Spotlight on Pittsburgh

Report

SEPTEMBER 2019

HUNDRED.ORG

hundrED

IN PARTNERSHIP WITH

THE GRABLE FOUNDATION
dedicated to improving the lives of children

remake learning

Contents

Partners

THE GRABLE FOUNDATION

The Grable Foundation believes in possibilities: that a child will experience something new that will change his or her life; that a teacher will have the resources to nurture students; that kids will play and learn and grow on their own time, in their own way, guided by a community of people and places keen to make these possibilities a reality. The Foundation awards support to organizations that improve the lives of children and youth across the Pittsburgh region from early childhood through the formative years, inside the classroom and out.

www.grable.org

REMAKE LEARNING

Remake Learning is a network in southwestern Pennsylvania and northern West Virginia that ignites engaging, relevant, and equitable learning practices in support of young people navigating rapid social and technological change. An open group of interconnected, creative, and innovative people and organizations in the greater Pittsburgh region, Remake Learning is a collective effort to transform teaching and learning to better serve today's young people.

www.remakelearning.org
@remakelearning

Foreword from local organizer

We're clearly biased, but Pittsburgh may just be the best place on Earth to be (and to raise) a kid. The sense of community here makes our region feel like one big neighborhood. The opportunities found in our cultural resources and natural surroundings make exploration, discovery, and learning part of everyday life. Joy and play pervade our public spaces. The shared commitment that we make to our region's kids is tangible.

The HundrED Spotlight on Pittsburgh celebrates this commitment through the stories of 12 of our region's most inspiring innovations.

Pittsburgh is home to these innovations—and hundreds more like them—due in large part to the efforts of Remake Learning. For more than a decade, Remake Learning has cultivated a network of more than 500 organizations working together to ignite engaging, relevant, and equitable learning. Working tirelessly in schools, museums, libraries, and communities, educators involved in the Remake Learning network are doing everything they can to help children and youth navigate rapid social and technological change.

The work of today's innovators is made possible by countless people who dedicate themselves to improving conditions for youth, families, and educators.

Among them, two names stand out: Fred Rogers and Bill Strickland. Fred Rogers used the innovative technology of his day, television, to make a positive impact on millions of children through his landmark program, "Mister Rogers' Neighborhood." Bill Strickland turned his own life-changing experience with a mentor into an institution called the Manchester Bidwell Corporation, which has brought world-class arts and sciences programming to thousands of Pittsburgh's kids.

Both of these visionaries launched their life's work in Pittsburgh in 1968. Both of them embraced future possibilities while holding tight to what is timelessly and essentially human about cultivating dignity, confidence, and belonging. Both of them made an indelible mark on our community and the world. It seems only fitting, and is certainly humbling to me, that both of them are part of the HundrED Spotlight on Pittsburgh.

On behalf of The Grable Foundation, Remake Learning, and all of the educators, children, youth, and families who call our region home, we're tremendously proud that Pittsburgh is home to the first HundrED Spotlight in North America. As you explore this Spotlight report and the media available via HundrED.org, we hope you find yourself inspired and reminded of all that we can do together to help our children flourish.

Welcome to Kidsburgh.

Gregg Behr
Executive Director, The Grable Foundation
Founder, Remake Learning

ABOUT THE EDUCATION SYSTEM IN PITTSBURGH, USA

For most students, school begins around the age of 5 when they start attending kindergarten and ends with their graduation from 12th grade around the age of 18. Most students attend public school districts, which can range from unified urban districts like Pittsburgh Public Schools that enroll tens of thousands of students to small districts that enroll just a few hundred. In addition to public schools, there are charter schools that are publicly funded but privately operated, independent private and parochial schools, and cyber schools.

School learning is supplemented by informal education happening in museums, libraries, community-based programs, and after-school programs. Most early-childhood learning takes place in these out-of-school settings, including home-based and center-based early-learning providers.

Pittsburgh is home to 29 colleges and universities, including several schools of education preparing tomorrow's teachers, as well as research universities making breakthroughs in technology and the science of learning.

Foreword from HundrED

HundrED.org is a Finnish not-for-profit organization, which seeks and shares inspiring innovations in K–12 education. Our goal is to help education through pedagogically sound innovations. Annually, we select 100 education innovations for our Global Collection, as well as lead research Spotlights with partner organizations, which are based either on a theme (e.g. sustainability) or within a geographic region.

Education always needs to be contextualized—every location has its own needs and demands that can be understood through both research and practice perspectives. However, this relationship between research and practice is often not as strong as it could be. Many educators may find the research-based evidence and data too theoretical to be applied in their own classroom. This is one of the main reasons why we started HundrED Spotlights—to identify inspiring education innovations and make them available through "easy-to-implement" guides. Our aim is to make the best education practices available for all educators.

In 2018, we were delighted to begin our collaboration with The Grable Foundation and Remake Learning in order to become more familiar with the unique educational challenges and many success stories within the Pittsburgh region. The North Star for this Spotlight was to find solutions that are supporting equity in the education system. In educational research, it is often stated that increasing equity for all

In this Spotlight,
we broke the mold
and identified a
few more than ten
with a dozen being
selected.

students has had a long-lasting positive impact, not only on individual learning, but also on a healthy surrounding community. The aim of the Spotlight process was to identify innovations that could do this effectively within the Pittsburgh region.

During the submission period of this Spotlight, we were impressed to receive over 80 innovation submissions. These innovations gave us a good understanding of the innovative solutions happening in the Pittsburgh region. Many

innovations were able to effectively demonstrate a positive impact on student learning and the wider community around them. In this Spotlight, we broke the mold and identified a few more than ten with a dozen being selected. I want to congratulate all innovators who submitted their work for this Spotlight. Education should be improved continuously, and all of you are doing important work to help every child flourish in life.

Lasse Leponiemi
Executive Director and Co-Founder, HundrED

HundrED Manifesto

The purpose of education is to help every child flourish, no matter what happens in life. In a fast-changing world, focusing on traditional academic skills will remain important, but that is not enough. To thrive as global citizens, children must be equipped with a **breadth of skills**.

While we are advocates of child-centric approaches and **personalized, passion-based learning**, the relationship between an inspired teacher and a motivated student will remain essential. **Assessment** has to be aligned with the core purpose of helping kids flourish and all of this should be reflected in the **learning environment** of the future.

To make this happen, we need **visionary leadership** at every level of our education system and ambitious education innovations; innovative, impactful, and scalable approaches that are effective also in low-resourced environments.

The world of education is full of hardworking specialists who are making this happen every day. At HundrED we work to give them the recognition and visibility they deserve.

Our goal is to help improve education and inspire a grassroots movement by encouraging pedagogically sound, ambitious innovations to spread across the world.

FOR INNOVATORS

Do you have an innovation the world needs to know about? It's free to share your work on HundrED.org and we are happy to promote your educational innovation to our global community.

FOR IMPLEMENTERS

Looking for innovations to suit your needs? Discover inspiring, pedagogically sound innovations from around the world. If you need help, don't hesitate to contact us.

This is our theory of change

Direction

First, we need to decide the key values we believe in and how we can help every child flourish.

Innovations

Then we have to identify impactful and pedagogically sound innovations that we believe can make change happen at scale.

Implementation

And finally, these innovations have to be implemented effectively.

What we do in practice

HundrED Global is a collection of 100 inspiring innovations in K–12 education that are researched, interviewed, and recognized by our research team as innovative, impactful, and scalable.

HundrED Spotlights create partnerships between HundrED and local partner organizations to focus on a location or theme to research, understand, and share ten impactful and scalable innovations.

HundrED Open is our open resource platform where anyone can share their innovative work in education for free and enter to be considered for the annual HundrED Global Collection.

HundrED's Community comprises our innovators, educators, ambassadors, youth and soon, funders. They support our work in discovering inspiring K–12 education innovations and help us in spreading our annual innovation collections with local education-innovation communities.

HundrED's Media team creates news articles and community blogs, and maintains HundrED's digital platforms to help our global audience discover innovations from around the world easily.

HundrED's Research team discovers and analyzes leading innovations in K–12 education globally to select 100 that are innovative, impactful, and scalable. We also conduct original research to understand the enablers of and barriers to the spread of effective educational innovations. Moreover, we work with many partners to highlight leading educational innovations based on a theme or region for our spotlights.

To celebrate the release of our Global Collection we annually organize the **HundrED Innovation Summit** for the world's most inspiring education innovators, educators, youth and other engaged stakeholders, in Helsinki (Finland).

The Spotlights follow a six stage implementation process:

1.

Launch

The Spotlight is announced at a launch event and will take place over the course of six to ten months.

2.

Submission & Research

Anyone can submit their innovation to be considered. An elected Spotlight Advisory Board will help make the final selection of ten innovations together with HundrED and the local partner helping to organize the Spotlight.

3.

Innovation Packages

At the end of the Spotlight, the ten innovations will be packaged and shared on the HundrED website, so that anyone, anywhere in the world, can learn about them, implement them, and contact the innovator.

4.

Videos

All the innovations will be accompanied by mini documentaries (1–3 minutes) to show them in practice and their positive impact for students and educators.

5.

Report

Each Spotlight will be accompanied by a report, detailing the area the Spotlight is focused on and the innovations that were trialed. All research reports will be available on our website.

6.

Summit

The results of the Spotlight and the innovations involved will be celebrated at a Summit event. All innovations will be promoted locally and globally after the event.

Welcome to Pittsburgh

HundrED Spotlights are in-depth explorations of educational innovation in a specific location or around a specific theme. Spotlights explore each location or theme thoroughly in order to provide deep insight into the Spotlight area and share a collection of the most inspiring innovations emerging in that area with the rest of the world.

For its first Spotlight in the United States, HundrED selected Pittsburgh. With a population of about 300,000 people, the City of Pittsburgh is the heart of a region that counts more than 3 million total residents living in hundreds of urban, rural, and suburban communities spanning 4 states.

Why Pittsburgh? Why not New York, Chicago, San Francisco, or a hundred other places? Well, for more than a decade, educators in the Pittsburgh region have been taking risks, reaching higher, and pushing the limits of learning. Rallying under the banner of Remake Learning, Pittsburgh is home to a deeply connected and highly coordinated education innovation ecosystem. The result? A high concentration of innovations that hold the potential to help children flourish.

Areas of strength

EARLY LEARNING

Since at least the time of Fred Rogers, Pittsburgh has maintained a deep commitment to early-childhood learning. This commitment is evident in the work of early-learning advocacy organizations like Trying Together, who worked with technologists at Carnegie Mellon University to develop the Message From Me tool that helps young children communicate with families about their daily learning experiences.

INTERDISCIPLINARY LEARNING

Educators in the Pittsburgh region have embraced interdisciplinary learning. By integrating the arts with science, technology, engineering, and math, they turn STEM into STEAM, as seen in Auberle's approach to STEAM Education for At-Risk Residential Youth. Schools frequently use media-making experiences to engage students in interdisciplinary learning, like at Cornell High School where the Equitable Student Broadcasting program gives students a voice through video production.

OUT-OF-SCHOOL LEARNING

Much of the learning innovation in Pittsburgh is happening in out-of-school learning spaces. Museums like the Heinz History Center create immersive experiences like Be the Change to cultivate a change-agent mindset in young people. Community-based organizations like the Alliance for Refugee Youth Support and Education ensure that even the most vulnerable youth are engaged, supported, and celebrated.

PROFESSIONAL LEARNING

Teachers are learners too, and they're constantly honing their craft through professional learning experiences. That understanding is at the heart of some of the most impactful work happening in the Pittsburgh region. For example, Carnegie Science Center's STEM Excellence Pathway helps teachers adopt best practices in STEM education.

HIGHER EDUCATION CONNECTIONS

Pittsburgh's colleges and universities regularly partner with schools and museums to do research about learning. Many of Pittsburgh's most promising education technologies have spun out of university labs. Carnegie Mellon University has a notable presence through initiatives like Girls of Steel, an all-female robotics team that competes nationally, and Project Prism, created by the Entertainment Technology Center to help neurotypical learners empathize with learners on the autism spectrum.

COMPUTER SCIENCE & DIGITAL LITERACY

Educators in the Pittsburgh region are integrating computer science into classrooms starting as early as preschool. Some schools have created a full K–12 computer science curriculum, such as the K–12 Computational Thinking Pathway at South Fayette School District and the Computer Science Immersion program at Canon-McMillan School District. Other educators (and students) choose self-paced programs like the CS Academy from Carnegie Mellon University.

HISTORICAL LEGACIES

Located in the southwestern corner of the state of Pennsylvania, Pittsburgh and the surrounding communities in the region played an important role in the American industrial boom of the late 19th and early 20th centuries. As the heart of America's steel industry, Pittsburgh gained the nickname "Steel City."

The huge demand for labor during this period attracted hundreds of thousands of people to Pittsburgh, including African Americans migrating out of the southern states and immigrants from Southern and Eastern Europe. As they settled in the region's cities and towns, they brought with them the cultural heritage that made Pittsburgh a patchwork quilt of ethnic identity, a trend that continues today as the region welcomes an influx of new residents from Central and South America, East Africa, the Middle East, and South Asia.

The growth of industry led to the endowment of many local philanthropic foundations that sustain the quality of life in the Pittsburgh region. Over the years, millions of philanthropic dollars have been directed to universities, schools, museums, nonprofits, and community organizations to pilot new ideas and take the ones that are working to scale. This long-term commitment nurtures a growing community of education innovators.

Alongside this positive aspect of past industrial might is the harsh reality of postindustrial dislocation. Like many other communities in America and the global north, Pittsburgh's economic engine saw dramatic disruptions in the late 20th century. The shrinking base of employment that resulted led to demographic changes and the need to reignite the region's latent spirit of innovation and ingenuity.

EMERGING FUTURES

For the past four decades, Pittsburgh has been working hard to reinvent itself as a city powered by education, healthcare, and technology. Today, commuters in Pittsburgh share the road with autonomous vehicles. Robotics companies partner with hospitals to advance the frontiers of medicine. And advanced manufacturing is using technology to bring the region's industrial heritage into the future.

Among the main drivers of Pittsburgh's emerging innovation economy are the colleges, universities, and other research and development powerhouses. According to a 2017 report by the Brookings Institution, "the Pittsburgh region's per capita university research and development spending was two and a half times the national average." This concentration of brainpower, combined with the spirit of ingenuity that is still very much alive in Pittsburgh, holds the promise of future opportunities in the region.

Pittsburgh's future depends on preparing all of the region's young people with the knowledge, skills, and dispositions they need to thrive in this brave new world. This means ensuring that they not only master literacy and numeracy, but that they develop capacities for creativity and collaboration, communication and critical thinking. The good news is that educators are making this vision a reality for students in classrooms, museums, libraries, and community centers across the region. The bad news is that these learning opportunities are unevenly distributed. Lasting social inequity and racial injustice create barriers that threaten to hold many children back from realizing their full potential.
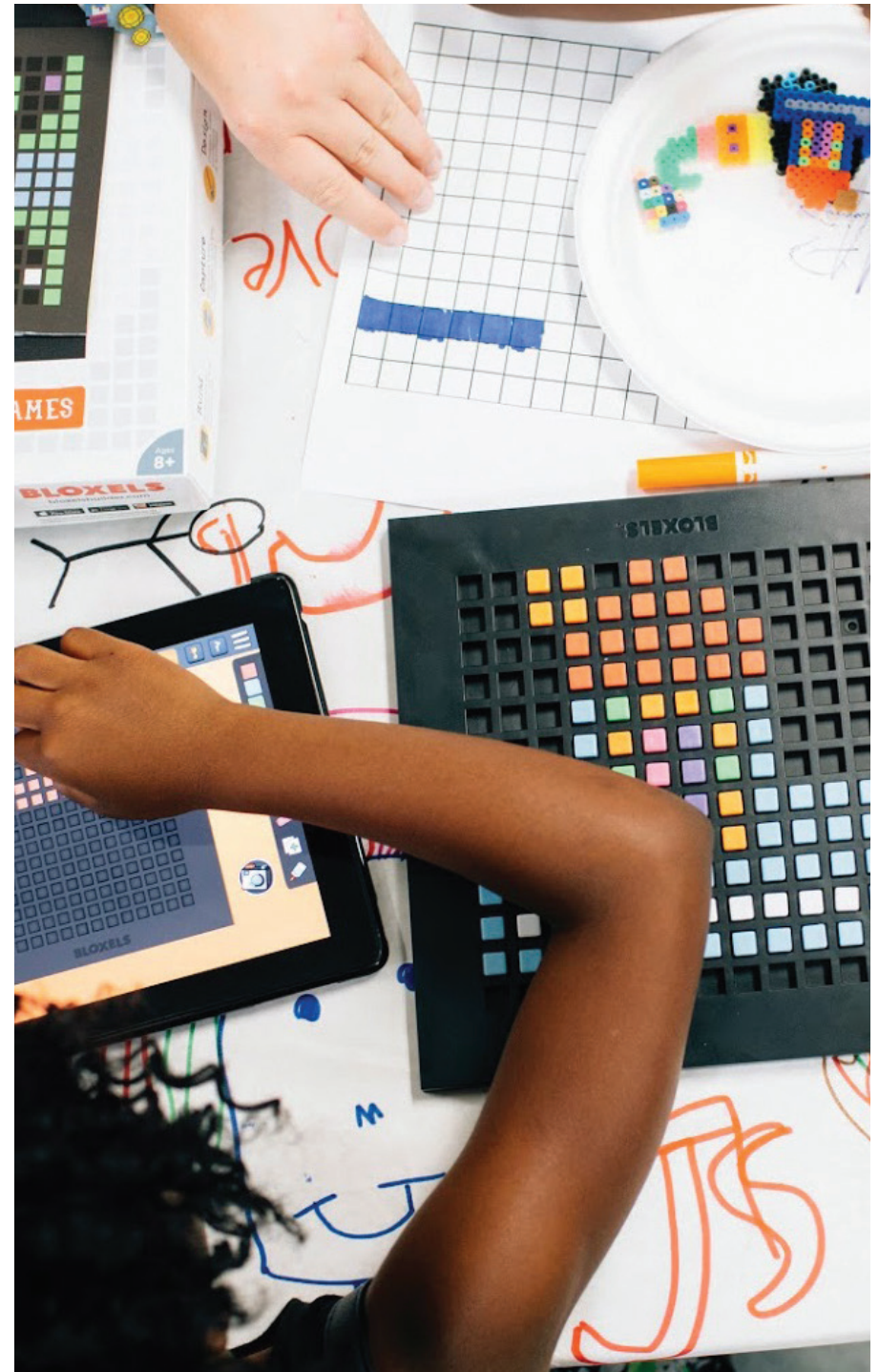
REMAKE LEARNING

These factors all come together in Remake Learning, a professional network of educators and innovators working together to shape the future of teaching and learning in the Pittsburgh region.

Representing more than 500 organizations, including early-learning centers, schools, museums, libraries, after-school programs, community nonprofits, colleges, universities, ed-tech startups, major employers, foundations, and civic leaders, Remake Learning ignites engaging, relevant, and equitable learning practices in support of young people navigating rapid social and technological change.

The power of this network is the power of connections. Ed-tech startups partner with after-school programs to ensure that the tools they develop are academically rigorous and relevant to children's needs. Regional employers and schools connect to ensure that students are prepared for their futures. University researchers work with libraries to explore how children learn and grow. Nonprofits and foundations join forces to help increase families' access to resources.

These connections make Pittsburgh a special place for education innovation. The HundrED Spotlight on Pittsburgh is an opportunity to elevate what's happening in the region.

How the HundrED Spotlight on Pittsburgh unfolded

The HundrED Spotlight on Pittsburgh launched in December 2018 at the Remake Learning Network Assembly, an annual gathering of Pittsburgh's leading education innovators.

Throughout January and February 2019, the HundrED Spotlight team conducted extensive outreach throughout the Pittsburgh region, including 6 workshops providing hands-on support to more than 50 applicants, 4 community information sessions, and a live webinar providing virtual support to more than 20 applicants.

By the deadline of March 15, 2019, 82 innovations had been submitted for consideration. HundrED's Global Research team carefully reviewed each innovation and identified a shortlist of 34 innovations that met HundrED's research criteria.

An 18-member Pittsburgh Advisory Committee made up of educators, researchers, students, and community stakeholders reviewed the shortlisted innovations using HundrED's scoring platform to rate submissions based on their Innovativeness, Impact, and Scalability.

In May 2019, the HundrED Spotlight on Pittsburgh collection was announced with 12 innovations selected for the Spotlight. The community's response to this opportunity was so robust, and HundrED found such depth of innovation in the Pittsburgh region, that the HundrED Spotlight on Pittsburgh includes 12 innovations instead of the usual 10.

TABLE 1: HUNDRED'S SCALING MEASURE

	1	2	3	4	5
INNOVATIVENESS	No difference from the status quo	Slight difference from the status quo	Moderate difference from the status quo	Significant difference from the status quo	Vast difference from the status quo
IMPACT	No improvement	Slight positive improvement from status quo	Moderate positive improvement from the status quo	Significant positive improvement from the status quo	Vast positive improvement from the status quo
SCALABILITY	Not implemented with real users yet	Implemented with the innovator only	Mild spread of innovation independent of the innovator to a narrow range of contexts	Moderate spread of innovation independent of the innovator to a somewhat diverse range of contexts	Significant spread of innovation independent of the innovator to a diverse range of contexts

Selected innovations

FABRICATING CHANGE IN MENTAL WELLNESS
GRINDSTONE
Addressing social and emotional needs through project-based learning and digital fabrication.

THE FINCH ROBOT
PITTSBURGH
Expanding access to computer science through tangible coding experiences grounded in research about student engagement.

GLOBAL MINDS INITIATIVE
PITTSBURGH
Promoting cross-cultural understanding and empathy through youth-led extracurricular activities.

HILLMAN ACADEMY
PITTSBURGH
Authentic and immersive research experiences for high school students with world-class scientists as mentors.

JAM
OHIO TOWNSHIP
Maker-learning projects, led by girls, that catalyze kindness and raise money for charitable causes.

THE LABS @ CLP SUMMER SKILLS INTENSIVES
PITTSBURGH
Giving teens access to technology and mentors to pursue their creative passions at their local library.

MAKESHOP
PITTSBURGH
Uncovering the principles of practice that make making work at the Children's Museum.

MANCHESTER CRAFTSMEN'S GUILD
PITTSBURGH
Using after-school arts education and mentorship to increase high school graduation rates.

SIMPLE INTERACTIONS
LATROBE
Noticing and affirming the essential building blocks of effective relationships between children and adults.

SUMMER DREAMERS ACADEMY
PITTSBURGH
Combining the academic benefit of summer school with the fun of summer camp to reduce summer learning loss.
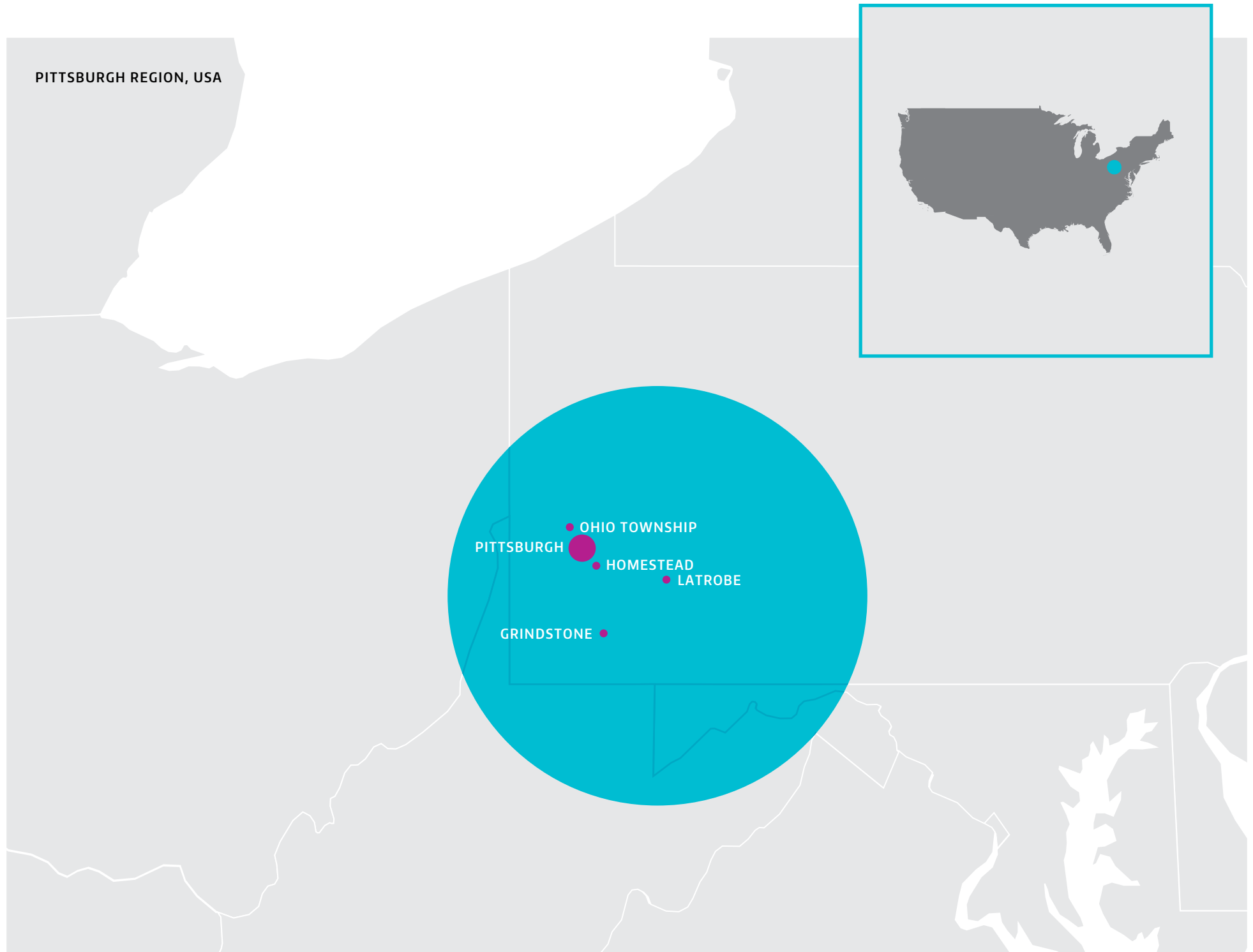
TRANSFORMED
HOMESTEAD
Reimagining professional development to help educators collaborate, create, and innovate in the classroom.

YOUTH EXPRESS
PITTSBURGH
Live and on-demand broadcast of original writing, music, roundtable discussions, and journalism from area teens.

PITTSBURGH REGION, USA

OHIO TOWNSHIP

PITTSBURGH

HOMESTEAD

LATROBE

GRINDSTONE

Addressing social and emotional needs through project-based learning and digital fabrication.

Fabricating Change in Mental Wellness

INTERMEDIATE UNIT 1

Grindstone, Pennsylvania, USA

Students diagnosed with mental health conditions design, build, prototype, and learn at Intermediate Unit 1 Educational Campus at Colonial, an alternative education school. The collaborative environment combined with a project-based curriculum increases participation, improves engagement, and decreases disruption.

The Intermediate Unit 1 Educational Campus at Colonial serves students from across southwestern Pennsylvania with alternative education needs, including attention-deficit/hyperactivity disorder, mood disorders, bipolar disorder, autism, anxiety, obsessive-compulsive disorder, schizophrenia, and post-traumatic stress disorder.

Students with mental health needs often face barriers to learning. IU1 saw an opportunity to overcome those barriers through maker learning: hands-on, tangible activities that take place in an open, collaborative classroom environment.

How can maker learning and digital fabrication help students with mental health diagnoses thrive at school?

In 2015, the Intermediate Unit 1 Educational Campus at Colonial opened a digital fabrication lab (Fab Lab) where students participate in the entire engineering design process. Teachers use tools, materials, and curricula to take students from concept to drawing, model to prototype, and redesign to final product.

Time in the Fab Lab is part of the regular schedule at Colonial. Students work side by side with social workers, therapists, and teachers to use materials and equipment from pipe cleaners and markers to laser cutters and CNC machines.

This project-based digital fabrication curriculum has a real impact on students. Classroom disruptions have decreased, creativity and engagement have increased, collaboration and social skills have improved, and participation in active group therapy has increased. IU1 has shown that maker learning is uniquely effective for students with mental-health needs—it reduces behavioral issues and creates an environment where they can thrive academically.

5–18 AGE GROUP	**2015** ESTABLISHED
200 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

There is a noticeable positive difference in students both academically and behaviorally. I am proud to say that I have yet to have any behavior issues while working in the lab.

– Kevin McKee, Fab Lab Teacher at IU1 Colonial

Inspired to implement this? Here's how:

01   ENGAGE EDUCATORS AND ADMINISTRATORS IN CONVERSATION

Reach out to teachers, therapists, social workers, and administrators to share your ideas and begin to build a plan together. Establish regular meetings with an internal team—their support will be integral to your success.

02   ADAPT THE LEARNING ENVIRONMENT TO BE A COLLABORATIVE SPACE

Create a physical and social environment that welcomes students and creates space for collaboration. This includes physical adaptations, like flexible seating, and social adaptations, like classroom agreements.

03   DEVELOP A CURRICULUM SCOPE AND SEQUENCE

Align your curriculum to the space you've created and students' needs and learning goals. Early projects should help students get familiar with tools. Interdisciplinary projects can relate to concepts being learned in other classes.

04   TRAIN TEACHERS AND STAFF IN NEW PRACTICES

Equip teachers and support staff with the knowledge and skills they need to use the equipment and materials in your new space. Training a group of teachers and staff helps colleagues support each other and share experiences.

05   ESTABLISH A SCHEDULE FOR ACCESSING AND ACTIVATING THE SPACE

A schedule ensures that all students have access to the space during the school day or week, and that teachers can plan and request the materials needed for their lessons.

06   WELCOME AND INTRODUCE STUDENTS

Host an open house in your new space to welcome students, parents, and the community as you kick off a new initiative together. This helps everyone begin to get comfortable with new tools and arrangements for learning.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE FABRICATING CHANGE IN MENTAL WELLNESS INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

> Create an environment that encourages peer collaboration

> Cultivate a sense of ownership in student work

> Connect learning to life skills and career opportunities

IMPACT

> Decreased student disruptions

> Increased creativity and engagement

> Improved collaboration and social skills

> Increased participation in active group therapy

RESOURCES NEEDED

+ Support from administration, staff, school board, therapists, social workers, and teachers

+ Space for students to make and create

+ Maker materials and consumables

+ Digital fabrication equipment and software (optional)

CONNECT WITH THE INNOVATOR

Don Martin
Coal Center, PA USA
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www.iu1.org/fablab

Expanding access to computer science through tangible coding experiences grounded in research about student engagement.

The Finch Robot

BIRDBRAIN TECHNOLOGIES

Pittsburgh, Pennsylvania, USA

This educational technology tool can be programmed in five different coding languages, from Scratch to Java, making it immediately accessible to learners of any age and ability. A free loan program and resources to integrate into core curriculum helps any educator expose students to computer science as part of the regular school day.

Technology's increasing presence in our daily lives makes digital literacy an essential skill for young people. Many believe that computer science will provide an increasing number of high-paying jobs in the decade to come. Regardless of whether students are headed for careers in coding, understanding the technology that underlies their lives helps them access, interpret, and change their world.

Unfortunately, computer science education isn't equally distributed. For many, computer science is considered an extracurricular activity that isn't part of the regular school day. And internet access and technology costs can be a barrier that prevents students from experiencing computer science education.

How can we give each and every student a chance to learn computer science as part of their regular school day?

The Finch Robot is a technology-learning tool borne out of research at Carnegie Mellon University about improving motivation and interest in science, technology, engineering, and math (STEM).

Finches are robots with programmable sensors, motors, and lights that students control with code, so they can see their code in the physical world. The Finch can be programmed in five coding languages, which makes it adaptable to a wide array of learner ages and abilities.

The Finch is easily integrated into core curriculum content, like history and math projects. This means educators can incorporate computer science into the regular school day. And the Finch Loan Program makes classroom sets available to schools and libraries at no cost. Educators apply for a two-month loan, and precedence is given to organizations that serve students that are traditionally underrepresented in computer science.

5–18 AGE GROUP	**2011** ESTABLISHED
250,000 CHILDREN / USERS	**For-profit** ORGANIZATION

My students fell in love with the Finch robots and many say they will always remember the glowing nose. They felt proud that they were able to problem solve and program a robot.

– Topez Patterson,
Technology Teacher

Inspired to implement this? Here's how:

01   APPLY TO THE LOAN PROGRAM (OR PURCHASE A SET OF FINCHES)

The loan program accepts applications in the spring each year. To apply, create a plan for how you'll use the Finch in your classroom over the course of a two-month loan. You may also choose to purchase your own set of Finches.

02   PREPARE TECHNOLOGY

Make sure you have a computer for each Finch you'll use. First-time loan recipients receive a test Finch in advance of their loan period to help work out connectivity issues with your computers in advance.

03   PLAN LESSONS

Try out programming languages with your test Finch, and begin to plan lessons to suit your students. On the BirdBrain Technologies website, access recommendations for choosing a programming language, lesson plans, and more.

04   ENGAGE YOUR TEAM

Get colleagues on board by introducing them to the Finch, doing professional development together, and collaborating on lesson plans that integrate other subjects.

05   USE THE FINCH WITH STUDENTS

This is where it all comes together: when your Finches arrive, it's time to execute your plan with your students.

06   REFLECT AND OFFER FEEDBACK

Tell BirdBrain Technologies how it's going. Help them improve the Finch and the loan program by offering feedback. Share curricula you've created so that other educators can use and build on your work.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE FINCH ROBOT INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Generate excitement for computer science learning

Engage students from diverse backgrounds in physical computing and robotics

Help educators create and evolve computer science education programs

Expand student mindsets about computer science

IMPACT

Over 175,000 students have programmed a Finch through the loan program

1,200 Finch Robots on loan at any given time

Loans to over 1,000 organizations in all 50 US states

RESOURCES NEEDED

✚ One computer per Finch Robot

✚ Time to get comfortable with the Finch and prepare lessons

CONNECT WITH THE INNOVATOR

Aparna Brown
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birdbraintechnologies.com

Promoting cross-cultural understanding and empathy through youth-led extracurricular activities.

Global Minds Initiative

GLOBAL MINDS INITIATIVE

Pittsburgh, Pennsylvania, USA

In 23 schools across the United States and Canada, students from over 50 countries meet after school to combat intolerance and foster intercultural friendships. Designed, led, and run entirely by youth, this program pairs native English speakers with English-language learners to support academic performance and forge social understanding.

As global migration increases, communities around the world are becoming more diverse. Cultural diversity is at an all-time high in the United States, and continues to rise. And with increased diversity comes cultural conflict and misunderstanding, which can lead to xenophobia, discrimination, and violence.

Over half of the world's refugees are under the age of 18. In order to flourish, these children need a positive, welcoming environment that supports their language learning and social integration.

How can youth lead the way in creating a world where immigrant and refugee students can thrive?

Designed, led, and run entirely by youth, Global Minds does two things at once: it forges intercultural understanding among diverse groups of young people while supporting immigrant and refugee students learning English.

Native English speakers and English-language learners come together after school once a week to learn about each other's cultures and practice English through structured activities. They also complete service projects that benefit immigrants, refugees, and people of color in their communities.

Since establishing the first club at Allderdice High School in Pittsburgh, Global Minds has launched a chapter model to support students at 22 other schools across the United States and Canada, with new chapters being formed monthly.

In the schools operating Global Minds chapters, students of different nationalities sit together at lunch, go to the movies, and smile at one another in the hall. These might seem like small acts, but they represent steps toward a cultural shift that is needed for every child to flourish.

11–18	**2016**
AGE GROUP	ESTABLISHED
1,500	**Not-for-profit**
CHILDREN / USERS	ORGANIZATION

The Global Minds club changed my life. It helped me share my story, make new friends, and helped me feel at home. I never felt more welcomed.

– Israa Abdulmuttaleb,
Global Minds participant

Inspired to implement this? Here's how:

01   BUILD YOUR TEAM AND CONFIRM SUPPORT

Every Global Minds chapter includes student leaders, an adult ally, and support from the school administration. Before you start your application, be sure you have these three things in place.

02   INQUIRE ONLINE

When you're ready to start your chapter, inquire online by completing the form at globalminds.world/chapters. This simple form is the first step in the application process.

03   COMPLETE THE APPLICATION PROCESS

After you complete the form, a Global Minds team member will walk you through the chapter application, expectations, and requirements. During this stage, you'll consider your leadership team, programming, and chapter sustainability.

04   RECEIVE A CHAPTER TOOLKIT

If your chapter application is accepted, you'll receive a chapter toolkit from Global Minds, including a copy of the curriculum, leadership guides, T-shirts, and other goodies to get you started with your chapter's programming.

05   JOIN THE GLOBAL MINDS NETWORK

As a Global Minds chapter, you'll connect with like-minded educators and student leaders. Through the app, in-person convenings, and collaboration with the national team, you'll be a part of a community working for inclusive schools.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE GLOBAL MINDS INITIATIVE INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Nurture students' empathy, intercultural understanding, and self-awareness

Engender interactions that lead to improved academic performance for English-language learners

Inspire social bonds and intercultural friendships at school

Activate youth community service and engagement

IMPACT

23 youth-led chapters in schools across the United States and Canada

95% of participants report that the program inspires them to make a positive impact on society

1/3 of English-language-learner participants connect with peers for academic support

RESOURCES NEEDED

+ Space to gather after school on an ongoing basis

+ Supportive adult ally to assist with logistics

CONNECT WITH THE INNOVATOR

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Authentic and immersive research experiences for high school students with world-class scientists as mentors.

Hillman Academy

UNIVERSITY OF PITTSBURGH
UNIVERSITY OF PITTSBURGH MEDICAL CENTER HILLMAN CANCER CENTER

Pittsburgh, Pennsylvania, USA

Each summer, high school students perform authentic research alongside world-renowned scientists at the Hillman Cancer Center and throughout the University of Pittsburgh. By engaging students in a rigorous, supportive, full-time summer mentorship program, the Hillman Academy is working to increase the diversity and quality of students prepared for careers in science, technology, engineering, and math.

Despite growing career opportunities in science, technology, engineering, and math (STEM) and high levels of general interest in STEM among students in primary school, there is a steep decline in students continuing to pursue advanced study in science after high school. This contributes to the troubling lack of diversity in STEM fields, especially biomedical sciences.

Research shows that early research experiences—when students are still in high school—combined with mentoring relationships, helps to solidify students' interest in STEM and their confidence to pursue a future as a STEM professional.

How can research institutions cultivate diversity and engagement in STEM education?

The Hillman Academy is an eight-week, intensive summer program that immerses high school students in a graduate-level research project, working one-on-one with a researcher at the University of Pittsburgh, University of Pittsburgh Medical Center, or Hillman Cancer Center.

Over the course of the summer, students become experts in their research topics through lectures and by reading primary research literature. They gain practical experience assisting real scientists in completing their actual research agenda.

Alongside the laboratory experience, students participate in career-development workshops that introduce them to STEM professionals and give students a chance to practice workplace skills like communication and collaboration.

Participation in the program is free of charge and, as part of their commitment to diversity and inclusion, Hillman Academy pays stipends of $2,400, as well as free meals and bus passes, to all students from populations that are underrepresented in the biomedical sciences.

15–18 AGE GROUP	**2009** ESTABLISHED
500 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

The experience is unparalleled. To be a part of truly revolutionary research that will impact lives all over the world gave me such a sense of accomplishment.

– Elizabeth McGrady, Hillman Academy Alumna

Inspired to implement this? Here's how:

01 IDENTIFY RESEARCHERS INTERESTED IN MENTORING STUDENTS

Reach out to local universities, institutions, labs, hospitals, or companies that perform research. If you are at a research institution, connect with colleagues interested in providing mentorship opportunities to students.

02 OBTAIN INSTITUTIONAL APPROVAL

With researchers on board, you'll need to get institutional approval to establish and run a mentorship program. There are likely institution-specific policies for programs that involve minors which you'll need to abide by or request changes to.

03 RECRUIT STUDENTS

Establish partnerships with schools and community organizations to find students interested in a research mentorship program. Establish intentional recruiting practices to ensure you're attracting students from diverse backgrounds.

04 DEVELOP THE CURRICULUM

Choose the length of the program and the mix of student activities. Put the research project at the center of the program, but consider lectures, workshops, career spotlights, and social activities to round out students' experiences.

05 RUN THE PROGRAM

The best part of running a research program is interacting with the students. Connect the students and mentors, make sure both groups have what they need, and watch the students and mentors learn, grow, and make discoveries together.

06 REVIEW, TRACK, REFLECT, AND KEEP IN TOUCH

Collect data to evaluate and improve your program as you prepare for future cycles. And keep in touch to extend your impact and record the long-term outcomes of program alumni.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE HILLMAN ACADEMY INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Promote education and interest in STEM via authentic research experiences

Provide college preparation and career development especially pertaining to STEM

Encourage pursuit and persistence in STEM for underrepresented students

Increase diversity and inclusivity in STEM specifically in research

Demystify what it means to be a scientist

IMPACT

Alumni have co-authored more than 30 manuscripts

99% have matriculated into college

93% pursuing degrees in science or healthcare

RESOURCES NEEDED

✚ Scientists committed to developing the talent pipeline to their field

✚ Access to research labs and equipment

✚ Community partners to aid in recruiting a diverse student population

✚ Grant funding to pay students and support robust outreach

CONNECT WITH THE INNOVATOR

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Maker learning projects, led by girls, that catalyze kindness and raise money for charitable causes.

JAM

AVONWORTH PRIMARY CENTER

Ohio Township, Pennsylvania, USA

When two first-grade girls came to their teacher with the idea to start a business that donates profits to charity, a maker-learning program became an incubator for young entrepreneurs. When the girls started making products to combat bullying, the business became a catalyst for kindness in the community.

In 2016, first-graders Julia and Amelia approached their teacher Maureen and asked if they could start a business that sold products made in their school's makerspace and donated the profits to charitable causes. That day, JAM was born, named for three co-founders' first initials.

JAM began selling simple products like keychains and "tin bins" (mint tins that are repurposed into containers for fun themed items or craft kits) to people at their school. Each product that the girls produced sold out, and soon they were welcoming more JAM members who wanted to help.

Soon, dozens of girls (and boys) were developing maker and entrepreneurship skills to support causes they cared about, from cancer research to hunger. But something else was happening, too—by putting students in charge of what to make, JAM was creating space for the development of products that could change the world.

How can we empower young learners to make a difference in their school community?

One day at school, a kindergarten JAM member experienced bullying, and it gave her an idea: what if JAM could make and sell a way to identify the kind people? JAM members started making buttons with a simple message: #bethekindkid.

Buttons became #bethekindkid T-shirts, and JAM has now sold thousands of shirts—it's impossible to turn a corner at the school without spotting someone wearing one. This simple phrase has spread kindness around the community, from students and teachers to cafeteria staff and parents.

#bethekindkid has helped the ideas behind JAM spread to other schools: four JAM clubs have formed at nearby schools. Each is as unique as its student members, but they're all creating opportunities for young entrepreneurs to make a difference.

5–13	2016
AGE GROUP	ESTABLISHED
18,500	Not-for-profit
CHILDREN / USERS	ORGANIZATION

Our community is changing as a result of this program. Bus drivers wear the shirt! So do police officers, cafeteria workers, dentists, the list goes on. These four simple words have come to mean so much.

– Maureen Frew, teacher and JAM co-founder

Inspired to implement this? Here's how:

01   FIND A SPONSOR

JAM clubs need at least one adult sponsor who will champion and support member students' visions. Sponsors must believe in the power of making—students using their own hands and minds to create a product.

02   OBTAIN SUPPORT FROM ORGANIZATIONAL LEADERSHIP

A supportive voice from leadership will help keep your JAM club running smoothly. This could be a principal, superintendent, or even a member of the school board.

03   RECRUIT MEMBERS

Student members are at the center of a JAM club. They decide what to make, how to sell it, and where to donate the profits. Find students who are interested in joining the making and kindness movement, anyone is welcome to join.

04   CHOOSE PRODUCTS TO MAKE

Next, JAM club members must decide what kind of things to make and sell. Discuss what members like to make, what you think will appeal to your customers, and how much a product will cost and sell for.

05   MAKE AND SELL YOUR PRODUCTS

Gather your materials, break down the steps involved in making your product, and make sure everyone has a role in the creation process. Then, determine how you'll get the word out about your products and sell them.

06   DONATE YOUR PROFITS

Members decide together where profits should be donated by doing research about charities and causes, and then voting to select one each month. Donations can mean more than money—they can also mean time and donated goods.

HUNDRED.ORG

INTENDED OUTCOMES

Empower students as change makers

Develop students' self-confidence and entrepreneurial skills

Spread kindness and empathy throughout the school community

IMPACT

Over 18,500 #bethekindkid T-shirts sold

60 student members at Avonworth Primary Center

4 additional JAM clubs operating at nearby schools

Over $12,500 in charitable donations to 33 nonprofit organizations

RESOURCES NEEDED

✛ Adult sponsor who can champion and support students' visions

✛ Group of students who share a desire to make positive changes in their community through making

CONNECT WITH THE INNOVATOR

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Giving teens access to technology and mentors to pursue their creative passions at their local library.

The Labs @ CLP Summer Skills Intensives

CARNEGIE LIBRARY OF PITTSBURGH

Pittsburgh, Pennsylvania, USA

Carnegie Library of Pittsburgh's 18 locations have dedicated space where teens can hang out, mess around, and geek out. Each summer, Intensives offer teens a chance to spend five days exploring a creative field under the mentorship of teaching artists.

As technology transforms access to information, libraries around the world are evaluating the role they play in society. Libraries hold the potential to serve as public stewards of information, centers of community, and champions of literacy in all its forms.

Libraries can play a special role in the lives of young people. A free, public space between school and home, libraries are a safe place for teens to be outside of their caregivers' direct supervision. In this role, libraries have an opportunity to forge connections between teens and the resources and opportunities in their community.

How can libraries connect their teen patrons to opportunities that will help them flourish?

The Teenspace at every Carnegie Library of Pittsburgh location is a welcoming neighborhood space where teens can explore their interests and build their own future without pressure or expectations. Each is staffed by supportive, creative staff who connect teens to technology, resources, and opportunities that support their interests. Year-round at weekly Teen Time programming, young patrons can create, play, and hang out with their peers.

Each summer, the Library offers the opportunity to take a deeper dive into the Library's creative pathways through Summer Skills Intensives. From 12pm to 4pm for five days, teens focus on photojournalism, filmmaking, beat-making, personal branding, or street art.

Skills Intensives subjects are determined by teen patrons' interests. Each Intensive is co-developed and delivered by a local organization or creative professional. By convening these Intensives, the Library connects teens with community partners and creative professionals as they discover and develop their passions.

11–18 AGE GROUP	**2016** ESTABLISHED
190 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

I have created something I feel good about.

– Teen participant in beat-making intensive

Inspired to implement this? Here's how:

01   CONNECT WITH TEENS

As a teen-driven learning opportunity, your program should be planned in collaboration with teen participants. Begin by listening to the teens you hope to serve, and working with them to identify what they want to learn.

02   DEVELOP OR LEVERAGE COMMUNITY CONNECTIONS

Find artists, creative professionals, and organizations in your community that specialize in the skills that teens identified. Ask them to partner with you in the development and execution of your program.

03   COLLABORATE TO CREATE A CURRICULUM

Work with your partner organizations to design a five-day curriculum for each session you plan to run. Meet up to determine a schedule and activities that will meet the learning goals that teens have expressed interest in.

04   PROVIDE PEER-TO-PEER LEARNING WITH A TEEN LEADER

Teens learn best from each other. Enlist a teen to act as a co-teacher for each Intensive (and pay them for their work). Peer mentors should be teens who are respected and responsible leaders in your space.

05   EMPOWER YOUR TEENS TO CREATE AND LEARN

It's time to run your Intensive. As the connection point between teens and professional mentors, your role is in nurturing relationships. That can mean going on a snack run, helping a teen use new software, and lots of things in between.

06   SHOWCASE AND PROMOTE PARTICIPANT CREATIONS

After your Intensive is over, celebrate the work of teen participants by showcasing and sharing what they've created. A culminating project or event can demonstrate how much you value teens' participation.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE LABS @ CLP SUMMER SKILLS INTENSIVES INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Empower youth to use technology as a tool

Connect youth with career skills and opportunities

Create connections between learning opportunities across the community

Increase youth access to creative technology and mentor support

Provide a platform for youth-created media

IMPACT

26 Intensives offered since 2016

286 teen participants and mentors

15 local organizations engaged as educator partners

RESOURCES NEEDED

✛ Access to a welcoming and supportive space

✛ Food for hungry participants

✛ Technology, software, and wireless internet access

✛ Teaching artists and professionals with creative expertise

CONNECT WITH THE INNOVATOR

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Uncovering the principles of practice that make making work.

MAKESHOP

CHILDREN'S MUSEUM OF PITTSBURGH

Pittsburgh, Pennsylvania, USA

This research-based learning space is a permanent exhibit inside the Children's Museum of Pittsburgh. MAKESHOP is a drop-in environment where children and families make, play, and design using "real stuff"—the same materials, tools, and processes used by professional artists, builders, programmers, and creators of all kinds.

In 2011, the Children's Museum of Pittsburgh partnered with learning researchers to design a new kind of museum exhibit. In this space, young patrons would explore real tools, materials, and processes while museum educators investigated the practices and possibilities of maker learning. The result was the first museum makerspace: MAKESHOP.

At MAKESHOP, materials like cardboard, plastic food containers, old clothes, scrap lumber, and broken toys find new purposes and uses, taking on a new and different life with the help of tools and imagination.

While visitors are weaving on the MAKESHOP's loom, building cardboard creations, and creating stop-motion animations, museum educators are testing principles of materials exploration, investigating strategies for supporting learning, and refining the practice of maker education.

How can museums help educators implement maker learning?

What happens at MAKESHOP reaches far beyond the walls of the museum. MAKESHOP has become a hub for maker-learning resources, equipping educators from around the world with tools to integrate making into their unique learning context.

MAKESHOP staff have identified seven core learning practices that empirically describe children's engagement in MAKESHOP, creating a common language around making as a learning process.

Through partnerships with Maker Ed, Google, the Institute of Museum and Library Services, the National Science Foundation, and others, MAKESHOP has supported the design and creation of hundreds of makerspaces across the world, and provided resources and professional development to thousands of educators.

4–11	2011
AGE GROUP	**ESTABLISHED**
2,280,000	Not-for-profit
CHILDREN / USERS	**ORGANIZATION**

When kids are making, they're learning about how their environment is constructed, and how they can be agents in that construction—they're capable of changing their environment.

– Rebecca Grabman,
MAKESHOP Manager

Inspired to implement this? Here's how:

01   VISIT MAKESHOP

A permanent exhibit at the Children's Museum of Pittsburgh, MAKESHOP is open from 10am to 5pm all year long. Try your hand at one of the daily projects being offered, or explore the tools and materials available in the space.

02   EXPLORE THE MAKESHOP BLOG AND SOCIAL MEDIA ACCOUNTS

The MAKESHOP blog (makeshoppgh.com/blog) is the best place to learn how MAKESHOP was developed and how it has evolved over the years. And on Twitter and Instagram (@makeshoppgh) you can get daily maker inspiration.

03   USE THE MAKING SPACES TOOLKIT

In partnership with Google and Maker Ed, MAKESHOP is developing a network of schools, libraries, and education centers with expertise in making. Access the tools and resources developed by this network at makered.org/making-spaces.

04   ATTEND A PROFESSIONAL DEVELOPMENT SESSION
OR EXPLORE ONLINE RESOURCES

MAKESHOP offers maker-centered professional development experiences for educators, including a week-long Maker Bootcamp. Sign up or find online resources at pittsburghkids.org/education/teachers

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE MAKESHOP INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Increase teacher confidence with making in the classroom

Equip teachers with maker-education resources

Create a low-risk environment where learners can try new things

Cultivate learners' creative thinking, problem solving, and 21st-century skills

Develop learner confidence and self-direction

IMPACT

Over 300 educators have attended Maker Educator Boot Camp

Supported the development of over 100 makerspaces in schools, libraries, and community centers

More than 20 resources about maker education published

RESOURCES NEEDED

+ A space (any space)

+ Educators and learners with an interest in hands-on learning

CONNECT WITH THE INNOVATOR

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Using arts education and mentorship to increase high school graduation rates.

Manchester Craftsmen's Guild

MANCHESTER BIDWELL CORPORATION

Pittsburgh, Pennsylvania, USA

Founded in 1968 on the belief that environment shapes behavior, Manchester Craftsmen's Guild (MCG) has grown from a community-based ceramics program into a cornerstone of Manchester Bidwell Corporation's internationally recognized education model. Across four artmaking disciplines, MCG updates the traditional master-apprentice model to help at-risk youth graduate on time.

As a teenager in the 1960s, Bill Strickland's horizons were limited by the poverty he experienced in his everyday life and throughout his neighborhood. After a chance encounter with teacher Frank Ross who showed him the basics of working a potter's wheel, Bill found a renewed sense of passion, purpose, and potential. The mentoring that Frank provided to Bill, focused on the creative experience of artmaking, changed Bill's life.

Over the ensuing half century, Bill has dedicated himself to building an institution that would take that transformative mentoring relationship he experienced to scale for thousands of other students.

How can an after-school program help increase high school graduation rates?

Manchester Craftsmen's Guild (MCG) is a no-cost after-school program for Pittsburgh Public Schools students that offers arts programming in a world-class facility that surrounds students with art, architecture, music, food, flowers, and natural light.

Through MCG's apprenticeship model, teaching artists build deep relationships with students. As students learn in the ceramics, photography, digital, and design studios, they each develop a close relationship with a caring adult mentor.

This formula makes MCG's programming the best part of a student's day—so much so that they'll wake up and go to school because they don't want to miss their after-school program. As a result, graduation rates increase, and students come to believe in themselves and their value.

Today, MCG is part of the Manchester Bidwell Corporation education model, which has been replicated through 12 centers operating around the world and aspirations to build 1,000 more.

11–18 AGE GROUP	**1968** ESTABLISHED
25,000 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

People are born into this world as assets, not liabilities. It's all in the way we treat people (and ourselves) that determines a person's outcome.

– Bill Strickland, Founder of Manchester Craftsmen's Guild

Inspired to implement this? Here's how:

01 CONTACT THE REPLICATION DIVISION

Manchester Bidwell Corporation's replication division, the National Center for Arts and Technology (NCAT) was established to help cities across the globe bring this model to their community. Get started at ncat-mbc.org.

02 ASSESS YOUR POTENTIAL

Together with a local steering committee, NCAT will work with you to assess the feasibility of opening a center. This study considers local demographics, workforce trends, and educational needs as well as your capacity and resources.

03 BUILD BUSINESS AND PHYSICAL INFRASTRUCTURE

If your feasibility study bears out, NCAT provides support to establish your organization, build or renovate your facility, recruit and train your staff and teachers, brand and market your offerings, and nurture your fiscal health.

04 OPEN YOUR DOORS

With all the pieces in place, you'll open your doors and begin to offer programming. NCAT provides support for the first 12 months of operations to ensure that your center is running smoothly and you can stand firmly on your own.

05 SUSTAIN THE PROGRAM

After your first 12 months, NCAT offers membership options to provide additional support at a level that suits your needs, from basic tune-ups to major overhauls.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE MANCHESTER CRAFTSMEN'S GUILD INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Support, inspire, and educate urban youth

Increase high school graduation rates

Encourage enrollment in post-secondary education

IMPACT

98% of students graduate from high school on time

92% of students plan on enrolling in post-secondary education

12 centers open and operating around the world

RESOURCES NEEDED

✚ A building equipped with studio spaces

✚ Talented and enthusiastic staff and teaching artists

✚ Robust funding to support operation

✚ Partnerships with local school systems, government agencies, and community organizations

CONNECT WITH THE INNOVATOR

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Noticing and affirming the essential building blocks of effective relationships between children and adults.

Simple Interactions

FRED ROGERS CENTER FOR EARLY LEARNING AND CHILDREN'S MEDIA AT SAINT VINCENT COLLEGE

Latrobe, Pennsylvania, USA

A practice-based, strengths-focused, and community-driven approach to support educators by affirming the importance of positive, responsive, and supportive human interactions in learning and development. If the relationship between a child and an adult is the active ingredient in development, simple interactions between children and adults are the basic building blocks of such relationships.

The stories and science of human resilience tell us that children who have overcome poverty and adversity have had at least one positive human relationship with a caring adult.

In fact, such relationships serve as the "active ingredient" in healthy human development, without which few practices, programs, or policies can make a meaningful or lasting impact.

To improve the quality of children's care and education, especially in resource-deprived communities, our collective action needs to be guided by this essential question:

How do we encourage, enrich, and empower human relationships around children?

Simple Interactions is a collaboratively developed, broadly applied, and freely accessible set of tools and resources to guide teachers, parents, social workers, policymakers, and others to recognize and promote the most important resources in children's lives—their adult helpers.

The underlying elements of Simple Interactions are not novel, but enduring, well-known, scientific principles of human development—connection, reciprocity, opportunities to belong and to grow. The innovation is to make such big ideas simple, (freely) accessible, language-independent, and culturally universal.

Developed first for use in China with orphanage caregivers to discover their own powerful practices helping orphans with disabilities, collaborative teams based in Pittsburgh have since adapted the tools for use in low-resource childcare centers, high-poverty public schools, out-of-school youth development programs, Children's Hospitals, museums and maker spaces, group homes, and with crossing guards on street corners.

1–18 AGE GROUP	**2010** ESTABLISHED
5,000 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

Remember how important you are. It is not the resources, curriculum, and other 'stuff' of education that is most important, but the presence of those helpers working with children every moment.

– Dana Winters, Director of Simple Interactions

Inspired to implement this? Here's how:

01 GETTING STARTED

As a professional learning approach, the key premise of Simple Interactions is that the most sustainable best practices come from what adults already do well. Start by identifying and defining the developmental interactions between adults and the children in their care, giving adult helpers a language to talk about their practice.

02 OBSERVING AND FILMING

Observe and capture on video the existing and emerging practices of children's helpers in their authentic environments. Use small, unobtrusive video cameras to record interactions during a typical day, where adults and children interact in ordinary, simple ways.

03 LEARNING AND GROWING TOGETHER

Bring child- and youth-serving peers together for a series of learning sessions, where the group views video recordings of their practice. Invite participants to engage in reflection and to describe, identify, and understand the "active ingredients" of the interactions they're seeing on video.

04 USING THE SIMPLE INTERACTIONS TOOL

The Simple Interactions Tool provides a common, descriptive language to talk about interactions in practice. It serves as a visual representation, highlighting the four dimensions of developmental interactions: Connection, Reciprocity, Inclusion, and Opportunity to Grow.

05 APPLYING SIMPLE INTERACTIONS TO YOUR CONTEXT

The Simple Interactions approach can be adapted and adjusted to fit any setting in which adults and children or youth interact. Simple Interactions has also been used in one-to-one coaching relationships, where a coach or supervisor will observe or film a teacher, then use the SI Tool to talk about what they noticed in practice.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE SIMPLE INTERACTIONS INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Affirm, uplift, and support front-line practitioners in their daily interactions with children and youth

Grow and improve the quality of child-serving programs by discovering the resources and expertise within local communities

Build a common purpose and vision focused on human relationships across child-serving systems

IMPACT

Reaching over 25,000 child- and youth-serving adults through over 150 keynote addresses and workshops across all 50 states in the US, Canada, Scotland, and China

Supporting nearly 5,000 child-and youth-serving adults to actively use Simple Interactions within their settings

Research shows that participation in Simple Interactions learning sessions increased psychological safety and willingness to implement new learning for preschool and Pre-K teachers, as well as substantially improved staff-child connection, reciprocity, and inclusion in out-of-school learning

RESOURCES NEEDED

✚ A setting in which adults and children or youth interact

✚ A video recording device (even a smartphone is enough)

✚ The Simple Interactions Tool

✚ Time and space to facilitate reflective learning sessions

CONNECT WITH THE INNOVATOR

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Combining the academic benefit of summer school with the fun of summer camp to reduce summer learning loss.

Summer Dreamers Academy

PITTSBURGH PUBLIC SCHOOLS

Pittsburgh, Pennsylvania, USA

A no-cost, premier summer learning experience providing the academic benefit of summer school along with the fun of summer camp. Through a mix of high-quality, engaging instruction by certified teachers in the morning and enrichment experiences provided by community partners in the afternoon, students who regularly attend Summer Dreamers show significant improvement in literacy, math, and social-emotional skills.

For American students, the 10 weeks of summer break between academic years can feel like one long Saturday. To be sure, summer is a time to be outdoors having fun, but that doesn't mean learning has to take a vacation.

Summer learning loss is a real problem: research shows that, regardless of income, students lose about two months' worth of math skills and low-income students lose more than two months' worth of literacy skills.

While summer learning opportunities abound in many communities, they often cost money and are almost always voluntary, factors that create barriers for the students who need summer learning the most.

How can summer learning be made just as effective as summer school and just as fun as summer camp?

Summer Dreamers Academy is a no-cost, 27-day experience open to all Pittsburgh Public Schools students from kindergarten through 8th grade. Inspired by the belief that all children deserve access to high-quality learning experiences year round, Summer Dreamers Academy transforms four school buildings into campsites where "campers" learn new things, meet new people, and have their best summer ever.

Each morning, campers complete 90 minutes of literacy and 90 minutes of math to support academic growth and mitigate summer learning loss. Fun and engaging sessions are taught by district-certified expert teachers and align with school year learning goals.

Each afternoon, campers participate in enrichment activities led by community partners. Campers choose from a range of activities like mosaic-making, dance and theater performance, coding, kayaking, or biking.

Summer Dreamers Academy is an integral part of the district's effort to provide a 12-month learning progression that helps students explore new interests as they become life-long learners.

5–14 AGE GROUP	**2010** ESTABLISHED
20,000 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

My favorite part about Summer Dreamers was meeting new people, my other friends, and my activities and classes.

– 5th grade camper

Inspired to implement this? Here's how:

01   CREATE A SUMMER PLANNING TIMELINE

Once your team has been identified, the first and most important step is creating a planning timeline that identifies key activities, due dates, resources needed, and the people responsible. Find a detailed summer planning template at summerlearningtoolkit.org.

02   DEVELOP A SUMMER BUDGET

In the early fall, build a budget for next summer that includes costs like staffing, facilities, meals, transportation, activities, and supplies, as well as any sources of income. This should provide ample time to seek additional funding.

03   IDENTIFY AND RECRUIT COMMUNITY PARTNERS

Issue a call to community organizations seeking ideas for afternoon enrichment activities they can provide. To ensure that the activities are engaging and meet your campers' needs, invite students to take part in the selection process.

04   HIRE AND TRAIN SUMMER STAFF

Develop a hiring and professional development plan. You'll need a leadership team to coordinate activities and certified teachers to provide instruction. Before camp begins, bring everyone together for training on the curriculum and camp culture.

05   RECRUIT YOUR CAMPERS

Identify which students you are trying to help and set recruitment goals based on your budget. Summer Dreamers targets low-income students and students underperforming on standardized tests.

06   CURRICULUM CHECK-IN

Gather materials and resources that support the summer curriculum. Support teachers with curriculum coaches. Put methods in place to track progress of instruction and learning over the course of the camp.

07   FINALIZE RESOURCES

It's time to make sure you have all the resources you need to make your summer camp successful. Meet with all the necessary parties to discuss coordination around transportation, facilities, and food services.

08   ENSURE YOUR CAMPERS SHOW UP

To help ensure attendance, consider offering incentives to campers, like book bags with school supplies, tickets to sporting events, or special meals. Host events where parents and students can tour sites, meet staff, and get excited.

09   EVALUATE THE PROGRAM

At the end of summer, survey campers, families, teachers, staff, and enrichment providers to identify strengths and opportunities for growth.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE SUMMER DREAMERS ACADEMY INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Eliminate racial disparity in achievement levels of African-American students

Help students develop greater perseverance and confidence

Incite in students a passion for and excitement about learning

Minimize or stop the effects of summer learning loss

Support academic growth in math and English-language arts

Improve students' self-regulation and self-motivation

IMPACT

Academic benefits equivalent to 25% of school year learning

75% of campers reported improvements in reading

73% of campers reported improvements in math

After two consecutive summers, students with high attendance (20 or more days per summer) outperformed peers in math, English-language arts, and social-emotional learning

RESOURCES NEEDED

✛ Time to plan and organize the camp 10 months in advance

✛ A school or community center to serve as a "campsite"

✛ 1 certified teacher and 1 camp coordinator for every 30 students

✛ 1 enrichment provider for every 15 students

✛ Transportation and meals for all students

CONNECT WITH THE INNOVATOR

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Reimagining professional development to help educators collaborate, create, and innovate in the classroom.

transformED

ALLEGHENY INTERMEDIATE UNIT

Homestead, Pennsylvania, USA

transformED offers radically relevant professional learning experiences that emphasize hands-on practice with new ideas, skills, and tools, together with a technology lending library, grant funding, and peer support. transformED professional development workshops are learner-centered, inquiry-driven, project-based, hands-on, and collaborative—just like it should be in the classroom.

Advances in technology and the science of learning mean that every teacher, no matter how long they've been in the classroom, has the opportunity to reimagine how learning works for their students.

The challenge is that there are so many priorities competing for teachers' time and attention, it's impossible to expect them to stay at the forefront of research and development.

The good news is that many educators are already reimagining what learning can be, rethinking their approach to teaching, and redesigning their classroom environments to meet the needs of today's students and better prepare them for a future that's already here.

How can professional development help educators stay ahead of the curve?

transformED is an initiative of the Allegheny Intermediate Unit that connects educators with the professional learning, technology access, peer networks, and grant funding they need to start, scale, and sustain transformational change.

transformED offers more than 100 free workshops each school year, open to all educators, including formal K–12 teachers and administrators, out-of-school educators, librarians, and teaching artists. transformED offers teachers professional development opportunities that are learner-centered, inquiry-driven, project-based, hands-on, and collaborative—just like learning should be in the classroom.

As an innovation lab for educators, transformED translates the latest developments and emerging trends in teaching, learning, and technology into practical and supported resources educators can use to make a difference for their students.

Teachers	2011
TARGET GROUP	ESTABLISHED
2,400	Not-for-profit
USERS	ORGANIZATION

transformED is a community of thoughtful practitioners striving everyday to hone their craft and create engaging opportunities for their students to learn and grow.

– Tyler Samstag, Director of Instructional Innovation at Allegheny Intermediate Unit

Inspired to implement this? Here's how:

01 IDENTIFY AND REPURPOSE A DEDICATED SPACE

Find a space for educators to meet. It might be an unused classroom or backroom at a community center. Think critically about how the space design can support collaboration and creativity, while creating an atmosphere where workshop participants will feel safe and supported to take risks.

02 ENGAGE STAKEHOLDERS

Connect with schools, education service agencies, out-of-school providers, workforce-development agencies, and other stakeholders to discover shared goals and interests. You'll depend on partnerships to expand professional learning offerings that appeal to teachers and are relevant to the needs of a rapidly changing world.

03 ACQUIRE TECHNOLOGY AND SUPPLIES

Teachers often participate in transformED workshops to become comfortable using new technologies, whether that be the latest high-tech gadget or a low-tech, low-cost tool. On a limited budget? Consider asking new partners to borrow emerging technologies that they too are exploring or to donate old and unused technology.

04 DESIGN PROGRAMMING AND ADVERTISE TO EDUCATORS

Design diverse programming that will appeal to beginners as well as experienced education innovators. Create a calendar that is easy to navigate and share widely with educators. Teachers often need months of advance notice to attend external professional development, so make sure you advertise well in advance.

05 CREATE SHARED NORMS AND A CULTURE OF RISK-TAKING

Shared norms help create an environment that is safe and supportive for risk-taking. Encourage participants to step outside of their comfort zones, but ground exploration in research on pedagogy and technology integration.

06 DOCUMENT AND SHARE LEARNINGS

Educators are masters of their craft and when provided opportunities to collectively explore an emerging technology, creative insights emerge around how to thoughtfully integrate technology into their specific content areas. Listen and document key takeaways, then share them with even wider audiences of educators.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE TRANSFORMED INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

> Build a network of educators committed to honing their craft

> Inspire educators to practice classroom innovation

> Improve proficiency with education technology

> Energize teachers

IMPACT

> 2,400 teachers participating since 2016

> 139 school districts enrolling teachers

> More than one third are educators working in high-poverty communities

RESOURCES NEEDED

+ Space where diverse stakeholders from formal education, higher education, and industry can come together

+ Shared norms that create conditions for design and implementation

+ Strategic partnerships that create an inclusive community

+ Time and capacity to capture learnings to share with the broader community

CONNECT WITH THE INNOVATOR

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Live and on-demand broadcast of original writing, music, roundtable discussions, and journalism from area teens.

Youth Express

SLB RADIO PRODUCTIONS, INC.

Pittsburgh, Pennsylvania, USA

When youth realize that their voice matters, they realize that they matter. Since 2013, Youth Express has used tools of radio to create and distribute commentaries, discussions, documentaries, and other youth-generated content through a 24/7 radio station available on standard radio apps for smartphones and connected cars, a custom mobile app, social media, and on the web at youthexpress.org.

Youth are talked about, studied, marketed to, worried over, and blamed for almost everything. They are usually asked for their thoughts only when it's convenient for adults. Youth Express believes that youth voice matters all the time.

But in an era of ubiquitous visual media, the depth of insight and impact of student voices can be lost amidst the trappings of video and animation. And while opportunities for youth-made media proliferate, few programs succeed in broadening the audience beyond young people's peer groups.

How can we modernize the tradition of radio storytelling to amplify youth voices and reach adult audiences who need to hear these voices the most?

Youth Express is a 24/7 internet-radio service that delivers live and recorded audio of original works created by youth, including essays, poems, theater, music, and documentaries.

Students from different schools and communities come together to exchange ideas, learn from one another, and make original media using processes that sharpen fundamental communication skills, provide hands-on experience producing digital media, support academic work, and align to 21st-century competencies.

At drop-in and off-site programs, students produce commentaries taking a stand on an issue, roundtable discussions among diverse groups of youth, live talk shows, podcasts, and documentaries from start to finish in just a week.

While some Youth Express students have gone on to journalism or broadcasting careers, Youth Express is not intended to be a career training program. Rather, it is a platform that recognizes that all youth have an authentic voice that warrants dissemination.

13–18 AGE GROUP	**2013** ESTABLISHED
10,000 CHILDREN / USERS	**Not-for-profit** ORGANIZATION

I built a sense of awareness and an urge to learn more about the voices in my community. Youth Express strengthened my group work skills, ability to talk with strangers, and media making skills.

– Alexandra Sorce, Youth Express Documentary Producer

Inspired to implement this? Here's how:

01   RECRUIT ADULT AND YOUTH CHAMPIONS TO START THE PROGRAM

You'll need people who believe in the power of youth voice to inform, educate, and transform how young people see the world, and how they see themselves. Start with an adult devoted to amplifying authentic youth voices and a core group of students who can help you draft a plan and pilot the program.

02   CREATE A TRUSTED SPACE FOR SHARING AND RECORDING

Success requires first establishing an environment that ensures trust, mutual respect, boundaries, and a sense of belonging. Choose a comfortable, quiet space where participants can sit in a circle. Acquire simple equipment: a digital recorder, microphone and XLR cable, headphone amplifier, and four sets of over-the-ear headphones.

03   RECRUIT A COHORT OF STUDENTS AND START TO MEET REGULARLY

Recruit 8 to 16 students to meet for about an hour once a week for 6 to 8 weeks. Sit in a circle, provide a simple introduction to the equipment, and have each student record an introduction to themselves using a simple "Speed Script" format.

04   ESTABLISH A ROUTINE FOR RECORDING, PUBLISHING, AND LISTENING

Build confidence with regular listening and recording sessions that build on each prior week. Listen back to past recordings. Point out teachable moments and areas of curiosity. Demonstrate simple editing tasks and recording adjustments. Have the students complete a new "Speed Script" and record it themselves.

05   ADD SPECIAL PROJECTS AS TEENS GAIN EXPERIENCE

Put new skills to use in a framework that encourages creativity: Commentaries invite a single student to present a well-reasoned position on a social or political issue. Roundtables encourage discussion among a group of students. Documentaries challenge a pair of students to explore a topic in-depth, complete with research and interviews.

06   BROADEN DISTRIBUTION AND PARTICIPATION

Youth media deserves to be heard by a broad audience, so it's important that youth and adults work together to distribute final work products to audiences beyond student peers. Youth Express welcomes submissions via info@youthexpress.org.

WANT MORE? READ DETAILS ABOUT EACH OF THESE STEPS ON THE YOUTH EXPRESS INNOVATION PAGE AT HUNDRED.ORG

INTENDED OUTCOMES

Increase connections and empathy between teens in different neighborhoods

Strengthen communication skills

Ensure youth are heard by those outside of their peer group

IMPACT

10,000+ students engaged

102,037 on-demand plays

6,111 original works produced

RESOURCES NEEDED

✚ A team of dedicated mentors passionate about youth media

✚ Space to meet and learn together, ideally with a quiet space in which to record

✚ Audio recording hardware and editing software (even smartphones can play a role)

✚ A platform to distribute youth media (an audio-enabled website, social media page, or mobile app)

✚ Curricula for engaging students in projects that use the power of audio storytelling

CONNECT WITH THE INNOVATOR

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Do you want to organize a HundrED Spotlight?

HundrED Spotlights are an opportunity to gain a thorough insight into the education innovations taking place either in a specific area of education (e.g. literacy or sustainability), or within a certain geographic location (e.g. India or London).

HundrED Spotlights are organized by HundrED and a Spotlight Partner. Together we select the location or theme of focus and the partner will encourage applications from innovators for this Spotlight. In-depth research will be conducted together into these innovations and 10 will be selected by HundrED and an advisory board. Spotlighted innovations will be filmed, packaged, and shared on the HundrED platform.

We believe that the innovations selected for HundrED Spotlights deserve to be spread across the world, and that there are many great innovations just like them waiting to be discovered.

If you want to support further research in education, please contact us.

Contact information

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