsburgh, beginning with the earliest activities to support a nascent network and concluding with more advanced activities to formalize and sustain a maturing network. As you read each strategy section, you'll find more details about how, when, and where we applied each strategy to achieve specific goals.

> **For more detailed step-by-step instructions for implementing plays based on these strategies, flip to the Appendix at the back of the Playbook.**

CONVENE

Bring together a diverse cross-section of your community, organize them around a shared vision, and keep them engaged with ongoing opportunities to grow professionally and participate in the creation of communities of practice.

Building a collaborative network begins with bringing people together. You can deploy several strategies to convene relevant people and organizations. Ongoing events enhance the individual and collective capacities of network members, as well as create opportunities to import knowledge and expertise from outside the network.

Activities can take a variety of forms—from face-to-face in-person meetings to virtual exchanges taking place online—and can range in terms of size, duration, and formality. Match the structure of the event to the goal of the convening. We've

found that regular meet-ups help peers develop a shared agenda for their field, while occasional larger gatherings of the entire network create a sense of cohesion and momentum among a diverse constituency that may otherwise have no other means of connection.

In the short-term, convening strategies enable you to recruit interested people and organizations to join the network, improve internal communication and coordination, and share relevant information and resources across organizational boundaries.

Among network members, convening strategies create an environment in which individual educators, innovators, and practitioners are better informed and equipped to pursue opportunities, confront challenges, and engage in collaboration. The goal is to further seed the ground and spur innovative learning projects and programs.

In Pittsburgh, these strategies have been essential to building the field of professionals who feel connected and empowered to do more because of their participation in the network.

CONVENE STARTER IDEAS

Host Network-Wide Events: Invite all network members to gather for important events where members can establish relationships, focus their attention on issues and opportunities of critical importance, collaborate directly in facilitated discussions, reflect on past accomplishments, and look ahead to potential future opportunities.

Offer Ongoing Networking Opportunities: Host open and informal meetings for small groups of network members with shared interests to provide ongoing opportunities for network members to meet, share, and collaborate, whether in face-to-face meetups or through online webinars and hangouts.

Emphasize Professional Development: Offer continuing education credits to educators seeking to incorporate new and innovative teaching methods into their practice, or partner with established professional development agencies to offer credit at network events so that more educators find valuable professional opportunities through the network.

CATALYZE

Empower network members to put their ideas into action. Provide financial and other support for new initiatives and programs that directly impact children and youth, and create proof points for why learning innovation matters.

High-quality learning innovations aren't free, but they don't always require a massive influx of money either. Collaborative projects led by enterprising teachers, technologists, researchers, and community partners can be catalyzed through small-scale funding opportunities ranging from $5,000 to $25,000.

Offering regular, ongoing funding opportunities open to a diverse range of people and institutions makes the network more open and approachable. It's equally important to stay responsive to the real needs and priorities of local communities.

Design a variety of funding mechanisms that appeal to specific constituencies but insist that active cross-sector collaboration be built into all of them. Research fellowships for emerging scholars and program managers build the brain trust of the network, while startup competitions encourage new education technology firms to work directly with educators and students. We've

discovered that occasional Requests for Proposal (RFPs) can focus members' attention on issues of critical importance or strategic priorities. In Pittsburgh, we've issued RFPs to solicit innovative solutions from the network on topics ranging from play-based learning and summer learning loss prevention to STEAM classrooms and digital badges.

In addition to direct funding, offering non-financial support for projects and companies, such as shared workspaces, leadership development workshops, and mentoring relationships with established innovators have enabled us to leverage small investments into widespread impact.

Whatever form it takes, catalytic support seeds new ideas with early-stage funding so that network members can quickly turn ideas into action. Over time, successful small-scale projects act as "proofs of concept" that inspire others inside and outside the network to develop their own innovative approaches to teaching and learning.

CATALYZE STARTER IDEAS

Provide Mini Grants: Offer small-scale funding awards to catalyze new and innovative learning projects both in-school and out-of-school so that network members have the support necessary to put their ideas into action. Encourage proposals for pilot programs, design partnerships, and product prototypes that educators and students can use to explore new ways of teaching and learning.

Incubate Ed-Tech Ventures: Establish new or support existing start-up incubators where local entrepreneurs can develop emerging education technology companies. Connect these ventures with educators and researchers in the network to co-design, playtest, and evaluate new education technology products.

Support Project Leaders: Provide value-added services to support the professional and leadership development of network members by connecting them with experienced mentors, equipping them with toolkits and guides, and partnering unincorporated groups with fiscal sponsors.

See detailed instructions for implementing these and other plays in the Appendix starting on page 76.

COMMUNICATE

Amplify the voice of network members by documenting success, sharing stories, and joining the global conversation about learning innovation.

Networks rely on effective communications and the productive exchange of information to keep all members informed and engaged. By making use of blogs, social media, e-mail marketing services, web forums, and digital publishing, as well as traditional forms of advertising and marketing, you can communicate about the resources and opportunities available to network members.

Create a recognizable identity for the network in the minds of its members and of outside observers. Naming the network, establishing a visual brand that can be shared by all members, and cultivating an authentic voice that can speak on behalf of the whole network are important early steps.

Establish a "home base" for the network on the web and create a single destination for listing network members and organizations, collecting and sharing resources, and keeping members informed of upcoming events via a calendar. In Pittsburgh, remakelearning.org has become a one-stop shop for anyone interested in getting involved in the network. Our colleagues in New York and Chicago use Minigroup to enable direct peer-to-peer connections among Hive Learning Network members.

The network itself can be a clearinghouse for news, editorials, information, and interpretation through blog posts, newsletters, and publications. You might not have many local stories to share at the start; consider syndicating posts from trusted news sources like KQED Mind/Shift or tweets from national thought leaders at the DML Research Hub. Establishing regular, robust communications methods for the network enhances the ability of members to engage and collaborate with one another and national peers.

Beyond speaking directly to network members, you can implement communications strategies that raise greater awareness among local audiences and stakeholders outside of the network. We've found that photo, video, audio, and written documentation is the best way to tell the story of the network, its members, and the innovative learning initiatives they lead. These multimedia assets are invaluable when you later develop a public relations strategy and start pitching stories to attract media attention.

COORDINATE

Establish a structure for the network that enables individual members to do what they do best, while also collaborating across sectors and sharing resources effectively.

By organizing advisory groups, setting the strategic agenda, and prioritizing measurement and evaluation, you can coordinate the evolution of the network from informal and ad hoc beginnings to a more robust and sustainable future.

Coordination with other organizations operating outside of the network is also critical to the long-term health of the network. External partners become increasingly important as a network grows in scale and complexity. The network will begin to represent the learning leadership in your community when you connect with stakeholders, funders, partners, and policy makers. These national and international relationships may also attract additional investment for the network as a whole or for individual network members.

Be strategic about roles. Individual member organizations have to focus on their mission, whether that's running a museum, educating students in school, or growing a successful business. Intermediary organizations—those whose mission it is to provide support (financial or otherwise) to front-line organizations—are well-positioned to coordinate activities and delivering support services to network members. Professional associations, business councils, government agencies, and community nonprofits all play a role in network coordination.

VALUES & GUIDING PRINCIPLES

Remake Learning embodies the following values in all its work. These values were arrived at by summarizing the qualities assigned to the work of Remake Learning, as described by network members themselves.

Creative & Innovative: We support inventive solutions and imaginative approaches to learning.

Collaborative & Cooperative: We work in multidisciplinary teams in mutual support of shared goals and objectives.

Equitable, Accessible, & Open: We promote the productive exchange of ideas and opportunities for all.

Nurturing & Child-Focused: We foster the growth and development of all participants— kids and adults alike.

Experimental, Catalytic, & Transformative: We test promising new ideas with the power to advance learning.

Relevant, Engaging, & Impactful: We offer enriching experiences attuned to the needs and potential of children and youth.

Fluid & Organic: We respond to the ever-changing needs of children and youth.

Fun & Charismatic: We are encouraging, exciting, convivial, and inspiring...in a word: FUN!

Establishing a guiding vision and setting a strategy to achieve that vision is critical. As much as possible, all network members should have a meaningful role in the development of a strategic vision and setting shared long-term goals. In Pittsburgh, we've used annual surveys as an effective and affordable mechanism for gathering input and feedback on the progress being made by the network from the point of view of the members themselves.

Try to gather evidence of the network's impact at each stage of its evolution and through each of its activities. Understanding the impact of the network is having on children and youth in your region, as well as the educators and innovators who participate in network activities, is critical to securing sustainable local funding and competitive national grant opportunities.

COORDINATE STARTER IDEAS

Strategize: Set an agenda for the network and establish a shared vision, common values, and long term goals by forming advisory groups of key stakeholders, surveying network members, and seating leadership councils representing influential members of the community.

Gather Evidence: Partner with researchers to establish mechanisms for understanding and evaluating the impact of the network on its members and on the children, youth, and families it serves in order to gather evidence and data to make a stronger case for support.

Establish National Partnerships: Reach out to organizations leading change on the national level and seek opportunities to partner with them to implement localized programming that helps connect your community with the extensive resources available through national and international networks.

See detailed instructions for implementing these and other plays in the Appendix starting on page 86.

CHAMPION

Lift up the best of the network and celebrate the educators, innovators, and young people who contribute to and benefit from network activities.

As your network grows, you'll need to build widespread public awareness of how learning innovation can positively affect children and youth. By shining a spotlight on network members at public events and in the media, you can champion the impact of the network and highlight the accomplishments of young people who have participated in network programming.

From art fairs and music festivals to holiday parades and heritage days, every community has its own slate of highly anticipated annual events that attract large numbers of children, youth, and families. These events are perfect opportunities to showcase the fun and engaging learning experiences offered by network members through interactive hands-on exhibits and learning pop-ups. You can also create a new must-attend activity by hosting signature events like Maker Parties or Mini Maker Faires that bring hundreds or thousands of families out to experience learning innovation in action.

Awards and contests recognize excellence among the educators and innovators who make up the network. They also recognize the students who have been empowered and inspired by the innovative learning experiences offered by network members. Submit nominations and letters of recommendation for network members on applications that will garner national recognition for the member and the network.

Thoughtful advertising and marketing strategies build the identity of the network among broader audiences who may never choose to participate in network activities, but nonetheless stand to benefit. Radio underwriting, television PSAs, digital banners, and bus shelter advertising—as well as the physical distribution of marketing materials in public places and at events—are all effective means to increasing awareness of the network and its learning innovations among those ultimately served: the children, youth, and families in your community.

CHAMPION STARTER IDEAS

Showcase Network Innovations: Organize interactive exhibits that showcase exemplary network projects and programs at public events like arts fairs, summer fests, holiday events, and other gatherings that attract large numbers of children, youth, and families so that more people can have personal, hands-on experiences with learning innovation.

Celebrate Accomplishments: Recognize excellence among network members and celebrate the work of young people involved in network programs by hosting new or partnering with established events where awards and prizes can be given to elevate the best of the network and inspire others to achieve similar results.

Market the Network: Establish a presence for the network in the local media market by purchasing advertising placements and underwriting messages such as PSAs on local television and radio, print and digital advertising in local publications, and distributing marketing materials through street teams.

See detailed instructions for implementing these and other plays in the Appendix starting on page 89.

Voices of the Network

The success of the Remake Learning Network rests on the strengths of its individual members. While they share a vision for the future of learning, each member contributes a unique perspective to our collective work.

In interviews conducted in 2015, network members discussed their motivations, experiences, insights, and future hopes. In this selection, network members reflect on the power of innovation to unlock opportunity for all youth.

NINA BARBUTO
ASSEMBLE

"We have so many resources in this town, and a lot of them are just in those ivory towers. At Assemble, kids get to meet real scientists and see that scientists aren't just white guys with crazy hair and glasses."

JOMARI PETERSON
THE MAKER'S PLACE

"I believe that youth are capable of creating economic wealth and changing the world where they are now. I don't think we should focus only on academic preparation for college, but provide young people with the technical skills to earn money right now if they choose."

COREY WITTIG
CARNEGIE LIBRARY OF PITTSBURGH

"A big part of the Labs is just taking advantage of the fact that libraries are already a place that low-income kids are going after school. People come for the programming, but I think the biggest portion of our kids just wandered in from the neighborhood and encounter staff and they see the stuff that's here. Maybe they came in just for a computer and a place to be, and then they're like 'Oh wow, there's all this stuff!'"

DR. TODD KERUSKIN
ELIZABETH FORWARD SCHOOL DISTRICT

"You know, it's 2015. We're 15 years in the 21st century and schools are still talking about STEM and STEAM, but if you look closely you'll see a lot of schools haven't changed. A lot of schools have not integrated computer science at an early age. A lot of schools haven't introduced robotics to every student, digital fabrication, all the things we know are 21st-century skills."

JEREMY BOYLE
CHILDREN'S INNOVATION PROJECT

"We define innovation as finding something new inside something known, which is a shift from thinking about innovation as always being the making of the new thing that takes something further or faster or larger. But we think that it's really important, especially working with young children, to think about innovation in this frame that really allows the space to honor the discoveries that children make in the context that they're in."

ANI MARTINEZ
THE DIGITAL CORPS

"Good youth engagement strategies, especially in the making and STEAM realms, have a low floor, a high ceiling and wide walls. Low floor means that they're very accessible. A high ceiling means that, while it's easy to engage with, the learning can be endless. And wide walls means that you can have varied learning, so you can serve a diverse set of learners."

Hear full interviews at **playbook.remakelearning.org**

Lessons Learned

We've learned a lot since beginning this work nearly a decade ago. We've identified the most important takeaways that every network should consider, whether they're just starting out or looking to take their work to the next level.

BUILD ON YOUR STRENGTHS

Recognize what makes your region uniquely positioned to remake learning. Choose particular areas of opportunity where your network can make the biggest impact. This may be a specific industry that is relevant in your region, a pressing challenge that community leaders wish to solve, or an area of shared interest that many of your network members are already tackling.

EQUIP EDUCATORS TO INNOVATE

Engage teachers and out-of-school educators and enable them to develop novel approaches to learning by offering support services, funding opportunities, and professional development. Educators know best how to connect with their students. With the support of the network, they can implement innovations that enhance learning and inspire their peers to do the same.

MEET PEOPLE WHERE THEY ARE

Spread network events and activities across many different host organizations and locations. Offer a range of opportunities for network members to engage at the level of depth that best suits them. Different organizations will have different capacities to dig deeply into network activities, but all can benefit from even minimum participation.

ENCOURAGE CROSS-SECTOR COLLABORATIONS

Prioritize support and attention for initiatives designed by diverse partners where the collaboration is essential to the innovation, not just a by-product of teams forced to work together. Highly effective learning experiences challenge students to apply methods and knowledge from multiple disciplines to efficiently solve problems—shouldn't we insist the same be true of the process used to design those experiences?

UNDERSTAND NETWORK IMPACT

Set long-term goals for your network and gather evidence of your progress. Measure your impact on both the members of the network and on the children and youth that they serve.

EMPOWER INTERMEDIARIES

Organize a trusted group of entities with leadership capacity to propel learning innovation work in the field. This enables other network members to focus on their mission or business, while ensuring that the operations of the network can be sustained and coordinated for the benefit of all involved.

CREATE AN IDENTITY

Name your network, give it a look, and give it a voice so that network members feel like they belong to something material and significant. As the network steward, strive to speak and act on behalf of all members. Establish a recognizable brand to give your network both a local and national presence.

FIND A CHAMPION

Identify an influential person or persons who can speak passionately about the network and attract others to get involved. Your champion can come from a variety of backgrounds—a school administrator, a community leader, a business leader, a local celebrity, a funder, a government official, or even a student! Whoever plays this role, they need to feel a personal commitment. You need a champion, not a poster child.

REACH OUTSIDE YOUR REGION

Seek partnership opportunities with national and international organizations focusing on learning innovation and connect with other regions, either nearby or around the globe. Follow the work of others you admire and add your voice through social media channels. Your network will benefit and scale more quickly from the influx of new ideas and opportunities, and knowledge in the field will grow by sharing the best of your work with others.

BE OPEN AND INCLUSIVE

Actively invite people in—don't worry about giving away an extra free piece of pizza; you don't know who will come together to create the next great idea. In lieu of rigid membership criteria, allow people and organizations to self-identify and lower all the potential barriers to network involvement.

BE AUTHENTIC

Create a network unique to your community. Leverage resources and toolkits like this Playbook to inform your thinking, but don't take a cookie-cutter approach to replication. Be inspired by the work others have shared and use it as raw material to remake into your network's own innovative strategies.

BE AUDACIOUS

The current model of education is failing too many kids. We need bold action and courageous risk-taking by every constituency with a stake in their future. We must harness the creativity and ingenuity of the entire community to cultivate novel approaches to learning challenges—both old and new. We ourselves must test, try, fail, succeed, and learn. And we must act swiftly and decisively; tomorrow is already here.

Voices
of the
Network

The success of the Remake Learning Network rests on the strengths of its individual members. While they share a vision for the future of learning, each member contributes a unique perspective to our collective work.

In interviews conducted in 2015, network members discussed their motivations, experiences, insights, and future hopes. In this selection, network members reflect on the connection of community, creativity, and technology to power the future of learning.

JANE WERNER
THE CHILDREN'S MUSEUM OF PITTSBURGH

"Even though Pittsburgh is a very small town, and you feel like you've met everyone, the Remake Learning Network just put me in contact with people that create unlikely partnerships. And I think those unlikely partnerships are where the real creativity happens."

MICHELLE FIGLAR
PA OFFICE OF CHILD DEVELOPMENT & EARLY LEARNING

"We advocate every day for high-quality early childhood education. We talk to legislators. We talk to parents. We want it to be embedded in play and developmentally appropriate practice, but Remake Learning takes it yet another step and says, we want it to be the most cutting-edge, groundbreaking, early childhood space as possible. So how do we use technology? How do we use media? How do we think differently about professional development?"

Hear full interviews at **playbook.remakelearning.org**

JESSICA TRYBUS
SIMCOACH GAMES

"If the best way to learn something is to create a game for it, we need to teach kids how to be game designers so they can be producers of this content, not just consumers. Even though games are very interactive, and they work for learning, can we have an experience where the kids are actually designing the games or in part designing these experiences?"

NADINE CHAMPSI
PITTSBURGH MOMMY BLOG

"I started my blog as a central resource for parents in the city to find information about stuff to do with your kids. I try to find unique, off-the-beaten path ideas. But a large portion of my blog is about inspired moms in the city who are leading unique projects in the city."

CAROLINE COMBEMALE
TEEN MENTOR

"I think I kind of grew up a little bit working at Assemble because I became more mature, and really learned how to act around adults. Before I was kind of just this hyper child who just loved to do everything but didn't know how to communicate with anybody."

KIM CHESTNEY
PITTSBURGH TECHNOLOGY COUNCIL

"Creativity gives technology its humanity. And our humanity is the driving force behind every new technology we design and every product we manufacture. We are all makers. Without creativity, we don't make anything. If we don't make anything, we don't progress."

The Road Ahead

Working together, the Remake Learning Network has squarely established a solid foundation for learning innovation in the greater Pittsburgh region. As a collaborative and connected network, our potential to provide every kid with remarkable learning experiences is greater than ever.

We've grown the network from a handful of people to more than 200 member organizations and more than 3,000 people who follow our work. But perhaps more important than the steady growth of the network has been its effect on the way members connect across sectors. According to our most recent survey of network members, 86% reported forming new and productive collaborative partnerships as a direct result of their participation in the network.

The success of our network has helped put Pittsburgh on the map as a community known for learning innovation, attracting visitors from around the world. School district leaders from Huntsville, Alabama, took what they learned from the Elizabeth Forward School District back home to bring their schools into the digital age. Business leaders from Denver, Colorado, visited Pittsburgh and learned how the network has built effective partnerships between educators, cultural institutions, and research universities.

Representatives from 13 regions toured Remake Learning Network sites throughout Pittsburgh to get a first-hand look at an education innovation cluster in action.

We have opened doors for Pittsburgh to engage national and international partners like Common Sense Media, PBS Learning, and the global Hive Learning Networks. From these partners, we import new knowledge, tools, and resources for learning and export our most successful innovations far beyond our borders.

In 2014, Pittsburgh became the first U.S. city to be awarded a Disruptive Innovation Award at the Tribeca Innovation Festival in New York City. The award recognized the leadership of the Remake Learning Network in fostering more creative and innovative learning opportunities for youth in the region.

As Connie Yowell, the former Director of Education at the John D. and Catherine T. MacArthur Foundation, told *Education Week*: "Pittsburgh is absolutely a leader when it comes to building a learning ecosystem for the 21st century."

Still, our work is far from over. Important questions and complex challenges remain as we work to coordinate the efforts of the many actors in the education space, embed

the values of creativity and equity in every program, engage students in hands-on learning both in and out of school settings, and empower grassroots stakeholders to participate in setting the agenda for change.

In addition to making constant refinements to the structure and operations of the network, we're focusing on several key priorities in the months and years ahead.

Innovative Professional Development: Some of the most important work for the network going forward will be the continued investment in our human capital—providing educators

goes beyond raising awareness—if innovative learning is to go to scale and become the norm for all children, parents need to be empowered to *demand* that learning be remade.

Badging & Credentialing Learning: Alternative credentials remain especially important for recognizing learning in out-of-school time, where many young people find the most rewarding and empowering learning experiences. We're building on the deep work that Remake Learning Network members have already begun in developing shared learning competencies and issuing thousands of digital

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The success of our network has helped put Pittsburgh on the map as a community known for learning innovation, attracting visitors from around the world.

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with the innovative instructional support they need. School districts and educator support agencies are taking innovative teaching practices to scale by creating new professional development opportunities that harness the best of the network and provide teachers with hands-on opportunities to adapt and remix new approaches to suit their classrooms.

Family Awareness & Engagement: We're also focusing more than ever on engaging directly with parents and families so that we can ensure the incredible innovations emerging in Pittsburgh remain relevant to the needs and concerns of the caring adults in children's lives, while also expanding the conversation about what it means to learn today. The ultimate goal

badges. Developing a workable ecosystem of micro-credentials that is valued by learners and helps them showcase their accomplishments to teachers, college admissions, or potential employers remains a critical priority in Pittsburgh.

Ensuring equitable access: Increasing access and participation among youth and educators in neighborhoods in need—especially communities of color and English-language learners—is an ongoing challenge for the entire field, not just in Pittsburgh. Building on models like The Children's Museum's Mobile MAKESHOP, Carnegie Library of Pittsburgh's Labs on Location, and The Sprout Fund's Digital Corps, more of our network's most effective learning

innovations are being "mobilized" so that they can be adapted and deployed in high-demand communities. Similarly, efforts to overcome transportation barriers and convert public recreation centers into venues for digital learning and technological access are underway.

Evaluating Network Impact: While we have established mechanisms to gauge the impact of the Remake Learning Network on the members themselves, measuring and understanding how the network has affected outcomes for the young people we seek to serve has been more elusive. To that end, a small local research cohort has begun work to analyze the landscape of network research and establish common metrics for evaluating innovative learning programs and a shared strategy for gathering data about the impact on learners. We still have a lot of work ahead of us, but, through the strength of the network, we're moving closer to our long-term goal of providing *all* children and youth with the best available opportunities to learn and be creative.

Looking forward to the years ahead, we're excited for new opportunities to build on this momentum—opportunities that arise directly from the strength and maturity of our network.

With maker learning taking hold in our region's schools, museums, and communities, Pittsburgh has developed into one of the most active maker ecosystems in the country. Responding to a call-to-action from the Obama Administration, the Remake Learning Network continues to engage its members and national leaders in a discussion on ways Pittsburgh can build on this strength to become one of America's leading Maker Cities. And, in 2016, the Week of ReMaking Learning will be an all-hands-on-deck effort to garner commitments from school districts, nonprofit organizations, elected officials, and corporate partners proclaiming the priority of innovative maker learning in Pittsburgh.

As one of the vanguard "Cities of Learning" in 2014 and 2015, Pittsburgh is now poised to join Chicago, Dallas, Washington, D.C., and many others with LRNG, a collective shift in our approach to learning. LRNG is a bold new endeavor to close the opportunity gap by transforming how young people access and experience learning, and the paths they can take to success. LRNG will help Pittsburgh build a seamless network of local and online learning opportunities that are open and inviting to all youth—and connected to real-world opportunity through the use of digital badges.

In support of Pittsburgh's ed-tech start-up community, Remake Learning nonprofit partners are now providing user testing, curriculum design, and teacher training support services to enhance the applicability and usability of new products in a variety of learning environments. Through this coordinated approach, Pittsburgh is growing an education innovation cluster with enterprises that achieve important learning outcomes for children *and* deliver economic impact in the community.

As we make strides in the Pittsburgh region, we're also seeking more opportunities to partner with other cities that recognize the value of network-based learning innovation. Sharing our story through this Playbook is the first step. Now we're hoping to hear from you.

How will you remake learning in your community?

Infusing a Neighborhood with Science and Creativity

ASSEMBLE creates opportunities for young people to make things that inspire and empower.

As school budgets shrink, arts education is increasingly targeted as a place to cut funding. Yet as we prepare young people to join a workforce where creativity, collaboration, and critical thinking are essential to success, experiential learning that emphasizes imagination and design thinking has become more important than ever. Assemble picks up where schools leave off, offering free and open learning opportunities that integrate the arts, technology, and science in ways that blurs traditional boundaries between disciplines.

Part gallery, part art studio, part makerspace, Assemble offers a range of dynamic activities, from Saturday Crafternoons with make-and-take projects to monthly Learning Parties where kids can try their hand at art-making, conduct scientific and technological experiments, have conversations with experts, and more.

Assemble was founded in 2011 by Nina Barbuto, an architect and Pittsburgh native who returned home after working in Los Angeles, where she also participated in a research project focusing on arts and learning environments. Inspired by her West Coast experiences and committed

BY THE NUMBERS

In 2014, Assemble served more than **1,700** Pittsburgh youth through sustained programs and held more than **900 dedicated program hours**.

Collaborating with **20 local organizations**, Assemble worked with **35 makers**, **technologists**, and **artists** to directly serve students at **seven local schools**.

to increasing access to arts and technology opportunities for girls and underserved youth, Nina established Assemble in the Garfield neighborhood of Pittsburgh, a community in transition whose residents are predominantly African-American.

Assemble also reaches kids across Pittsburgh through its many partnerships. Working with more than 20 organizations, Assemble takes its STEAM and Maker educational programs on the road, sharing programming with kids in all corners of the city. Still, Assemble stays firmly rooted in its community, offering a safe and nurturing space to hang out, get free afterschool homework help, or try something new at the monthly Youth Maker Nights.

> "In informal learning spaces like Assemble, imagination drives invention. If you can dream it, you can make it."
>
> **TARA TIGER BROWN**, FOUNDER, LA MAKERSPACE

By teaching kids science and technology in hands-on—sometimes messy—ways, Assemble demystifies the creative process. Kids get their hands dirty while they learn, whether they're gluing LED lights to a cardboard bridge or spinning a clay pot on a pottery wheel. Assemble maintains a low barrier to entry for its programs: most require no pre-registration, and nearly all are free. In this way, Assemble works as an "on-ramp" to deeper learning and provides more opportunities to develop skills.

The organization runs its workshops by hiring educators, technologists, and working artists on a contract basis, relying on Maker Corps VISTA and Board members for institutional support, and even enabling teenagers to teach younger students as peer-mentors.

These educators work with students like Daijah, Ashanti, and Cheyenne, middle school students from the neighborhood. Following a summertime shooting at a nearby playground, the girls found a safe and welcoming place at Assemble, where they've since become a fixture. The girls have yet to miss a Saturday Crafternoon event, and they recently built a prototype for an LED lighting system that could make their neighborhood parks safer places for kids.

NETWORK IN ACTION

CATALYZE: PROGRAM RESEARCH INFORMS PROGRAM DESIGN.

Through their participation in the Remake Learning Network, Assemble connected with the University of Pittsburgh's Center for Learning in Out-of-School Environments (UPCLOSE), an academic unit that studies informal learning programs. Through the support of the Grable Foundation, Marti Louw, then a design researcher at UPCLOSE, conducted a year-long fellowship at Assemble, working closely with staff and mentors to study how parents and adult caregivers seek and choose learning opportunities for young people, and then they co-designed strategies for improving family engagement in supporting youth interest in making and creative technology.
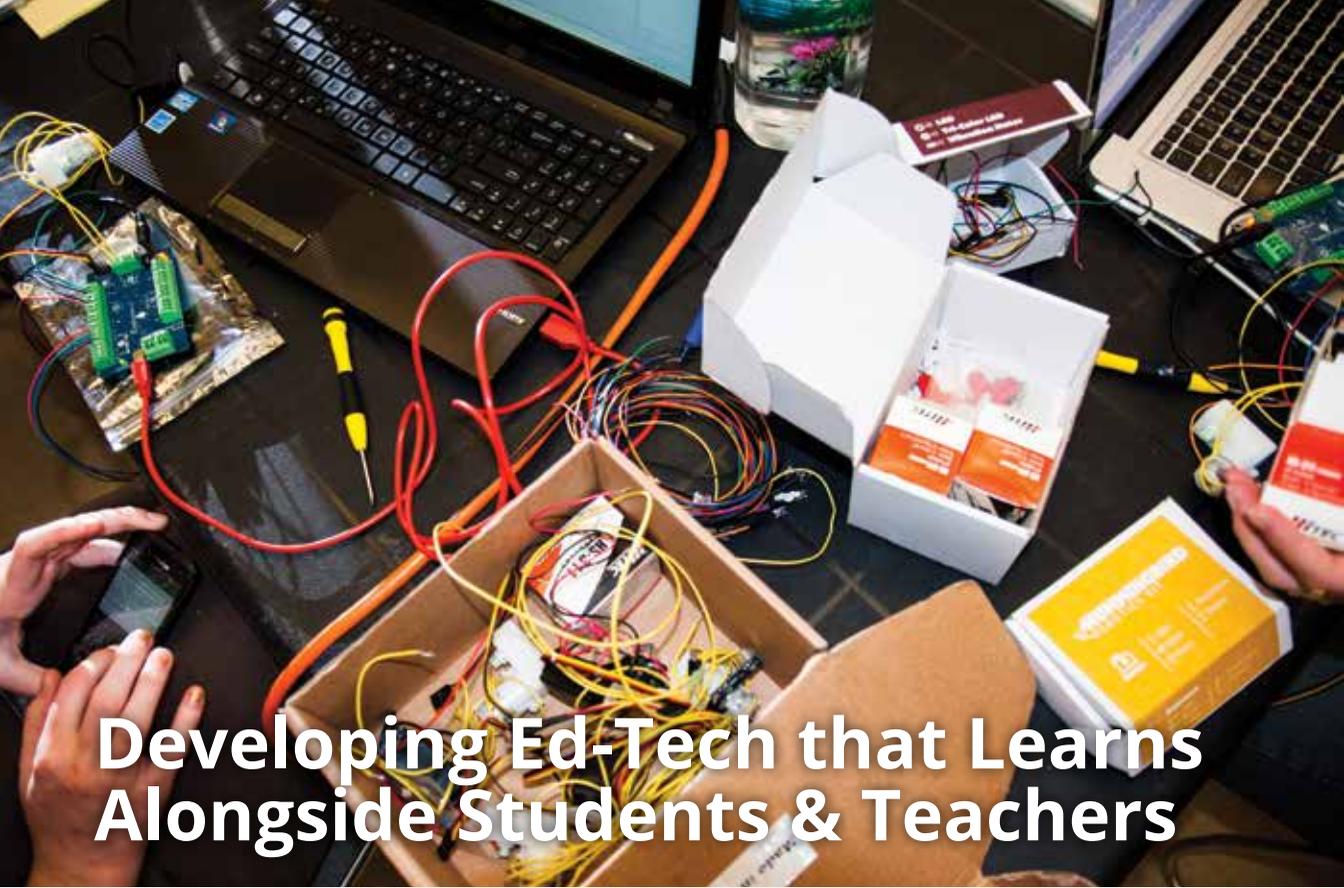
Developing Ed-Tech that Learns Alongside Students & Teachers

BIRDBRAIN TECHNOLOGIES creates affordable robotics tools that help teachers make coding and computer science accessible.

Robotics, coding, and computer science are increasingly important to the future career prospects of today's students. Yet classroom teachers and informal educators often face barriers in the cost of equipment and the perceived difficulty of the subject matter.

By providing flexible and affordable robotics products that are easy to use, Pittsburgh's BirdBrain Technologies introduces students to programming and robotics and cultivates their ability to think and work creatively with these 21st-century tools.

"The Finch helped me understand objects and their methods in a way that the textbook never could."

STUDENT
AT FRANKLIN REGIONAL HIGH SCHOOL

BY THE NUMBERS

Nearly **20,000 BirdBrain products** are in use in more than **1,000 classrooms**, reaching more than **50,000 students** nationwide.

In 2014, the PreK–12 education technology market had an estimated value of **$7.9 billion**.

Founded in 2010 by Tom Lauwers, who had just completed Ph.D. in Robotics at Carnegie Mellon University (CMU), BirdBrain Technologies originated from Lauwers' work with CMU's Community Robotics, Education and Technology Empowerment (CREATE) Lab, which promotes technological fluency through education.

BirdBrain's first product was a tool to motivate computer science students by giving them a tangible representation of their coding. The Finch is a durable, two-wheeled plastic robot that accepts computer science commands in a number of programming languages and gives students instant visual feedback. Shortly thereafter, Lauwers designed the Hummingbird Robotics Kit, which contains the basic components needed for a wide array of robotics, kinetics, and animatronics projects across disciplines.

The strength of educational products like Finch and Hummingbird lies in their ability to make learning something you can see and touch. For many students, these tools represent their first exposure to project-based learning. In particular, Lauwers says, "It's about doing something as a project that requires creativity and thinking—and it probably doesn't work the first time. Students have to do some engineering and some programming and some testing before they get it right."

The approach fits well with the demands of the project-based workplace of the future, which will demand employees with creativity and problem-solving skills.

"I would much rather see a student write a program that makes a multiplication table and autofills it than memorize a multiplication table," Lauwers says.

Lauwers partnered with educators in Pittsburgh-area middle schools, high schools, and community colleges to co-design and test products, integrating feedback to develop instructional resources that work both in- and out-of-school.

Supplementing these in-person collaborations are online forums where teachers post lesson plans for using BirdBrain products and share tips for engaging students.

Through these partnerships, Lauwers has built a regional "cluster" of Finch and Hummingbird users in the Pittsburgh region. It's a strategy that has built a market for BirdBrain products and enriched the community of educators and students using the Finch and Hummingbird Kit to expand opportunities for robotics and computer science learning.

NETWORK IN ACTION

CONVENE: PROFESSIONAL DEVELOPMENT BRINGS EDUCATORS TOGETHER WITH INNOVATORS.

Partnerships with professional development agencies in the Remake Learning Network has been instrumental in helping BirdBrain improve its products and expand its reach.

ASSET STEM Education hosts Hummingbird professional development on an almost monthly basis. The Allegheny Intermediate Unit hosts two-day training workshops in their trasnformED professional development space, a digital playground for teachers, exploring new education technology tools.

Working with the Carnegie Library of Pittsburgh (CLP) has helped Lauwers adapt his products for self-directed learning in out-of-school environments. Materials like comic book-style instructional guides were originally made by CLP librarians, and now they are used by BirdBrain in all their product kits.

Bridging the Community & Higher Education

CARNEGIE MELLON'S CREATE Lab and the Entertainment Technology Center are connecting university students and researchers to the communities they serve.

Universities are engines of exploration, discovery, and innovation. Still, too often, research universities with deep wells of intellectual capital miss opportunities to deliver meaningful solutions to the communities around them. When educators and community members are able to tap into these extraordinary resources, students gain exposure to some of today's most cutting edge technologies.

That's why Carnegie Mellon University (CMU), one of the most highly regarded private research universities in the world, has connected with a network of regional educators to co-develop innovative, effective education solutions that work in the Pittsburgh region.

The Community Robotics, Education and Technology Empowerment (CREATE) Lab and the Entertainment Technology Center (ETC) are two examples of CMU's commitment to putting innovation to work in the Pittsburgh region.

Established in 1997 by roboticist Illah Nourbakhsh, the CREATE Lab explores socially meaningful innovation and deploys robotic technologies to address community challenges ranging from air pollution to the achievement gap.

"The CREATE Lab was born out of a desire to change the way the university relates to its community," says Nourbakhsh. "If we start with education, we can empower students to think about technology as a tool that they can use for social change."

By partnering with schools, museums, libraries, and child-serving organizations,

BY THE NUMBERS

Since its inception, the CREATE Lab Satellite Network has engaged **260 teachers**, **650 pre-service teachers**, **7,200 students**, and **90 schools**.

In the last 15 years, ETC has supported over **175 community projects**, including the **MAKESHOP** at the Children's Museum of Pittsburgh.

"Ideas and inspirations for the way the world should be and how we can design the future with technology is sourced from the communities and the people and the experiences we have."

MARTI LOUW, DIRECTOR, LEARNING MEDIA DESIGN CENTER, CARNEGIE MELLON UNIVERSITY

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researchers in the CREATE Lab develop tools and programs to empower a technologically fluent generation through experiential learning. Together with the Pittsburgh Association for the Education of Young Children (PAEYC), CREATE Lab developed Message for Me, kid-friendly kiosks that enable young children to record their daily experiences through pictures and speech and send them to their parents' cell phones or email. Now in more than 100 early childhood classrooms throughout the Pittsburgh region, Message from Me enhances parent-child conversations and involves families in the day-to-day educational experience of their children.

To expand its impact in the region, CREATE Lab established a Satellite Network in partnership with Marshall University, West Liberty University, Carlow University, West Virginia University, and Penn State New Kensington. These institutions connect CREATE Lab technologies with pre-service teachers who develop pedagogical uses while also offering critical user feedback on potential products. This process of iterative design ultimately produces tools that are optimized for effectiveness in a diverse array of learning environments.

Started by computer scientist Randy Pausch and drama professor Don Marinelli in 1999, the ETC is a two-year graduate program offering a master's degree in entertainment technology that combines technical courses in digital technology and game development with art courses in storytelling and design.

To earn their degree, students must work with community representatives to co-develop games for good—from schools to hospitals to museums and beyond. These partnerships often produce compelling results. In 2010, Elizabeth Forward School District built a SMALLab (Situated Multimedia Arts Learning Laboratory), an immersive environment that uses games to enable students to learn kinesthetically. By partnering with a team of students from the ETC, educators at Elizabeth Forward created their own learning games that fit within their curriculum and appealed to students.

ETC director Drew Davidson, a leading member of the Remake Learning Network since its earliest days, encourages students to consider the educational potential of new technology whenever possible. "We believe that all of this great entertainment technology can have positive social impact," he says. "We're always looking for great projects in general, but we're also trying to do something more—to make the world a better place."

NETWORK IN ACTION

CONVENE: LUNCH & LEARNS CREATE OPPORTUNITIES TO SHARE KNOWLEDGE AND EXPERTISE.

Convening network members to learn from the thought leadership and collective expertise of higher education institutions like Carnegie Mellon helps to raise the level of awareness and understanding of new technologies among network members.

Speaking at a Remake Learning Network Lunch & Learn, CREATE Lab director Dr. Illah Nourbakhsh explored how advanced technologies are shaping a new discourse regarding the role of education in directing community change, and the role of communities in directing the future of technology innovation.

Supporting young learners to notice, wonder, and persist

The CHILDREN'S INNOVATION PROJECT approaches technology as raw material to support broad interdisciplinary learning for children to develop habits of mind as innovators.

Children's Innovation Project began in 2010 when CREATE Lab resident artist, Jeremy Boyle and Kindergarten teacher, Melissa Butler partnered to explore the question: "What might meaningful technology learning look like for young children?" Working together at Pittsburgh Allegheny K–5, the pair began co-creating a learning progression of language-logic opportunities for children to deeply explore the material of technology.

With the Children's Innovation Project, children explore and learn about electricity and simple circuits through hands-on engagement with Circuit Blocks and other raw materials, developing habits of mind to notice—wonder—persist. Children make connections to objects in their world—specifically through imagining about the insides of electronic toys, opening them to notice carefully, identifying components, and then repurposing and reconfiguring their internal components into new circuits and new ideas. Approaching technology as raw material allows technology to be a means to learning, not an end.

The pair began collaborating on various arts-integration projects back in 2003, when Boyle was Resident Artist at the Mattress Factory. Since 2010, they have focused on what they see as "depth of possibility in broader interdisciplinary learning" for children to develop precision of language, collaboration, and flexibility and fearlessness in problem solving.

Learning with the Children's Innovation Project is for all children, not for enrichment groups or special pull-out programs.

Circuit Blocks have been iteratively designed locally in Boyle's studio as part of the teaching and learning work of the Children's Innovation Project since 2010. The production process mirrors the learning of the project through its slow and careful method of crafting these materials.

> "I think everybody should know… how to make mistakes. If you don't know how to make mistakes, it will be hard to work on a breadboard. I always make mistakes while on the breadboard."

GRADE 4 STUDENT WHO HAS WORKED WITH THE CHILDREN'S INNOVATION PROJECT SINCE KINDERGARTEN

The Children's Innovation Project shifts the focus of innovation from making something, to a focus on "finding something new inside something known." This shift allows children opportunities to slow down and make their own authentic discoveries with materials and ideas. It is through this process of discovery, that children are able to dig into struggles of not-knowing and find and follow their own internally-motivated curiosities. And as children think about themselves in relation to the process of their own learning, they begin to internalize sensibilities that support their growth as innovators.

In various classroom settings from Kindergarten through Grade 4, children practice what it means to **notice:** *slow down, there is always more to see,* **wonder:** *follow questions to find new questions,* and **persist:** *love and stay with your struggles*.

Children look at small screws and compare the patterns on the heads, the shapes of the tips and details of the threads. Across the hall, children wonder about the newly discovered and unknown components on the circuit boards in their opened electronic toys. Upstairs, children use magnifying glasses and read the color bands on resistors to decode their value in Ohms. Kindergarteners imagine the insides of their electronic toys for months before starting to open them slowly with screwdrivers. First graders try and fail and fail some more while inventing switches. Second graders struggle for weeks to find a way to make 3 lights glow brightly with one battery block (discovering parallel circuits). Fourth graders work on breadboards for months learning slowly and in layers how to create pathways from +3V to ground using LEDs, push-buttons and resistors. In all of these classrooms, teachers notice and wonder about how children are learning in order to support children's metacognition.

BY THE NUMBERS

Pittsburgh Allegheny K–5 is a Pittsburgh Public School where 97% of the students qualify for free or reduced lunch.

In 2010, the Children's Innovation Project began with **20 students** in one Kindergarten classroom at Pittsburgh Allegheny K–5.

In 2015, **more than 300 students**, **11 teachers**, and **8 Carlow University Teaching Fellows** participated in the project at Allegheny and **28 students**, **2 teachers**, and **1 Carlow Teaching Fellow** participated at Pittsburgh Arsenal K–5.

NETWORK IN ACTION

CATALYZE: MINI-GRANTS SUPPORT EARLY-STAGE PROJECTS.

Providing funding for new and innovative learning programs is an essential service of the Remake Learning Network.

In 2011, Children's Innovation Project received a Spark award from The Sprout Fund, a Pittsburgh nonprofit that provides catalytic funding for early learning programs that help children develop hands-on skills and digital literacies. With support from Sprout, project co-directors Melissa Butler and Jeremy Boyle were able to focus on developing the project with the students in Butler's kindergarten classroom. This early work set them up for iteration, learning, and growth.

Making Learning Visible with Digital Badges

The Sprout Fund and dozens of community partners helped Pittsburgh become a summertime CITY OF LEARNING.

Learning doesn't begin—or end—in the classroom. Yet much that's gained in afterschool programs, community centers, and summer camp goes unrecognized, left out of a learner's educational record and unseen by admissions officers and potential employers.

Digital badges are a new tool to recognize and celebrate a learner's mastery of competencies. Within a framework of knowledge, skills, and dispositions, badges store in-depth information about learning experiences. A few clicks can reveal where the learning happened, what it took to earn the badge, and, in some cases, the evidence and learning artifacts behind the badge.

Badges emerged in the early 2010s through deep investments from the MacArthur Foundation and close work with Mozilla Foundation, the nonprofit behind the Firefox web browser. More recently, Pittsburgh joined Chicago, Dallas, and Washington, D.C., as "Cities of Learning" in a national campaign focused on keeping students engaged in meaningful learning opportunities over the summer.

The Sprout Fund created opportunities for dozens of Remake Learning Network partners to explore the potential for digital badges and reward learning happening outside the classroom, from museums and libraries to corporate offices and basketball courts.

BY THE NUMBERS

In summer 2015, approximately **7,000 badges** were uniquely earned by **1,600 learners** from **34 participating organizations**.

45% of badges issued recognized **dispositions cultivated**, 35% **skills mastered**, and 20% **knowledge gained**. One youth earned as many as 19 total badges while most earned about 4.

During training workshops, educators and program leaders learned how to identify competencies based on their programs' learning outcomes and highlight "badge-able moments" during their summer programming. Participants based their badge criteria on a shared set of learning competencies created through a working group process that included input from educators, subject matter experts, and practitioners in a variety of professional fields. This way, City of Learning partners could be sure the badges they designed had real value in the broader community.

A technology platform enabled badges to be awarded and cataloged available learning experiences across the city. This discovery platform was also used by program staff and mentors to identify and recommend new activities for learners to pursue interests and build on their personal strengths—to create their own personal learning pathway.

> "In the real world, you're never asked a question that someone else already knows the answer to. On the job, it's all about finding new solutions."

CHRISTINE CRAY, DIRECTOR OF STUDENT SERVICES REFORMS, PITTSBURGH PUBLIC SCHOOLS

Three major partnerships were forged that complemented the broader summer efforts. Pittsburgh Public Schools offered badges as part of morning academic classes and afternoon enrichment activities at its Summer Dreamers Academy. Meanwhile, the Three Rivers Workforce Investment Board assured that career readiness badges were available to youth participating in the Learn & Earn summer youth employment program. Badges awarded by the Carnegie Library of Pittsburgh incentivized teens to engage with its learning labs and stick with its summer reading program.

Finally, at a mid-summer forum of regional employers, program partners made the case that badges can be used to help identify job prospects with the attributes needed in today's rapidly changing workplace.

"Anything that allows a candidate to demonstrate their passions, what they're into, their hard skill set—as well as their soft skills—is very important for any employer that thrives on a mixture of creativity, artistic sensibility, and collaboration," said Chris Arnold, general counsel and director of human resources at Pittsburgh-based video game design studio Schell Games.

Whether it's through self-directed online experiences, peer-supported learning at a safe neighborhood space, or classroom instruction during those important school hours, badges are rapidly becoming the tool to connect these learning experiences together for academic achievement, for employment, and for an engaged citizenry.

NETWORK IN ACTION

COORDINATE: LARGE EVENTS FOCUS NETWORK ATTENTION ON ISSUES AND OPPORTUNITIES OF CRITICAL IMPORTANCE

In November 2014, The Sprout Fund hosted a massive, town hall-style meeting with more than 300 educators and 100 students at Pittsburgh's downtown convention center. The event featured a mixture of remarks from stage, panel discussions, student presentation, table-based facilitation activities, science fair-style feedback stations, and an enthusiastic emcee.

Participants learned about digital badges and explored ways to connect in-school and out-of-school learning experiences to new pathways for opportunity for students in the greater Pittsburgh region. The momentum and enthusiasm generated at the event propelled the work of City of Learning forward between the two pilot summer seasons.

Building Digital Skills with Mobile Mentors

THE DIGITAL CORPS is a network of technology guides who engage Pittsburgh youth in digital literacy.

The effects of the digital age are sweeping across the globe, transforming industries, and changing how people interact with the world around them. Kids engage with games, apps, and social networks all day long, and most of them are eager to learn more about what goes into that technology. Still, despite the ubiquity of computing and the need to prepare children for tomorrow's workforce, most K-12 schools in the United States don't teach computer science, and most out-of-school programs lack the capacity to teach digital literacy skills effectively.

In response to this digital literacy gap, The Sprout Fund, the steward of the Remake Learning Network in Pittsburgh, partnered with Allegheny Partners for Out-of-School Time (APOST), a United Way agency supporting out-of-school educators, to launch the Digital Corps. The program recruits and trains mentors in digital literacy and matches them with out-of-school learning sites throughout the city and county.

The Sprout Fund recruits a wide range of professionals from a variety of fields including formal education, robotics and engineering, and the fine arts. Once they join the program, Corps members enter a training program to help familiarize them with the digital tools. But, more importantly, the

BY THE NUMBERS

Studies estimate that the average young person spends **8 hours a day** engaging with digital media.

Since launching in late 2013, the Digital Corps has delivered **795 hours of instruction** to **700 young people**.

The Digital Corps has trained **88 members** and partnered with **46 afterschool host sites** throughout Allegheny County.

program allows the group at large to collaborate on best teaching practices so they can deliver more effective learning experiences and support positive youth development. The training sessions employ hands-on, "learn by doing" instruction activities that embody the spirit of the Corps.

In partnership with APOST, Sprout seeks host sites that are trusted members of their community and attract a steady afterschool population of tweens and teens. Ranging from established organizations like YMCAs, libraries, and churches to smaller neighborhood organizations, the Digital Corps provides everything needed for a successful session: the tech tools, the mobile Wi-Fi, even the snacks.

> "We all have a role to play ensuring all our students are equipped with the digital literacy skills they'll need for their future."
>
> **HADI PARTOVI**, FOUNDER, CODE.ORG

During each 90-minute Digital Corps session, participating youth can pursue learning tracks in Creative Computing, Webmaking, and Mobile Media. Through Creative Computing projects, students use Scratch, MaKey MaKey, and Hummingbird Robotics Kits to explore conductivity, engineering, and design. When focusing on Webmaking, students use Mozilla Webmaker to learn HTML structure, web design, and storytelling. And when making Mobile Media, students use Mozilla App Maker and MIT's App Inventor to learn mobile design techniques, grid-math, and programming languages.

Digital Corps curricula not only teach technical skills, but also foster 21st-century skills-development, teaching kids how critical thinking, communication, collaboration, and creativity are interconnected. Youth learn to ask questions (of each other and of instructors) and delve into support resources online to find and fix bugs in their own projects.

Each Digital Corps session is taught "studio" style, so teens are creating something tangible every week. "Learning by doing is a great method to get students asking questions, troubleshooting, and figuring things out together," says Ani Martinez, Digital Corps program associate at The Sprout Fund.

To help track the progress made by participating youth, Martinez and Digital Corps members have developed 20 digital badges that students can earn in recognition of the knowledge they gain and the new skills they develop through the Digital Corps.

NETWORK IN ACTION

CHAMPION: SHOWCASE EVENTS RAISE GREATER PUBLIC AWARENESS OF LOCAL LEARNING INNOVATION.

In addition to partnering with host sites for 8 week deployments, the Digital Corps represents the Remake Learning Network at public events where they can reach hundreds of families all at once. These **showcase events for learning innovation** are designed to be fun, engaging, hands-on activities that can be set up at block parties, arts festivals, and maker parties—wherever children, youth, and families gather looking for new things to do.

# Transforming a School District, One Classroom at a Time

ELIZABETH FORWARD SCHOOL DISTRICT
empowers educators and students to re-imagine the future of K–12 education and then make it a reality.

Elizabeth, Pennsylvania might be considered an unlikely place to find the cutting edge of technology and innovation. In an old river town fighting to recover from recession, and in a public education environment marked by increasing standards and decreasing budgets, Elizabeth Forward stands out as one of the most innovative school districts in America.

When Superintendent Bart Rocco and Assistant Superintendent Todd Keruskin started at Elizabeth Forward, the district was hardly a hotbed of education innovation. Students were dropping out at alarming rates and opting for charter or cyber schools. The school was stuck in the middle of the pack on state standardized test scores and teachers were struggling to keep students engaged.

"Elizabeth Forward is a living example of the triumph of opportunity over challenge in American education."

KAREN CATOR, PRESIDENT AND CHIEF EXECUTIVE OFFICER, DIGITAL PROMISE
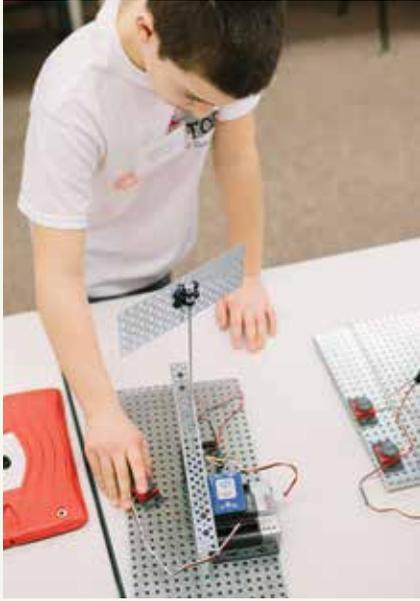
Still, there was opportunity for the district, located just 30 minutes from Pittsburgh's research universities, education technology companies, cultural institutions, philanthropies, and civic leaders. Tapping into the Remake Learning Network, Rocco and Keruskin began transforming their district—one space, one program, one teacher, and one student at a time.

Early in their tenure at Elizabeth Forward, Rocco and Keruskin attended an event at the Allegheny Intermedia Unit to hear a speech by Don Marinelli, then-executive director of Carnegie Mellon's Entertainment Technology Center (ETC). Intrigued, they followed up with Marinelli, who suggested they partner with ETC and local education technology company Zulama to transform a space in their district. With guidance from these partners, district leaders, teachers, students, and facilities staff came together to create the Entertainment Technology Academy, a classroom that does away with the rows of desk and chalk board in favor of a flexible and collaborative learning space. Teachers use game design theory to offer engaging, effective English, math, art, design, and computer science curriculum. Encouraged, Elizabeth Forward's leadership didn't stop there.

Next came the EF Media Center, which transformed the static school library into an attractive high school hangout space with comfortable seating, gaming consoles, a stage, and state-of-the-art audio and video production studios. Then came the SMALLab, an interactive digital media space that used gaming to provide fun, kinesthetic educational opportunities for middle school students. Next came the Dream Factory, combining the middle school's art studio, shop class, and computer science lab into one integrated innovation space. In 2013, Elizabeth Forward launched a district-wide 1:1 iPad learning initiative for every student K–12. In 2015, they partnered with Chevron and the ETC to build an interactive Energy Lab for middle school students to learn about Earth, space, and energy concepts.

Rocco and Keruskin formed strategic partnerships with regional and national education innovators to advance their work, but they consistently remained grounded in the district, working closely with their school board, teachers, and students to develop, adapt, and improve spaces and programs.

Today, the district is one of 57 members of Digital Promise's League of Innovative Schools. More importantly, though, student test scores are up, their dropout rates are down, and the transition from "frontierland" to "futureland," as Superintendent Rocco likes to say, is well underway.

BY THE NUMBERS

In the 2008–09 academic year, 15 of Elizabeth Forward's 800 students dropped out, and more than 70 district students opted for charter or cyber schools. Today, **Elizabeth Forward's dropout rate is almost zero**, and only 11 students are enrolled in charter or cyber schools.

In state standardized testing, the district, which ranked #250 out of 500, has moved **up 105 spots** to #145.

Enrollment in summer enrichment programs has shot **up more than 500% since 2009**.

NETWORK IN ACTION

COMMUNICATE: SITE TOURS SHARE THE BEST OF THE NETWORK WITH VISITORS FROM OTHER REGIONS.

Elizabeth Forward has tapped in to the Remake Learning Network to share its success with other districts seeking to reimagine how teaching and learning works in today's classrooms. Responding to growing demand to see Elizabeth Forward's transformation in action, the district offers monthly **tours for teachers and administrators**. To date, the district has hosted more than 400 educators from more than 100 school districts from around the world.

Making Noise at the Library

THE LABS **is transforming the Carnegie Library into a laboratory of exploration, learning, and discovery.**

Some teens are naturally drawn to libraries. In fact, according to the Pew Research Center, teens are the biggest library user group in the United States. The Labs @ CLP is part of a growing nationwide effort to enhance traditional library services by creating new offerings that meet the needs of today's digital teens.

The Labs is Carnegie Library of Pittsburgh's teen-only creative technology program. By integrating innovative 21st-century learning opportunities into the library setting, The Labs enables teens to immerse themselves in filmmaking, photography, music composition, art, and even video game design. These offerings not only engage teens, they represent opportunities that may not exist in school or at home. Sometimes, the programming involves workshops with specific training and tutorials. Sometimes, the library offers "Open Labs," where teens can simply explore available resources to spark their curiosity. Either way, teens are opting-in to valuable learning experiences in community spaces around the corner from where they live.

Led by Digital Learning Librarian Corey Wittig, The Labs is helping CLP redefine its role in the digital age. "The future of the library isn't one patron coming in and working in isolation," Wittig says. "It's going to be a more

BY THE NUMBERS

Since launching in 2012, more than **5,000 teens** have participated in programming at The Labs.

The Labs has permanent space in 3 of CLP's 19 branches, and The Labs on Location initiative has expanded its reach to all branches through mobile programming.

The Labs average **more than 200 participants per month**.

networked experience, more hands-on, and with more tools available. That's the experience teens today have in The Labs."

Programs like The Labs @ CLP don't just benefit students—they benefit libraries. These are community institutions charged with cultivating and nourishing intellectual curiosity, cultural exchange, and lifelong learning. Today, those goals are increasingly achieved through new technologies. Libraries that take advantage of tools and techniques of the digital age can both advance their mission and boost participation. In the future, libraries may look less like static sanctuaries of arcane knowledge and more like active laboratories of learning.

> "The Labs @ CLP is a wonderful example of libraries adapting themselves for a new generation."
>
> **MAURA MARX**, DEPUTY DIRECTOR, INSTITUTE OF MUSEUM AND LIBRARY SERVICES

The Labs includes permanent, dedicated digital teen spaces at three of the Carnegie Library's 19 neighborhood locations where teenagers have free access to creative, informal project-based activities using digital and traditional technologies. A typical open session might include a music station with a microphone and recording software, an electric guitar, a digital pad that renders drawings into graphic designs, and a tablet with a stop-motion animation app. Workshops are more structured, allowing teen specialists and mentors to present planned activities focusing on building digital literacies.

To make sure teens can participate in the program no matter which branch library they call home, The Labs developed "Labs on Location" kits containing tools, materials, and instruction manuals for bringing digital learning to life across the city. Each week, a mentor visits a different CLP location to guide the local teen specialist through the software and technology integral to that day's lesson before co-facilitating that day's session.

The programs are often light and fun, but they still have significant impact on the lives of many teenagers. One teen uses The Labs to pursue his interest in technology. Captivated by the game Minecraft, he was encouraged by mentors at The Labs to explore more deeply, so he began doing research before sharing new Minecraft skins he created. Eventually, he gave the library staff tutorials on the game, before moving on to musical composition, robotics construction, and video game creation.

Above it all, The Labs creates a safe space where teens can learn while they unwind. At the end of a costume-making workshop one teen said, "This was really fun. I was having a bad day, and now I feel better."
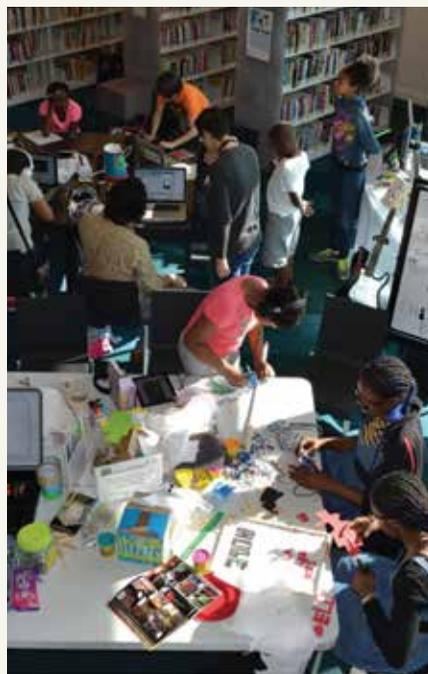
NETWORK IN ACTION

COORDINATE: SHARING RESOURCES WITH PARTNER PROGRAMS LEVERAGES STRENGTHS OF THE NETWORK.

In addition to creating its own original workshops, The Labs **coordinates programming** with other Remake Learning Network members to host guest sessions in its spaces, expanding the range of program choices teens have, and also helping partner programs raise their level of exposure in the community.

The Labs has hosted fine arts programming from the Carnegie Museum of Art and Mattress Factory contemporary art gallery, media production tutorials from Pittsburgh Filmmakers and Hip Hop on L.O.C.K., and maker workshops from TechShop.

Throwing a Party Where Guests Come to Learn

MAKER PARTIES create free, open, and accessible events for anyone to engage with hands-on learning activities that are fun and creative.

How do you make learning an exciting and fun part of life for kids who'd rather be doing anything but? Part science fair and part arts festival, Maker Parties offer a wide sampling of arts- and technology-based activities that turn learning into a party for children, youth, and families.

Globally, Mozilla, the nonprofit working to keep the Web open and accessible to all, organizes and promotes Maker Parties as a way to introduce hundreds of thousands of people to new digital learning opportunities. Maker Parties bring together local organizations, educators, community members, and skilled mentors to host a free hands-on pop-up learning event for teens and tweens.

The impact of a Maker Party is two-fold. First, it creates a unique exposure opportunity for learners to engage in web literacy learning—many, for the first time. Second, it expands the reach of local service organizations, which can engage new students and parents with compelling programming.

In Pittsburgh, Maker Parties are one of several public showcase events hosted by members of the Remake Learning Network to create anywhere,

BY THE NUMBERS

In 2014, there were **2,515 maker parties** in 86 countries. Those parties engaged more than 300 organizational partners, who recruited **1,036 mentors** to teach **127,200 learners** around the world.

Pittsburgh hosted five community Maker Parties in 2014, engaging more than **500 young people** in a range of hands-on experiential learning.

anytime learning opportunities. The Sprout Fund organized Pittsburgh's first Maker Party in 2013 when it launched a local Hive Learning Network. And, in 2014, four additional Maker Parties popped up in neighborhoods throughout the city.

> "Maker Party joins thousands of people across the globe to make something amazing, teach each other new skills, and have a great time doing it."

CHRIS LAWRENCE, V.P. OF LEARNING, MOZILLA FOUNDATION

Maker Parties can be any size, with small parties ranging from 2 to 5 participants, medium parties ranging from 5 to 50 people, and large events involving 50 or more. Larger Maker Parties include stations where learners can make physical and digital projects like animations, web apps, and games. In order to keep the crowd moving among stations, activities are simple enough that they can be explored in as little as 5 minutes, but deep enough to last longer if they capture a young person's interest.

At the big Pittsburgh Maker Party in 2014, arts education organizations from the Remake Learning Network offered traditional activities like the Andy Warhol Museum's screen-printing station and the Society for Contemporary Craft's papermaking workshop, while Assemble and TechShop offered maker learning experiences that bridged art and technology. The Digital Corps led sessions on webmaking and programming, while Steeltown Entertainment helped kids make short films and animations.

And of course, free music and food truck delicacies helped make the event a complete experience.

"I worked on the Thimble coding," said one teenager at the 2013 Pittsburgh Maker Party. "What we did was we placed pictures in boxes and we put captions there. So, I wrote an online story about pancakes and dancing. It was really cool."

The Maker Party campaign builds on a long history of learning pop-ups that happen in neighborhoods, at summer festivals, and holiday events all over. To update these age-old events for the digital age, Mozilla has collected resources at *teach.mozilla.org*, including step-by-step guidance on event execution, promotional materials, and low-fi teaching kits for use when there's not Wi-Fi on site.

NETWORK IN ACTION

COMMUNICATE: SHOWCASE EVENTS CREATE OPPORTUNITIES TO HOOK LOCAL PRESS.

Through marketing and media outreach, the Remake Learning Network uses public events like Maker Parties to raise greater public awareness of and engagement in learning innovation—not just for the folks who show up and get involved, but for the broader public who see these events reported in the press.

As a fun, lively, and highly visual event, the Pittsburgh Maker Party in August 2014 attracted coverage by Pittsburgh's two major daily newspapers and its CBS affiliate television station. A high-quality local event connected to a global campaign created a concentrated amount of media attention and helped raise awareness of new ways kids can learn and be creative.

Exploring Digital & DIY Learning at the Museum

MAKESHOP at the Children's Museum of Pittsburgh creates space for kids to use their hands and minds to bring ideas to life.

In 2010, Children's Museum director Jane Werner and Drew Davidson from Carnegie Mellon's Entertainment Technology Center (ETC), got to chatting at a network event. They started discussing the Maker Movement and the ways in which increasing access to physical and digital tools and techniques may enable children and youth to express their interests and make almost anything. They wondered what would happen if they developed a space in the Children's Museum of Pittsburgh where visitors could explore, imagine, and create through making as a learning process. Not only would it enhance the educational value of the Museum's offerings, it would bring more children and families through the doors and encourage them to stay for longer.

In partnership with the ETC and the University of Pittsburgh Center for Learning in Out-of-School Environments (UPCLOSE), the Children's Museum began prototyping programs in electronics, sewing, woodworking, and digital media and studying how children and families engaged in hands-on maker learning.

Dr. Lisa Brahms is the Director of Learning and Research at the Museum. Dr. Brahms began her work in the Museum as an UPCLOSE research fellow studying the development of MAKESHOP from its earliest stage to its current status as a permanent exhibit for hands-on learning. She now leads the effort to understand and develop the Museum as a place of informal learning.

BY THE NUMBERS

More than 100 teachers participated in the 2013–2014 Maker Education Boot Camp Program, with more than 70% reporting **significant or transformative change** in their professional practice as a result.

In 2014, the Children's Museum began a cooperative project with the Institute of Museum & Library Sciences to create a national framework which identifies the key elements that support learning in museum and library makerspaces.

Four years later, MAKESHOP is a fully-staffed, permanent exhibit offering ongoing programs for children, youth, adults, and educators. Tailoring the visitors' experiences to their interests, MAKESHOP encourages exploration, creativity, and play by offering access to the materials, tools, and processes of making.

The purpose of MAKESHOP is to challenge and nurture creativity by offering experiences with real materials and real tools that match visitors' interests. The people, or educators, are key to the ongoing success of MAKESHOP, and identifying educators who are also skilled makers has proved essential. MAKESHOP educators continue to work hard to prototype how access to various tools, materials, processes, and ideas affect the design of visitor learning experiences and facilitation.

> "MAKESHOP has really made us think differently about what it means to be a museum and the role of museums in people's lives."
>
> **JANE WERNER**, EXECUTIVE DIRECTOR, CHILDREN'S MUSEUM OF PITTSBURGH

The results of MAKESHOP's careful process have been significant. At the Children's Museum, attendance is up since MAKESHOP's inception, and the average age of child-visitors has increased. Families' engagement is noticeably deeper and prolonged. Through partnerships and outreach with schools, libraries, and out-of-school learning sites, the Children's Museum has helped these organizations grow educator capacity and integrate making in meaningful ways. Through its annual Maker Educator Boot Camp, the Museum has provided educators with maker-based professional development opportunities that can be put to use in the classroom. MAKESHOP has also partnered with the Maker Education Initiative to host and train Maker Corps members who can facilitate making experiences across the region.

Now MAKESHOP is reaching beyond the walls of the Museum, working with schools and out-of-school educators to develop engaging, effective, and evidence-based maker learning opportunities for a diverse array of the region's kids.

In 2012, the Children's Museum received a **$440,000 grant** from IMLS to conduct foundational research on **family learning in museum makerspaces**.

NETWORK IN ACTION

COORDINATE: NETWORK RESEARCH GATHERS EVIDENCE OF WHAT'S WORKING FOR SHARING WITH OTHER REGIONS.

In the spirit of sharing resources, the Learning and Research team has worked with MAKESHOP staff to identify seven core learning practices that empirically describe children's engagement in MAKESHOP—inquire, tinker, seek and share resources, hack and repurpose, express intention, develop fluency, and "simplify to complexify"—creating a common language around making as a learning process.

This important **network research** has created definitions to help maker educators both in the Remake Learning Network and elsewhere deepen their understanding of making and translate the practices of MAKESHOP to other contexts.

A Playground for Teachers

transformED reimagines the look, feel, and purpose of professional development for teachers.

Depending on the session, transformED can accommodate somewhere between 16 and 30 teachers and administrators. All sessions are currently at capacity.

Traditionally, professional development for educators has been in the form of lectures and presentations in a dimmed auditorium on mandatory in-service days. The sessions can feel perfunctory and not entirely relevant. In a word, they can be boring.

Responding to a call from teachers for more meaningful professional development, the Allegheny Intermediate Unit (AIU), a local education service agency, created transformED, and in the process flipped professional development on its head. Through engaging, interactive, and creative sessions, teachers learn innovative instructional practices, explore these new teaching methods, play with new products, software, and tools they might use in their classrooms, and understand curricula. It's a space where teachers can engage with one another to learn how they might integrate novel teaching approaches into their classroom practice.

"We're not sitting people in rows. We really want to engage them in a fun, engaging way," says Rosanne Javorsky, Assistant Executive Director of Teaching & Learning at the AIU. "It's OK to make mistakes in here. It's OK to say, 'Hey,

BY THE NUMBERS

Teachers participating in transformED sessions come mainly from the 42 Allegheny County school districts as well as some charter schools and private schools.

Depending on the session, transformED can accommodate somewhere between 16 and 30 teachers and administrators. **All sessions are currently at capacity**.

I don't know how to do this.' We want teachers to step outside their comfort zone. And we want to help them work through it."

Without motivated teachers, no technology breakthrough can deeply affect the academic journey of students in school. transformED has created the space for teachers to have the kind of professional development experience that ignites passion and curiosity, instead of stifling it.

transformED offers teachers opportunities to work with ed-tech tools like MaKey MaKey, Gigapan, 3-D Printers, and Hummingbird Robotics Kits. Session facilitators are not just expert teachers; often they are technologists, artists, and designers.

The boundaries between presenters and teachers quickly dissolve during interactive sessions.

"How do we create thinkers and learners, not just smart kids? We need a professional development space where teachers can keep pushing education forward."

ALISON FRANCIS, CREATIVITY & LITERACY PROGRAM FACILITATOR, KERR ELEMENTARY SCHOOL

"It just happens," says Megan Cicconi, AIU's Director of Instructional Innovation, who works closely with teachers and trainers in transformED. "It's just a very collaborative space that lends itself to exploratory learning,"

During one workshop on "squishy circuits," participants took turns playing an interactive video game to cement circuitry principles. Then, they donned aprons and followed a recipe to make two types of Play-Doh: conductive and resistant, and eventually hooked their Play-Doh sculptures up to a battery pack and LED lights. The teachers discussed how students could use the salty, conductive Play-Doh to turn on the LEDs to learn how electricity flows.

Teachers leave transformED sessions more excited to use tech tools in their classrooms, and a community of practice—teachers, technologists, and administrators—to nurture that excitement.

NETWORK IN ACTION

CONVENE: IDEATION EVENTS GENERATE NEW IDEAS FOR NETWORK INITIATIVES.

Innovative professional development was a topic of discussion in the Remake Learning Network years before transformED first launched in February 2013. At Making Sparks 2010, a network event convening members to generate ideas for new projects, at least three discussion groups sketched plans for a 'digital playground for teachers.' Recognizing the growing demand among network members, regional funders enthusiastically support AIU's efforts to turn these ideas into reality with transformED.

COORDINATE: NATIONAL PARTNERSHIPS CONNECT NETWORK MEMBERS TO UNIQUE OPPORTUNITIES.

AIU uses transformED to host new professional development initiatives in coordination with national organizations like Common Sense Media, which hosts regular "Appy Hours" in the space for teachers to try the latest in educational software, and the Institute of Play, which hosts its annual TeacherQuest, helps dozens of Pittsburgh teachers design new games and game-like learning experiences.

Plays to Convene

Bring together a diverse cross-section of your community, organize them around a shared vision, and keep them engaged with ongoing opportunities to grow professionally and participate in the creation of a community of practice.

THINKING QUESTIONS:

GOALS: What are your overall goals for convening your network?

CALL TO ACTION: What is the call to action for convening? Why should people want to convene at all? What will the network offer people that they do not currently have?

CHALLENGE & OPPORTUNITY: What challenge or opportunity will bring people together? Does your community have a particular speciality or focus area to rally people around?

CURRENT STATUS: Are you seeking to formalize a body of professionals already working together informally? Expanding participation by bringing new people into the network? Starting from scratch?

BREAKING DOWN SILOS: How will your convening strategies generate opportunities for cross-sector collaboration among the potential network partners you've already identified?

LEAD: Who will take the overall lead in convening your network?

SMALL GROUPS

Host open and informal meetings for small groups of network members with shared interests to provide ongoing opportunities for network members to meet, share, and collaborate, whether in face-to-face meetups or through online webinars and hangouts.

▸ **Choose a topic:** Decide what you will bring people together to discuss, whether it's the formation of the network itself, or a particular approach to learning that the network can implement.

▸ **Pick a date, time, and location:** Get the basics of an invitation together by choosing a date 4-6 weeks in the future and securing a meeting space. Even a café or diner can work as a starting point. Also think about how frequent these convenings should be.

▸ **Create an invite list:** Identify people you want to bring together, being mindful of their interests, availability, and potential contribution to the network. To start, aim for 10-16 invitees, anticipating 8-12 actual attendees.

▸ **Prep the discussion:** Include a general outline of the meeting agenda with your invitation and encourage participants to add their own discussion items or come with materials to share.

▸ **Document the meeting:** Ask for a group member to serve as temporary secretary, taking meeting notes and keeping track of what group members are asked to do and what commitments they make.

▸ **Share out:** Following the meeting, revise and publish your notes, along with any images (drawn or photographed) that illustrate what the group talked about and sharing any specific calls-to-action.

LUNCH & LEARNS

Create opportunities for network members to share their expertise and demonstrate their work for other network members by hosting daytime lunch-and-learn events or evening happy hour gatherings where attendees can learn from one another and consider how they may take advantage of ideas, practices, and upcoming opportunities.

Invite a speaker: Identify someone from your network or a visitor to your community who has an interesting perspective on learning, a new project or product they'd like to present on, or a conversation they'd like to start.

Pick a date, time, and location: Get the basics of an invitation together by choosing a date 4-6 weeks in the future and securing a meeting space.

Order food: Simple boxed lunches, a selection of wraps, or a build-your-own burrito spread are all affordable options to feed a small group.

Advertise: Get the word out through your newsletter and social media accounts. Ask the venue to add the event to their calendar, and provide the speaker with content to share with his or her professional contacts.

Prep the discussion: Ask the presenter to share a general outline of their presentation in advance and develop some discussion questions you can have ready for the Q & A portion of the lunch and learn.

Document & share: Create a record of the event that you can share with network members who aren't able to make it. If the event is the first of its kind, consider inviting the press as well.

PROFESSIONAL DEVELOPMENT

Offer professional development sessions and continuing education credits to educators and other professionals seeking to incorporate new and innovative teaching methods into their practice, or partner with established professional development agencies to offer credit at network events and activities so that more educators find valuable professional opportunities at network events.

Find a partner: Identify a school or support agency in your community who can provide continuing education credits and reach out to them to begin planning.

Plan your session: Work with an innovative educator in your network to develop a workshop session that turns their innovative approach into a training session, or search for such resources on the web.

Reach out to educators: Share information about the session with school administrators and others who can contact educators directly and invite them to participate.

Incentivize participation: If possible, dedicate a small amount of follow-on funding to support educators interested in putting their new knowledge into practice through a pilot project.

Document & share: Work with professional development providers to turn the session into a resource kit you can make available to even more educators.

Offer continuing support: Gather external resources or prepare your own materials for educators to use as an ongoing reference. Keep in touch with educators after they leave the session and support their progress as they implement ideas in their classroom.

NETWORK ENGAGEMENT EVENTS

Invite all network members to gather for important occasional events where members can establish relationships, focus their attention on issues and opportunities of critical importance, collaborate directly in facilitated discussions, reflect on past accomplishments and look ahead to potential future opportunities.

▸ **Set your goals for the event:** Identify your audience and determine what you want them to learn and/or do as a result of participating in the event. This will guide the rest of your decisions. Keep the goals few and simple.

▸ **Pick a date, time, and location:** Get the basics of an invitation together by choosing a date 12-16 weeks in the future and securing a meeting space.

▸ **Plan the program & Build a budget:** Decide the format of your event, sketch out a floor plan, draft a basic agenda, and create a Run-of-Show. Tabulate your anticipated expenses for the venue rental, food and refreshments, event logistics, and any speaker or programming costs.

▸ **Save the date:** Once you've confirmed the basics, send a save the date no more than 10 weeks in advance. Send a real invitation with registration details at least 6 weeks prior to the event.

▸ **Facilitate new ideas:** Use discussion techniques like human-centered design to engage event participants in productive conversations. Start with a topic, theme, or challenge, and guide them through collaborative activities that generate new ideas.

▸ **Document & share:** Create a record of the event that you can share with network members who aren't able to make it. If the event is the first of its kind, consider inviting the press as well.

ANNUAL CONFERENCES

Host or partner on annual events for specific groups of network members such as education technology conferences for entrepreneurs and commercial partners, academic summits for researchers and scholars, and professional development events for out-of-school educators or early childhood education specialists.

▸ **Set your goals for the event:** Identify your audience and determine what you want them to learn and/or do as a result of participating in the event. This will guide the rest of your decisions. Keep the goals few and simple.

▸ **Pick a date, time, and location:** Get the basics of an invitation together by choosing a date at least six months in the future and securing a meeting space.

▸ **Invite participants:** Identify speakers and exhibitors, invite them to participate, and find out their technical, space, and media needs.

▸ **Plan the program & Build a budget:** Decide the format of your event, sketch out a floor plan, draft a basic agenda, and create a Run-of-Show. Tabulate your anticipated expenses for the venue rental, food and refreshments, event logistics, and any speaker or programming costs.

▸ **Save the date:** Once you've confirmed the basics, send a save the date no more than 16 weeks in advance. Send a real invitation with registration details at least 12 weeks prior to the event.

▸ **Document & share:** Create a record of the event that you can share with network members who aren't able to make it. If the event is the first of its kind, consider inviting the press as well.

EXTERNAL SPEAKERS

Invite thought leaders to visit your community and speak to network members as a means of importing knowledge and creating opportunities for partnership and collaboration with other regions also working to remake learning.

▸ **Set your goals for the event:** Identify your audience and determine what you want them to learn and how they will use this new knowledge in their practice. This will guide the rest of your decisions. Keep the goals few and simple.

▸ **Invite and secure a speaker:** Survey the national landscape of writers, speakers, and leaders you pay attention to and can get in touch with. Find the speaker's appropriate contact, which might be a speakers bureau or manager, and reach out with a formal invitation to speak to your network.

▸ **Secure a venue:** Based on the dates of your speaker's availability and intended audience, rent or borrow a venue that will accommodate your anticipated attendance and provide the requisite audio-visual capabilities to meet the speaker's needs.

▸ **Save the date:** Once you've confirmed the basics, send a save the date no more than 10 weeks in advance. Send a real invitation with registration details at least 6 weeks prior to the event.

▸ **Document & share:** Create a record of the event that you can share with network members who aren't able to make it. If the event is the first of its kind, consider inviting the press as well.

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Plays to Catalyze

Empower network members to put their ideas into action by providing financial support for new initiatives and programs that directly impact children and youth, and create proof points for why learning innovation matters.

THINKING QUESTIONS:

GOALS: What are your goals for catalyzing innovation? Are you starting from scratch or are there already early-stage projects or promising new initiatives that can grow into exemplary projects?

GREATEST NEED: Where would funding have the greatest impact in your community? In support of educators to deliver innovative instruction? In the creation of new and innovative learning programs? In research initiatives? In the development of new ventures and enterprises?

FUNDING FOCUS: Where do you want to catalyze innovation? Is there a specific topic area or approach to learning that your community is focused on?

BEYOND DOLLARS: What kinds of non-financial assistance do your network members need? Are they struggling to find partners? Do they need technical support or professional development?

LEAD: Who will take the overall lead in catalyzing innovation in your network?

CATALYTIC GRANTS

Offer small-scale funding awards to catalyze new and innovative learning programs and projects both in school and out-of-school so that network members have the support necessary to put their ideas into action through pilot programs, design partnerships, and product prototypes that educators and students can use to explore new ways of teaching and learning.

▸ **Establish a framework:** Write down the characteristics of the kinds of projects you seek to support, specifying the size, age, background, and geographic bounds of target audiences, the topic or content area the grants will focus on, and any requirements critical to success.

▸ **Set a budget:** Determine the size and quantity of grants you seek to make. Projects can be catalyzed for as little as $5,000 and are most effective when they contribute to a critical mass of activity. Aim to make at least 3-5 projects in your first round.

▸ **Build an application:** Draft a grant application form that includes questions that help you determine if an applicant fits within your established framework.

▸ **Recruit decisionmakers:** Seat a committee of volunteers from your network who are unlikely to apply for a grant and can make objective funding decisions based on the network's funding goals and grantmaking criteria.

▸ **Support all applicants:** Provide ongoing project assistance to funded project teams to ensure their success. Provide follow up advice to denied applicants to help them improve their application or partner with other network members.

PROJECT ASSISTANCE

Provide value-added services to support the professional and leadership development of network members by connecting them with experienced mentors, equipping them with toolkits and guides, and partnering unincorporated groups with fiscal sponsors.

▸ **Survey the network:** Use a simple online survey tool to find out what your network members need most. Provide them with both suggested services, as well as space to write in their own ideas.

▸ **Gather and share resources:** Based on survey responses, compile a list of local support organizations and online resources you can make available to your network and outline their service offerings.

▸ **Recruit resource partners:** If there are local agencies interested and available to provide project assistance services to your network, reach out to them and begin a partnership. Determine a mutually beneficial arrangement.

▸ **Share with network:** Publish your list of available resources to your website and host a series of small info sessions to introduce network members to the new services available to them.

▸ **Engage network members:** Meet face-to-face with network members, host a meeting or webinar, or present at a resource fair where you can introduce your menu of network supports to your target audiences.

RESEARCH FELLOWS

Provide research fellowships to invest in local thought leaders including researchers, scholars and practitioners who can partner with other network members to study learning innovation in practice, evaluate the effectiveness of programs, and provide informed guidance in the design or re-design of programs.

▸ **Build your research capacity:** Determine how support for research fellows will contribute to the overall capacity of your network. Consider how support for graduate-level researchers would build a local brain trust, while support for more senior researchers would elevate their prominence.

▸ **Define the question:** Decide on a challenging question currently facing your network that researchers can begin working to answer. Consider how work toward answering the question will add value to your network members, educators, and other practitioners.

▸ **Set a budget:** Determine the amount of money required to support both the fellow's time and any material or technology costs to complete the work. Remake Learning research fellowships have ranged from $5,000 to $10,000.

▸ **Create a call:** Develop a call for research proposals that describes the main goals of the fellowship and outlines expectations for the researcher to work with network members.

Share the call with local colleges and universities with research institutes in the field or research-oriented graduate programs.

▸ **Share the results:** Create opportunities to share the results of the fellow's research with other network members, such as small report-out events or a high-level summary of the work with specific recommendations.

REQUEST FOR PROPOSAL

Make strategic funding available through contests, competitions, or Requests for Proposal (RFP) to focus the network's attention on issues and opportunities of critical importance, such as summer learning loss prevention, school classroom transformation, or in coordination with national campaigns like City of Learning.

▸ **Establish a framework:** Define the specific topic or challenge that is the focus of the funding opportunity, the desired impact of the supported projects, the geographic bounds of target audiences, and any requirements critical to success.

▸ **Set a budget:** Determine the size and quantity of grants you seek to make. Local RFPs released to the Remake Learning Network have ranged from $35,000 to $50,000.

▸ **Draft the RFP:** Draft a request for proposal that describes the goals of the funding opportunity, the available budget, the specific challenge or topic the applicants must focus on, and the outcomes supported projects are expected to achieve.

▸ **Recruit decisionmakers:** Seat a committee of volunteers from your network who are unlikely to apply for a grant and can make objective funding decisions based on the network's funding goals and grantmaking criteria.

▸ **Plan documentation:** Support the strategic success of the selected projects by documenting the process and outcomes of the projects with photography, writing, and other media that will further elevate the importance of the focus area among network members.

INCUBATE VENTURES

Establish or support existing start-up incubators where local entrepreneurs can develop emerging education technology concerns and connect with educators and researchers in the network to co-design, playtest, and evaluate new education technology products.

▸ **Assess community capacity:** Partner with a business development agency, chamber of commerce, or incubator to identify ed-tech enterprises in your community or target those based elsewhere, but ready for collaboration with educators.

▸ **Define a focus area:** Based on your assessment, determine if your community possesses strengths in particular ed-tech areas such as software, hardware, game-based learning, learning management, or online learning.

▸ **Connect entrepreneurs and educators:** Host a convening to facilitate brainstorming and exchange among educators interested in ed-tech innovation and entrepreneurs looking for input from educators.

▸ **User testing:** Partner with network members interested in offering their space or programs to be used as testing ground for prototype ed-tech products.

▸ **Curriculum development:** Recruit curriculum specialists to help ed-tech enterprises develop lesson plans and curricular materials educators can use to support their application of new ed-tech products in their classrooms.

▸ **Teacher training:** Partner with professional development agencies to develop training modules that help educators learn to use new ed-tech products emerging from incubators.

NATIONAL FUNDING SUPPORT

Seek opportunities to secure funding commitments from national philanthropies, government agencies, and other stakeholders by matching network members leading in specific areas to anticipated priorities, and providing technical assistance to apply for national funding opportunities.

▸ **Review the funding landscape:** Do some research on current funding opportunities available from private foundations, corporate giving programs, and government agencies. If contacts are available, reach out to establish communication with program officers.

▸ **Evaluate opportunities:** Based on your review of current funding opportunities, determine which opportunities are the best fit for your network based on your local interests, your level of network maturity, and other important factors.

▸ **Recruit partners:** After choosing an opportunity to pursue, determine who from your network will need to participate. Reach out to these partners to confirm their interest and availability to participate, and find out how they can contribute to the application.

▸ **Prepare an application:** Major funding requests can require a lot of work and back up to demonstrate your readiness for funding. Budget the appropriate amount of time to draft the application and gather any required supporting materials from partners.

▸ **Plan for the best:** During the application process, begin to sketch out how you will leverage this national funding to further develop the capacity of your network and its long-term sustainability.

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Plays to Communicate

Amplify the voice of network members by documenting success, telling stories, gathering evidence, and joining the global conversation about learning innovation.

THINKING QUESTIONS:

GOALS: What are your communications goals? Are you seeking to enhance communication among network members? Are you seeking to shape public discourse? Are you seeking to increase the level of press coverage of your network?

MESSAGE: What is your core message? What major education challenges are your network responding to? How is your network's approach to this challenge new, innovative, and distinct? What are your best examples of effectiveness?

AUDIENCE: Who is the target of your communications? Educators? The press? Parents and families? Children and youth? What do you have to offer each and what is the best method to reach them?

VOICE: What is your network's point-of-view? Who guides the development of the network's voice? How does your network's voice support its mission?

MEDIUM & METHOD: What kinds of communications content would be most useful to your network? Do you need to build a media library? Do you need in-depth stories or reports? Do you need content for press outreach, social media, and blogging?

LEAD: Who will take the overall lead in communicating on behalf of your network?

AMPLIFY YOUTH VOICE

Invite young people to contribute authentic stories and personal reflections on their learning experiences and other forms of participation in the network in order to create a public channel for sharing the voices of youth impacted by the network with the members themselves, as well as other audiences.

▸ **Pick a topic to focus on:** Get started by choosing a topic for youth to respond to, such as a story in the current news cycle or a topic that youth are eager to address.

▸ **Choose a media format:** Determine how you would like youth to respond, such as sharing a video on YouTube, photos on Instagram, or written stories for blog posts.

▸ **Find a partner:** Identify programs or organizations in your community already engaging youth in storytelling or media production. Invite them to take the lead on amplifying youth voice in your network.

▸ **Invite youth participation:** Issue a call for contributions and share it with youth-serving agencies in your community. Be sure to specify submission guidelines for various media

and gather release forms signed by the children's legal guardians giving you permission to share work by the youth.

▸ **Collect and share:** Choose the best submissions and prepare them for publication, either through your own blog, or via social media using a shared hashtag to link the youth stories together.

BLOG

Join the global conversation about the future of learning through a weblog where you share stories, news, and 'think-pieces' with network members to keep them informed, and where network members can see their work represented within the broader context of learning innovation.

▸ **Find a home for your blog:** If you don't already have a blog, you'll need to create one from scratch. Choose a blogging platform, purchase a memorable domain name that represents your network, and make it look nice.

▸ **Set your budget:** Purchase a domain and a hosting package. Find out the going rate for freelance writers in your community and determine how much work you can afford to hire.

▸ **Establish your editorial goals:** Describe your target audience and the kinds of content your blog will serve them. Decide whether you will publish short, frequent posts about current news or longer, occasional posts that dig deeper into key topics, or a combination.

▸ **Create a publishing schedule:** Create a calendar that guides what you plan to publish when. Work backwards from your publishing dates to set draft and final deadlines for writing assignments.

▸ **Build Your Team:** You'll need help to review and revise blog posts, even if you plan to do most of the writing yourself. Reach out to freelance journalists, graduate students, or active bloggers in your network.

▸ **Post, share, & engage:** Share posts widely via your social media followers and email list subscribers. Be sure to create opportunities for people to comment and provide feedback to your blog.

SOCIAL MEDIA

Establish a social media presence for the network that speak on behalf of the network, using shared hashtags so that network members can contribute to the conversation and rally around special opportunities, by participating in scheduled social media events, and joining the social media backchannel happening at local and national events.

▸ **Start with a strategy:** Determine the purpose of your social media activities. Balance your use of social media for the purposes of directly engaging network members and for promoting the network.

▸ **Create an account:** If your network doesn't already have a social media presence, create accounts on Twitter, Facebook, and Instagram in the name of your network.

▸ **Connect with your network:** Immediately follow, friend, subscribe, and like the people and organizations who form the core of your network on social media.

▸ **Build your following:** Identify key people and organizations in your community who are influential in your community and be sure to follow, friend, and subscribe to their social media accounts. Tag them in your messages to draw their attention to your work.

▸ **Organize Engagement:** Follow specific hashtags that relate to the interests of your network, join pre-scheduled twitter chats about education and innovation, and consider organizing your own conversation around a specific event or topic using a new hashtag.

▸ **Follow a calendar:** Maintain a social media calendar to keep the conversation going without having to spend every day on your social media account.

CONFERENCE PARTICIPATION

Provide stipends to send individuals or delegations of network members to relevant conferences in to establish a physical presence for the network among leaders in the field and to support network members invited to present or speak at events.

▸ **Identify target conferences:** Create a "shortlist" of events and conferences where you feel your network must have a presence. If possible, select multiple conferences across a range of dates throughout the calendar year.

▸ **Set a budget:** The cost of attending a conference can vary greatly from event to event. Set a maximum budget you can afford to offer, even if it doesn't cover all the costs. If possible, dedicate enough funding to help network members participate in at least 5-6 conferences per year.

▸ **Tap ambassadors:** Identify network members who can act as representatives for the whole of the network and provide them with talking points and marketing materials they can distribute and leave behind at the event.

▸ **Post-event reports:** Require network members who receive conference stipends to share what they learned with other network members in small report-out events, guest blog posts, or an interview that can be shared in your network newsletter.

DIRECTORY

Create a digital directory that collects the basic information and contact details for the people, programs, and organizations that make up the network so that network members can see themselves as part of a larger whole, access a catalog of available resources and support services, and browse a calendar of upcoming events and opportunities to engage.

▸ **Choose a system:** There are several directory tools to choose from, from WordPress blogs to wikis. Choose a system that you adapt to your needs and allow others to contribute.

▸ **Establish membership criteria:** Use guidelines to evaluate if new directory entries are suitable for listing. Your criteria should include a checklist of qualities that describe ideal network members.

▸ **List your first entries:** Determine the people, projects, and organizations in your community who must be included in the first round of directory entries. These are the core participants of your network.

▸ **Gather information:** Reach out to your first entries and ask them to submit the required information directly to you or via a submission form process built in to the directory.

▸ **Invite contributions:** Once you've built out your core membership, reach out to the broader community and invite others to add themselves to the directory.

▸ **Keep it up to date:** Schedule time for regular review and maintenance of the directory like revising entries for accuracy and consistency. Also consider sending regular reminders to network members to review their own entries.

NEWSLETTER

Deliver relevant and actionable content on a regular schedule, including links to relevant news stories and reports, as well as alerts about upcoming events and opportunities, so that network members can stay informed and engaged and begin to identify the network as a reliable source for information.

▸ **Choose a service:** There are several affordable options for email marketing, including MailChimp and Constant Contact. Subscriptions typically vary based on the size of your distribution list, so set your target list size and choose a service that works for you.

▸ **Build your distribution list:** Create a basic spreadsheet of the people you want to send emails to, starting with the core members of your network. Be sure to ask people for permission before sending them a mass email marketing message.

▸ **Gather content:** Decide what major categories of content you will include, such as major news, upcoming events, job openings, funding opportunities, current research, etc., and bookmark your sources for this content.

▸ **Design a template:** Create a simple, well-organized, and easy-to-understand layout for your message. Be sure to include a link to sign up for your email so that people who receive your message as a forward may sign up.

▸ **Send on a schedule:** Start by sending a monthly message and adjust the frequency of your distribution cycle based on the needs of your network.

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PRESS OUTREACH

Pitch stories to local and national press contacts that highlight the exceptional work of specific network members, elevate the profile of experts and leaders within the network for quotation and comment in larger stories, and help to establish the community as a place where educators and innovators are taking concrete steps to improve learning opportunities for young people.

▸ **Develop a press strategy:** Define what successful press coverage means to your network, the key points you want to be covered, and set some basic goals for where and when you will secure coverage.

▸ **Choose your news:** Identify a legitimate piece of news generated by a member of your network and begin gathering basic information like the who, what, where, and when of the story.

▸ **Create a hook:** Craft a story that relates your news item to a topic or event that will likely generate coverage in your local media market.

▸ **Create a press kit:** This can be as simple as press release announcing a new initiative or a media advisory inviting coverage of an event, or as in-depth as a background briefing about your network.

▸ **Build your press list:** Get to know the reporters and editors working in your community. Look for contacts who are already writing about education, youth and family issues, and innovation.

▸ **Send messages and follow up:** Send personal messages to your press list targets with your background materials attached. Follow up with a phone call if you don't hear back within a day.

DOCUMENTATION & STORYTELLING

Commission writers, photographers, videographers, and designers to produce original stories and images that capture the network in action, shine a spotlight on network success stories, and amplify the voice of individual network members.

▸ **Outline your goals:** Identify the intended audience for your documentation products and imagine the kind of story that will resonate with them and the kind of media that will reach them.

▸ **Set a budget:** Costs vary depending on the type, quantity, and quality of the work. Videos are typically most expensive. Writing budgets often depend on the amount of original field reporting required.

▸ **Pick your subjects:** Write a briefing of the key features and big ideas to be captured and an explanation of how the subject relates to your larger efforts as a network.

▸ **Commission the work:** Hire professionals to produce the work. Search your community for photographers, videographers, and writers and reach out to those who produce work you like.

▸ **Get permission:** Be sure to collect signed media consent and release forms from anyone who will be included in visual media, especially minors.

▸ **Publish & share:** Post your completed piece to your own blog and also offer the materials for syndication in other local media and allied organizations. Be sure to share links to members of your network and other targeted people via social media.

▸ **Repurpose & reuse:** High-quality documentation, especially photos and written profiles, can be used as a rich source of evidence of the growth and impact of your network in proposals and reports.

PUBLICATIONS

Publish documents that report on network activities and accomplishments and capture and share the best of the network's learnings that can act as resource guides for others seeking to implement similar programs and strategies.

▸ **Plan your publication:** Choose the kind of document you will produce, such as a document that summarizes the network, a resource guide that contains practicable guidance for educators in your network, or a promotional piece that highlights your network's success stories.

▸ **Assemble a production team:** Recruit an expert from your network to draft original content, an editor to shape and polish written content, and a designer to design an attractive and functional product.

▸ **Set a budget:** Estimate the budget of your publication based on the cost of writing, editing, designing, printing, and distributing your publication. Keep in mind that per-unit printing costs can decrease dramatically as the quantity of copies increases.

▸ **Set a production schedule:** Choose a date when you will need to have publications in-hand and work back from there, factoring several weeks for the printing, designing, editing, and writing phases of the work.

▸ **Promote & distribute:** As the final publication reaches completion, begin alerting your network members, as well as external audiences and press targets, to generate anticipation for the publication. Identify members of your network who can help distribute a portion of publications.

FROM LOCAL TO NATIONAL

Share examples of network success with influential audiences by inviting peers, policymakers, researchers, and funders to visit and tour the network and by seeking opportunities to showcase network success at national events focusing on learning innovation.

▸ **Identify national targets:** Create a list of foundations, think tanks, publications, and influential people who need to know about your network. Gather their contact information and make notes of their particular interest.

▸ **Choose exemplars:** Identify a "shortlist" of exemplary places, projects, and organizations that best represent your network and relate to the interests of your national targets.

▸ **Reach out beyond your community:** Invite people from your list of national targets to visit your community and see how you are remaking learning. Be sure to include some high-quality documentation to give them a preview of what they'll see when they visit.

▸ **Identify local experts:** Make a list of people from your network who can be recognized as experts in their field and equip them with talking points and background materials about the network to share during their next interview.

Plays to Coordinate

Establish a structure for the network that enables individual members to do what they do best, while also collaborating across sectors and sharing resources effectively.

THINKING QUESTIONS:

GOALS: How will network coordination contribute to building your network's capacity? How will network members leverage cooperation to support their own goals?

OVERCOMING OBSTACLES: What barriers may be preventing coordination from happening naturally? Is there a gap in communication that you can help to close? Are there legal, procedural, or financial obstacles the network can smooth out?

THINKING LONG-TERM: How will greater coordination help your network develop and achieve long-term outcomes for your network,

and be more effective operating strategic initiatives?

LOOKING OUTSIDE: How will you coordinate your network's activities with larger, national or international efforts? Will you seek partnerships that bring specific resources or talents to your region? Will you seek to join national or international networks that share your local goals?

LEAD: Who in your network can take the lead in coordinating network members?

PROGRAM COOPERATION

Connect peer organizations offering complementary programming to help initiate collaboration and exchange among network member organizations, creating opportunities for travelling programs to deploy activities in established learning spaces like libraries and community centers as a means of enhancing the reach and effectiveness of learning programs while also developing staff capacity and responsiveness to target audiences.

▸ **Survey program providers:** Gather information from network members to learn about current programmatic offerings and create an inventory of programs that may be suitable for deployment in sites throughout your network.

▸ **Survey host sites:** Inquire with schools and youth-serving organizations to learn about their interest in hosting outside programming, understand their needs, and determine ways to supplement their capacities through matches with program providers.

▸ **Incentivize Cooperation:** Use convening and catalyzing strategies to jumpstart cooperation among network members and remove any obstacles that might prevent cooperation to naturally arise.

▸ **Package programming:** Work with program providers to prepare their activities for off-site deployment by organizing traveling materials kits, developing flexible lesson plans to be delivered in a variety of settings and timeframes, and leave behind materials for ongoing activities.

▸ **Create a match-making mechanism:** As your network develops a robust inventory of programmatic offerings and youth-serving host sites, develop a platform for network members to connect with each other, such as a shared calendar.

NETWORK RESEARCH

Partner with researchers to establish mechanisms for understanding and evaluating the impact of the network on its members and on the children, youth, and families it serves in order to gather evidence and data to make a stronger case for support.

▸ **Define the question:** Determine the specific question you are seeking to answer about your network and its impact on your target audiences.

▸ **Establish metrics:** Choose a measurable factor so that you can quantify the network's impact. Consider using common metrics for measuring learning outcomes and student engagement such as high school graduation rates and dropout rates.

▸ **Find a data partner:** Partner with a research institution or government agency that is already engaged in gathering and analyzing data about students in your region. Work with your partner to establish a baseline measurement.

▸ **Gather evidence:** Task network members with collecting information about the students involved in their programs. Provide network members with a standard data-gathering instrument such as an entry/exit questionnaire, survey, or scorecard.

▸ **Evaluate findings:** Work with your data partner to determine if any correlation or causation exists between your network's activities and the changes you see in the metrics.

▸ **Share the results:** Create opportunities to share the results of the fellow's research with other network members, such as small report-out events or a high-level summary of the work with specific recommendations.

NETWORK STRATEGY

Set an agenda for the network and establish a shared vision, common values, and long term goals by forming advisory groups of key stakeholders, surveying network members, and seating leadership councils representing influential members of the community.

▸ **Define the need for a strategy:** Describe the need for a network strategy and the anticipated benefits of establishing a shared strategy. Create a rationale so that network members understand the need and invest in the strategy development process.

▸ **Choose a model:** Research strategic planning methods and models to develop your familiarity with the process. Give particular attention to models for open innovation and collaborative networks.

▸ **Gather input:** Create a survey tool, interview template, or collaborative workspace where network members can contribute to the development of the strategy.

▸ **Engage the network:** Invite network members to gather together face-to-face or online to reflect on the strategy in development, share their thoughts, and generate ideas for putting the strategy into practice.

▸ **Publish and share:** Once the strategy document is developed to a suitable state, post it permanently in an easily accessible web space and distribute copies to key network members. Consider writing a blog post that can act as an executive summary or guide to understanding the strategy.

▸ **Stay Accountable:** Your network strategy will be a living document. Create a process for checking in on a regular basis to evaluate your network's progress, revise any aspects of the strategy, and report-out to the network.

NATIONAL TO LOCAL

Reach out to organizations leading change on the national level and seek opportunities to partner with them to implement localized programming that helps connect your community with the global movement to remake learning.

‣ **Identify targets:** Survey the landscape of national education innovation movements, including research initiatives, communities of practice, academic networks, publications, and media properties.

‣ **Identify a local host:** Find network member organizations who can take responsibility for the local adaptation and implementation of national initiatives. Focus on matching the assets and resources network members possess with the local needs of national initiatives.

‣ **Reach out beyond your community:** Invite representatives to visit your community and see how you are remaking learning. Demonstrate your community's readiness to implement local programming based on a national model.

‣ **Distribute national imports locally:** While only a small number of network members may have the capacity to take on a national initiative, be sure to build in mechanisms for sharing knowledge gained with your broader network through events, workshops, or publications.

‣ **Return the favor:** Whenever possible, offer up local innovations to your new national partners that they can use as proof points or models for how their work is being implemented in communities.

‣ **Leverage national connections:** Securing national support immediately expands your circle of colleagues and professional contacts. Consider how these new connections will help build capacity in other areas of your network.

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Plays to Champion

Lift up the best of the network and celebrate the educators, innovators, and young people who contribute to and benefit from network activities.

THINKING QUESTIONS:

GOALS: What is the value of increasing exposure of your network's brand? Are you seeking to engage the public in your network? Are you seeking to raise funds?

AUDIENCES: Who are you seeking to celebrate or attract to the network? Current network members? Young people? Tech companies? Funders? Government leaders? What do you have to offer each of your target audiences?

ENGAGEMENT & IMPRESSION: What do you want the network to look and feel like to your target audiences? What kinds of events, activities, and content support and reinforce this impression?

CONVERSION & CALL TO ACTION: Once you've got your audience's attention, what do you want them to do? Visit a website? Attend an event? Apply for a grant? Make choices differently?

LEAD: Who will take the overall lead in championing your network?

SHOWCASE

Organize interactive exhibits that showcase exemplary network projects and programs at public events like arts fairs, summer fests, holiday events, and other gatherings that attract large numbers of children, youth, and families so that more people can have personal, hands-on experiences with learning innovation.

▸ **Recruit and prepare exhibitors:** Identify a small group of network members who can deliver engaging face-to-face activities for learners. Aim for diversity of participants and activity types. It helps if you pay them a small daily stipend for their time.

▸ **Plan your exhibit:** Determine the amount of space you will be provided at the event, as well as your technical resources like electricity and internet, and sketch out how you will layout the space, keeping in mind how people will flow through it.

▸ **Create a presence:** Create signage, banners, and take-aways that feature your network's brand and display them prominently around the space. Provide all exhibitors with a simple set of talking points.

▸ **Tell the press:** Issue a media advisory (or add yourself to one the event organizers are sending out) that describe your network's presence and highlight the visual appeal for press photographers or local TV news.

▸ **Document your exhibit:** Take photos of your exhibit and share them via social media or on your blog to show how your network is changing the look and feel of learning in your community.

EVENT SPONSORSHIP

Provide financial support and lend the network's name to events, workshops, camps, conferences, and professional development sessions that introduce educators and others to new and innovative teaching and learning practices.

▸ **Define sponsorship goals:** Write down the characteristics of the kinds of projects you seek to support, specifying the size, age, background, and geographic bounds of target audiences, the topic or content area the grants will focus on, and any requirements critical to success.

▸ **Set a budget:** Determine the size and quantity of sponsorships you can afford offer. For comparison, Remake Learning event sponsorships are available up to $5,000 and the average size is $1,000.

▸ **Survey local events calendars:** Develop a comprehensive list of events offered by network members in your community, as well as events where you believe a network presence would be valuable.

▸ **Seek sponsorship requests:** Decide whether you will offer an ongoing open call for sponsorship requests, or make sponsorships by invitation only. Either way, request sponsorship options from applicants that outline commitment levels and corresponding sponsor recognition benefits.

▸ **Promote sponsored events:** Use your social media and, when appropriate, press outreach strategies to help drive attendance to sponsored events. When possible, send network representatives to speak and distribute network promotional materials.

AWARDS

Recognize excellence among network members and celebrate the work of young people involved in network programs by hosting new or partnering with established events where awards and prizes can be given to elevate the best of the network and inspire others to achieve similar results.

▸ **Seek out opportunities:** Survey local and national contests and awards opportunities to nominate network members for.

▸ **Partner with an endorser:** If you're launching your own awards ceremony, partner with an established and well-respected organization in your network to add value to the awards opportunity.

▸ **Define the offering:** Make sure that your award is different and unique among existing local offerings. Consider adapting a national model to the local community.

▸ **Issue a call:** Publicize the opportunity through your network communications channels and through network partners who communicate directly with eligible nominees. Provide clear instructions for how award seekers can apply or be nominated.

▸ **Make decisions:** Choose to use a jury or public voting approach. Whichever approach you decide, make sure nominees and the public understand the award criteria.

▸ **Host a ceremony:** Partner with an existing awards event or host your own to honor nominees and winners publicly. Be sure to document the event and share the good news via the network blog and social media outlets.

▸ **Tell the press:** Issue a media advisory (or add yourself to one the event organizers are sending out) that promotes the new awards and highlights the winners.

ADVERTISING & MARKETING

Establish a presence for the network in the local media market by purchasing advertising placements and underwriting messages such as PSAs on local television and radio, print and digital advertising in local publications, and distributing marketing materials through street teams.

‣ **Define advertising goals:** Describe the audience you are targeting, the key message you want to deliver to them, and the action that you want them to take. Set a benchmark for the percentage of 'conversions' your campaign will make.

‣ **Set a budget:** Small amounts, even $100, can be effective in boosting social media engagement, while print and digital advertising can range into the thousands and outdoor display campaigns into the tens of thousands.

‣ **Evaluate similar efforts:** Examine how other organizations and campaigns have advertised in your local media market. Borrow ideas from the most effective advertisers.

‣ **Design your campaign:** Build on your network's brand (or use the campaign to establish one) and create clear, engaging content that reinforces the core messages of your work both visually and verbally. Be sure to include a clear call to action and a way to measure conversions.

‣ **Leverage your campaign:** Whether you're advertising campaign runs in print, online, or through face-to-face distribution, add value by supporting the campaign through social media, event tie-ins, and blogging.

NETWORK GATHERINGS

Gather network members at an annual event to celebrate their individual and collective achievements, reflect on all that has been accomplished, celebrate student achievement, and energize network members for the work that is still ahead.

‣ **Set your goals for the event:** Identify your audience and determine how you will recognize and celebrate the network. This will guide the rest of your decisions. Keep the goals few and simple.

‣ **Pick a date, time, and location:** Get the basics of an invitation together by choosing a date 12-16 weeks in the future and securing a meeting space.

‣ **Plan the program & Build a budget:** Decide the format of your event, sketch out a floor plan, draft a basic agenda, and create a Run-of-Show. Tabulate your anticipated expenses for the venue rental, food and refreshments, event logistics, and any speaker or programming costs.

‣ **Save the date:** Once you've confirmed the basics, send a save the date no more than 10 weeks in advance. Send a real invitation with registration details at least 6 weeks prior to the event.

‣ **Recruit participants:** If your event will include activities or exhibits led by network members, reach out and invite them to participate. Find out what they will need and create a programming manifest that gathers all the technical, space, and media needs of your exhibitors.

‣ **Document & share:** Create a record of the event that you can share with network members who aren't able to make it. If the event is the first of its kind, consider inviting the press as well.

More Networks & Related Links

The Remake Learning Network isn't alone in its efforts to build new models for learning innovation. Check out some of these other national and global networks to find more resources and potential partners for building a learning innovation network in your community.

Alliance for Excellent Education: Promoting high school transformation to make it possible for every child to graduate prepared for success
➜ **all4ed.org**

Aspen Education & Society Program: Advocacy research to inspire, inform, and influence education leaders across policy and practice, with an emphasis on equity
➜ **aspeninstitute.org/policy-work/education-society**

Badge Alliance: A network of organizations and individuals working together to build and support an open digital badging ecosystem
➜ **badgealliance.org**

Carnegie Foundation for the Advancement of Teaching: Studying how teachers learn to improve and address problems of practice through networked communities
➜ **carnegiefoundation.org**

Center for Youth Program Quality: Empowers education and human service leaders to adapt, implement, and scale best-in-class quality improvement systems to advance youth development
➜ **cypq.org**

Code.org: A national campaign to ensure that every student in every school has the opportunity to learn computer science
➜ **code.org**

Connected Learning Alliance: A network of organizations, projects & individuals helping spread & scale a learning vision designed for our times
➜ **clalliance.org**

Connected Mentor Framework: Hive Chicago initiative to create a common understanding and language around mentoring in out-of-school-time, and strengthen community networks of out-of-school mentors
➜ **connectedmentor.com**

Ed Tech Developer's Guide: A guide from the Office of Educational Technology for developers, startups, and entrepreneurs working on digital tools and apps for learning
➜ **tech.ed.gov/developers-guide**

Education Innovation Clusters: U.S. Department of Education effort to identify forward-thinking regions where commercial, academic, and education partners come together to accelerate innovation
➜ **tech.ed.gov/innovationclusters**

Educator Innovator: A growing community of educators and organizations who value open learning and whose interests and spirits exemplify connected learning, powered by the National Writing Project
➜ **educatorinnovator.org**

Education Reimagined: An initiative dedicated to the realization of learner-centered education in America
➜ **education-reimagined.org**

Future Ready Schools: Maximizing digital learning opportunities and helping school districts move quickly toward preparing students for success in college, a career, and citizenship
➜ **futurereadyschools.org**

Hive Learning Networks: A growing constellation of communities around the globe that are championing digital skills and web literacy through connected learning, stewarded by the Mozilla Foundation
➜ **hivelearningnetworks.org**

Kaboom Playful City USA: A national recognition program that honors communities for taking bold steps that make it easy for all kids to get the balanced and active play they need to thrive
➜ **kaboom.org/playability/playful_city_usa**

The League of Innovative Schools: A national coalition of school districts who are improving student outcomes through learning technology and education research, led by Digital Promise
➜ **digitalpromise.org/league**

LEAP Collaboratory:
A physical space designed to bring together innovators of all kinds to learn about and scale the use of personalized learning practices and tools
➜ **leapinnovations.org/leap-collaboratory**

LRNG: Bringing together schools, businesses, cities, community institutions, and foundations to create networks of learning that are open and inviting to all young people
➜ **lrng.org**

Make Schools: A community and resource hub for colleges and universities investigating the value and impact of maker culture on campus and in surrounding communities
➜ **make.xsead.cmu.edu**

Maker Cities: A massively multiplayer game of civic hacking that empowers people to imagine and make the future of their city
➜ **makercities.net**

Maker Ed: Empowering educators and communities–particularly, those in underserved areas–as they facilitate meaningful making and learning experiences with youth
➜ **makered.org**

Mozilla Webmaker:
An open-source initiative to help people across the world become informed creators of a free and open web
➜ **webmaker.org**

Next Generation Learning Challenges: Offering grants, resources, and models for accelerating educational innovation to improve college readiness and completion in the US
➜ **nextgenlearning.org**

Partnership for 21st-century Learning:
Collaboration and framework set by education, business, community, and government leaders so all learners can gain thrive in a world where learning never stops
➜ **p21.org**

Project Zero: An educational research group at Harvard Graduate School of Education exploring intelligence, understanding, thinking, and creativity
➜ **pz.harvard.edu**

ReDesign Challenge: An online workshop in innovation where teachers, coaches, and administrators tackle K-12's toughest challenges
➜ **redesignchallenge.org**

STEM Ecosystems: Providing the architecture for cross-sector learning, offering all young people access to STEM-rich learning environments throughout preK-16 education
stemecosystems.org

Strive Together: A national movement to improve education for every child, from cradle to career
➜ **strivetogether.org**

Teacher Powered Schools:
Empowering teacher teams to take charge in their schools or to design and run new schools
➜ **teacherpowered.org**

Third Teacher+:
A multidisciplinary team of global thought leaders and individuals exploring design as a powerful driver of organizational learning and change
➜ **thethirdteacherplus.com**

YouMedia Network:
A national network expanding the reach and impact of the Learning Lab model, transforming libraries and informal learning spaces for new kinds of thinking
➜ **youmedia.org**

For more resources, including free digital learning tools, funding opportunities, open education resources, research reports, and more, visit **remakelearning.org/resources**.

Advocacy Kit

You'll need to recruit friends and allies to generate momentum for an all-out collaborative effort to remake learning in your community.

To help you get started, we've developed a simple advocacy kit you can use to make the case for learning innovation in your community by convincing your peers, colleagues, and leaders to join in a collaborative effort to remake learning. You can take a leading role in this important work by spurring your community to action.

The Remake Learning Advocacy Kit includes the following:

Slide Decks: Presentation slides that outline the current challenges and opportunities in teaching and learning, examples of how the Remake Learning Network is transforming education in Pittsburgh, and suggestions for how other communities can build on the Pittsburgh Model. Several slides include space for you to make your own notes and localize the content to your specific community needs and opportunities.

Media Assets: A collection of photos, videos, and other materials you can show at presentations, or share with your colleagues. As visual evidence, these media assets help convey the impact of innovative learning in the lives of students and educators. Short videos feature testimonials from Pittsburgh, as well as footage of each Case Study, showcasing learning innovation in schools, museums, libraries, communities, and elsewhere.

Talking Points: A presentation script elaborates on each slide to guide your remarks and give your audience a better understanding of how an approach like Remake Learning would be meaningful in your community. Talking points are saved in the presentation notes field for quick reference and also provided in editable documents. Both sets of talking points also include helpful tips called out by brackets.

Outreach Kit: A collection of materials to help you raise awareness of your efforts with local press and the general public. Press release and media advisory templates give you a starting point for announcing new efforts to remake learning in your community. Sample language and imagery for posting to popular social media outlets help you jumpstart the conversation about the need for more innovative learning in your community.

Custom Advocacy Kits are available for reaching specific target audiences, including:

Schools

Community Organizations

Civic Leaders

Museums and Libraries

Higher Education

Parents

Private Sector

Visit remakelearning.org/advocacy to access the advocacy kit right for you.

Gameplan Web App

USE THE GAMEPLAN WEB APP TO CREATE AND SHARE YOUR OWN CUSTOMIZED VERSION OF THE REMAKE LEARNING PLAYBOOK REMIXED FOR YOUR COMMUNITY.

If you think of the Playbook as the *textbook* from high school you weren't supposed to write in, then the Gameplan is your personal *workbook* full of notes, revisions, and edits.

Visit **gameplan.remakelearning.org** to get started making your own gameplan.

Introduce Yourself

Answer a few questions about yourself and your community to help prepare the system to suggest partners and recommend plays that are most suitable for you and your community.

Meet Your Coach

Hear from a member of the Remake Learning Network with a similar background to yours and learn how they participate in the network and benefit from its services.

Identify Partners

List organizations in your community who represent the sectors necessary to build a network: Learning Environments, Innovation Research & Development, Learning Scholarship & Advocacy, Commercial & Entrepreneurial Engagement, Strategic Stewardship.
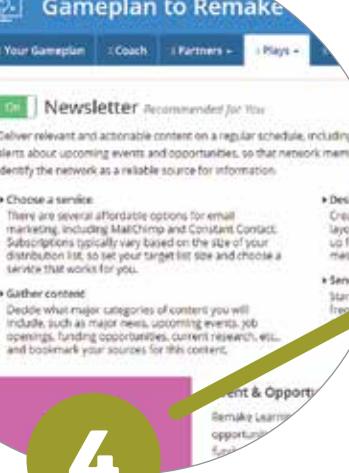
4

Select Plays

Learn how you can put network building strategies into action by implementing plays to Convene, Catalyze, Communicate, Coordinate, and Champion your network.

Each play includes include step-by-step instructions and advice, as well as links to relevant tools and resources, and examples of plays that have been implemented in Pittsburgh.

5

Set Goals

Establish measurable objectives that your network will work to achieve. Reflect on the partners you've identified and the strategies and plays you've selected, then commit to a reasonable set of short, medium, and long-term goals that your network will achieve together.
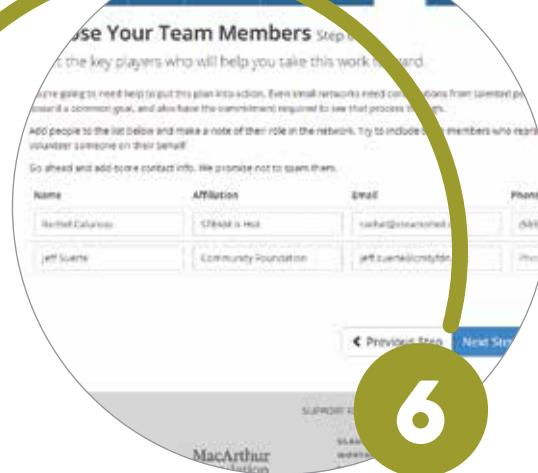
6

Choose Team Members

Assemble a team of collaborators who can help you move this work forward. These are the key players who will help us take this work forward. Even small networks need contributions from talented people who understand the value of working together across sectors toward a common goal.
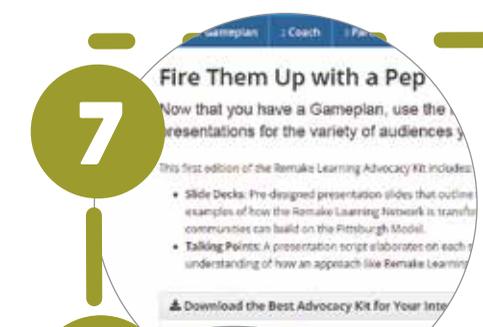
7

Pep Talk

Now that you have a Gameplan, use the Remake Learning Advocacy Kit to create presentations for the variety of audiences your team will need to recruit into the effort.

8

View & Share

Publish your Gameplan and share it with your team to get started remaking learning. Use the Gameplan you just created as a guiding document for the development of your local learning innovation network.

The Gameplan output can be a ready reference when you're in the midst of implementing and as a foundational document to return to and check you're progress.

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Voices of the Network & Case Study Subjects

Contributors

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the Sprout fund

The Sprout Fund is Pittsburgh's leading agency supporting innovative ideas, catalyzing community change, and making the region a better place to live, work, play, and raise a family. Sprout provides critical support for projects and programs in the early stages of development as well as acts as steward of the Remake Learning and Hive Learning networks in Pittsburgh. Learn more about Sprout and our supported projects at **sproutfund.org**.

remake learning

Representing more than 200 organizations, Remake Learning is a professional network of schools, museums, libraries, afterschool programs, community centers, higher education institutions, education technology companies, philanthropies, and civic leaders working together to inspire a generation of lifelong learners in Pittsburgh, West Virginia, and beyond. Learn more about the network and the impact of our work at **remakelearning.org**.

Take Action

READY TO PUT
LEARNING INNOVATION INTO ACTION
IN YOUR COMMUNITY?

Visit
playbook.remakelearning.org

Build your own Game Plan
for Learning Innovation using the
strategies that have helped Pittsburgh
become a national leader

Download the **Remake Learning advocacy
kit** to make the case for learning innovation
in your community

See **full case studies** of learning remade
in schools, museums, libraries,
community centers from the
Pittsburgh region

Keep us posted on your progress @remakelearning
Questions? Contact us at **playbook@sproutfund.org or +1 (412) 325-0646**