The Intersection of Community Values and Program Evaluations
June 24, 2020

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Question to answer in the chat:

For you, what community value is most pressing right now? (Or what are you hoping to do MORE of?)
Webinar Agenda

- December Convening Background
- Overview of Products: Literature Review and “Map”
- Panel of Convening Attendees
- Small Group Discussions via Breakout Rooms
- Opportunity to Share Common Interests and Needs
Convening Objectives

• Understand the current state of evaluation and measurement tools in afterschool STEM programs.
• Address the need to monitor the quality and outcomes of a wide range of programs.
• Produce
  • a detailed, visual representation of the range of outcomes that afterschool programs are seeking to achieve;
  • a taxonomy of current evaluation instruments aligned to these outcomes; and
  • an identification of overlaps, gaps, and needs in order to guide practitioner choices about which tools to use and when, and to point to contributions that researchers can make by adapting existing instruments or creating new ones.
Attendees

People who care about learning STEM during out-of-school time

• Practitioners
• Researchers
• Evaluators
• Funders
Convening Structure

• Day 1 (Practitioners & Funders)
  • Visualizing current state of STEM learning assessment
  • Program perspectives on STEM outcomes & measurements
  • Reflections

• Day 2 (Everyone)
  • Sharing tools
  • Perspectives from RPPs
  • Summary of emerging issues

• Day 3 (Researchers & Funders)
  • Researchers add to visualization
  • Articulate values
  • Reflection and what’s next
Emergent themes

• Racial equity and social justice as a core commitment and motivation for OST STEM Programs

• Programs and the Communities of Color with whom programs partner, have specific, locally instantiated demands for how this looks in STEM learning/afterschool spaces

• Can a set of common measures assess a program’s efficacy and inform the program on how to better advance toward this core mission, or does the field need something else?
Goals

– Synthesize a broad collection of OST STEM measurement tools

– Better understand how STEM learning impacts equitable student outcomes
Conducting the research

Framing

– Equity in Informal STEM Education (Philip & Azevedo, 2017)

– STEM Learning Ecosystems (Barron & Bell, 2016; Bevan, 2019)

Method

– Searched OST STEM databases

– 76 measures, grouped into 10 categories
What we learned

Findings

– Individual achievement

– [Science], Technology, Engineering, Math

Feedback

– Additional tools

– Defining equity
Building the “Map”

Leah Silverberg

STEM Projects & Field Outreach Associate
Afterschool Alliance
Reminder of Convening Format

- Disseminators, Practitioners, and Researchers
- Agenda Overview
Questions and Discussion
BioBus
a grassroots approach to building a scientific community

Latasha Wright, PhD
latasha@biobus.org
Chief Scientific Officer
BioBus, Inc.
Vision: All people achieve their full scientific potential
Discover! at Home

Explore! at Home

Weekly Challenge

Investigate the Neuroscience of Sense

Student Town Halls
1) Sustained high quality of engagement of students
2) Building inclusive scientific community
3) Student voice is guiding light of curriculum development
4) in person vs remote: Same high impact and personal interaction with scientists→ Follow up with hands-on engaging activities that students can do alone or in classrooms
Heidi Carlone
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Pedagogical Framework

We care, conserve, tinker, design, investigate, and invent.

Environmental Problem

Natural Environment & Wildlife
CONSERVATIONIST

Doing ‘Good’

Society & Human Health
ALTRUIST

Sensemaking & Problem-Solving

Science
INVESTIGATOR

Computing Tools & Practices

Engineering
INVENTOR

TINKERER

DESIGNER

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using
<table>
<thead>
<tr>
<th>Driving Questions</th>
<th>Sub-Questions</th>
<th>Activity</th>
<th>STEM Profile Alignment</th>
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<tbody>
<tr>
<td>Is this habitat healthy?</td>
<td>How clean is this water?</td>
<td>Chemical water quality testing</td>
<td>x x x x x x</td>
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<tr>
<td></td>
<td>What is living here?</td>
<td>Searching for Macroinvertebrates</td>
<td>x x x x x</td>
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<tr>
<td>Where does stormwater go?</td>
<td>What is a watershed and how can it become polluted?</td>
<td>Watersheds: Our Water, Our Homes Activity with Small EnviroScapes</td>
<td>x x x x x</td>
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<td>Where are potential problems with stormwater? How can we solve those problems?</td>
<td>Stormwater Sleuthing Card Sort</td>
<td>x x x x x</td>
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<tr>
<td>How can we manage stormwater runoff?</td>
<td>How is a human-designed environment problematic for stormwater runoff?</td>
<td>Google Earth Time Lapse</td>
<td>x x x x x</td>
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<td>What is the relationship between infiltration rates and stormwater runoff?</td>
<td>Infiltration Tubes</td>
<td>x x x x x</td>
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<td>Design a pavement that is both permeable and walkable.</td>
<td>Permeable Pavement Engineering Design Challenge</td>
<td>x x x x x</td>
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<tr>
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<td>Design a way to manage stormwater runoff in a township</td>
<td>Best Management Practices Engineering Design Challenge</td>
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What seems most like you?

Altruist
- Helps People
- Cares deeply about people, their health, and their safety

Tinkerer
- Builds and Fixes
- Works well with hands. enjoys building, making, and fixing things. likes the process of trial and error.

Conservationist
- Cares Deeply About the Natural World
- Concerned about the impact of humans on the environment, land, and animals. Cares about biodiversity. Advocates for alternative energy and environmentally friendly solutions.

Designer
- Makes Things Visually Appealing
- likes to be creative and make things that are visually appealing. Enjoys creating and designing things through drawing, painting, photography, or technology. Thinks about the beauty and function of a product.

Inventor
- Comes Up with Creative and/or Logical Solutions
- Enjoys working through complex puzzles, logic games. likes to come up with imaginative and creative ways to solve problems.

Investigator
- Studies and Explains Problems
- Enjoys figuring out how and why things work. likes to look at a lot of information to find patterns and themes.

Place your name on the poster(s) that most align with your STEM interests
Your STEM Profile: What modes of engagement speak to you?

Based on your profile, you lean toward **inventor and tinkerer**. You are likely strongly interested in working through complex puzzles or imagining creative ways to solve problems. You are also likely interested in making things, taking things apart and putting them back together, and/or exploring things through trial and error.

Your lowest ranked category is **conservationist**. This could mean that you may not like or have had opportunities advocating for and working to preserve the environment.

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Acknowledgments

Project Team

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- **Evaluator**: Amy Germuth
- **Teachers**: from Triad NC regions
- **RAs**: Dearing Blankmann, Michelle Lovett, Alison Mercier, David Schouweiler, Ti’Era Worsley
- **Collaborators**: Megan Lancaster, Catherine Matthews, Ann Somers John Willse, Rachel Wilson-Potter, Haw River State Park educators

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