Relationships, Relevance, and Reciprocity: Shifting Our Institutional Perspectives Using a Connected Learning Ecosystems Framework

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Session Overview

- Key findings (Rae)
- Case studies (Ali, Kerri, Nina, Sarah)
- Asset mapping (activity)
STEM learning ecosystems

Rae Ostman
PI, SciAct STEM Learning Ecosystems
What are STEM learning ecosystems and how do they work?
STEM Learning Ecosystems

are intentionally designed, community-wide partnerships
that enable people to actively participate

in science, technology, engineering, and mathematics (STEM).
STEM learning ecosystems are designed to encourage people to learn about and use STEM throughout their lives,
at home, at school, and at work.
These partnerships draw on expertise and resources across a community.
to create equitable access for learners of all ages.
Place-based

STEM learning ecosystems
are responsive to cultural, societal, and geographic contexts,
creating experiences relevant to local learners
and a more vibrant future for everyone.
Inquiry into four STEM learning ecosystems
Inquiry into four STEM learning ecosystems

3 key findings

RECIPROCAL partnerships

genuine RELATIONSHIPS

RELEVANT learning
Key findings

1. To develop a community of lifelong learners, STEM learning ecosystems are built and sustained through intentional practices, principles, and activities; thrive through reciprocal relationships; and are grounded in their geographic and cultural context.
Key findings

1. To develop a community of lifelong learners, STEM learning ecosystems are built and sustained through intentional practices, principles, and activities; thrive through reciprocal relationships; and are grounded in their geographic and cultural context.

2. Ecosystems that are designed to broaden STEM participation center diversity, equity, accessibility, inclusion, and belonging; prioritize a flexible and transparent culture; build genuine relationships among both individuals and organizations; and cultivate sharing of programming and resources.
1. To develop a community of lifelong learners, STEM learning ecosystems are built and sustained through intentional practices, principles, and activities; thrive through reciprocal relationships; and are grounded in their geographic and cultural context.

2. Ecosystems that are designed to broaden STEM participation center diversity, equity, accessibility, inclusion, and belonging; prioritize a flexible and transparent culture; build genuine relationships among both individuals and organizations; and cultivate sharing of programming and resources.

3. Providing opportunities for authentic STEM engagement starts with understanding what is relevant to learners and their community, then connecting content and experts through experiences that actively engage those learners.

Key findings
Ali Jackson, Director of Programs & Partnerships
Ithaca’s Connected Learning Ecosystem (CLE)

Building on a Rich History of Collaboration
- Where Learning Happens
- Ongoing Museum & Community Partnerships

Mix of Informal Educators and Teachers
- libraries, our local land trust, state parks, community-based organizations, museums (art, historical, science, natural history), 4H, elementary/middle school science & social studies teachers
CLE Priorities

- Relationship Building
- Mission Aligned & Sustainable Programming
- Collaborative Learning
- “Doing Work Together”
Museum & Library Partnerships

FLLS Summer Reading Program

2023/2024 Librarian Solar Eclipse Training & Evaluation

Co-created Family Science Kits

Family Memberships & Museum Comeback Passes

This project was made possible in part by a grant from NASA's Universe of Learning
Reciprocity, Relationships, Relevance

Intentional Listening

Sharing Resources

Science and Community Advocates & Ambassadors

Thank You
Alarmed: 33%
Concerned: 25%
Cautious: 17%
Disengaged: 5%
Doubtful: 10%
Dismissive: 9%

Highest Belief in Global Warming
Most Concerned
Most Motivated

Lowest Belief in Global Warming
Least Concerned
Least Motivated

September 2021
(n=1,006)
Content filters

Are there compelling storytellers or stories in our region?

Is there potential for an interactive? Is the content exhibitable?

Are we considering equity and accessibility when showcasing a solution? Is this solution available to everyone?
Voices from our community:

Explore the encouraging stories of people from different backgrounds who are building a web of climate solutions in their lives and communities.
STEVE LANGDON
Director of Shingle Shanty Preserve

JUNE 24
Adirondack Peatlands: A Critical Natural Solution to Climate Change
Year-long professional learning community of 18 rural, K - 5th grade teachers and 2 ECHO educators

2 days meet-up at museum in summer
  1 day meet-up at museum in fall
  1 day meet-up at museum in spring
    2 virtual evening meetings
    1 class field trip to museum
    2 outreach lessons at school
    2 implementation support visits
      2 virtual classroom visits
      1 STEM Community Festival
Our Evolution

Relationships are term limited by a grant’s scope
Relationships are ongoing and change over time

We, the museum, decide what teachers “should” be teaching
Resource sharing is responsive to what teachers communicate they need

Most interactions are one offs with teachers or students
Focus on building learning communities over time (teachers/students/families)

This project was made possible in part by the Institute of Museum and Library Services
“And the access to ECHO educators, as resources. They care about each and every one of us and wanted to make sure that we have everything we needed to make sure that kids love STEM as much as they do.”
“I think one of the most powerful part was sharing ideas with each other. My cohort here at school and then, other teachers throughout the state—that piece was really powerful. It helped me to be thoughtful about observing kids interactions; observing kids’ interactions with each other, with materials, with the content.”
“Again, a lot of professional development that teachers get, there isn’t a lot that goes directly to the kids; it’s a lot of like, ‘Okay, we’re going to fill teacher’s brain with this information and then, teacher take it back to your classroom.’ Liz and Elizabeth built relationships with my students and were able to come into my classroom and actually run and do activities with my kids and see how what we were learning in the course transferred into the classroom and actually helped implement that…”
Network of peer communities across Maine and the Northeast where teachers, librarians, and informal educators collaborate to increase STEM learning pathways for youth in their local regions.
Measuring Success

Surveys and Interviews adapted from the Collaboration Factors Inventory from the Amherst H. Wilder Foundation.

- People involved in the network trust one another.
- The level of commitment among network partners is high.
- People in this network have a clear sense of their roles and responsibilities.
- There is a clear process for making decisions among partner organizations in this network.
- My ideas about what we want to accomplish seem to be the same as the ideas of others.
- People in this network communicate openly with one another.

Storytelling

- New and/or deepened relationships
- On the ground examples of connected learning
- Organizational shifts in practice/approach
Institutional Shifts

- Relationships first, always and beyond the scope of the grant
- Brokering out to other organizations
- Co-crafted a shared vision and support one another in making it uniquely relevant to their community
- Focusing on distributed models of leadership and funding to develop long term sustainability
Activity

List, draw or map out assets in your ecosystems.

These could be **personal assets** that you or other individuals bring or **community assets** such as organizations, physical spaces or physical resources that your community has access to.
### Community Assets

#### Associations / Potential Associations
Organizations, Initiatives, People, Programs, Projects, Businesses, Scout groups, After-school programs, 4-H, Libraries etc

#### Physical Spaces
Gardens, Parks, Forest/Nature Preserve, Trails, Lakes, Rivers, Coastal Access, Free meeting space, Libraries, Museums, Science Centers. Land Trusts, Historical societies, Lions club, VFW

### Personal Assets

#### Art/Music/Graphic Design

#### Accessibility

#### Storyboarding

#### Organizing Ideas/Processes

#### Outreach

#### Facilitation

#### Baking and Cooking

#### Conflict Resolution

#### Event/Trip Planning

#### Multilingual

#### Specific STEM Fields

#### Education Equity

#### Classroom Management

#### Music

#### Nature & Science Writing

#### Website Development

#### Data analysis/Coding

#### Social Media

#### Curriculum Development

#### Naturalist Equipment

#### Maker supplies

#### Big Picture Thinking

#### Idea Generation

#### Virtual Learning

#### Diverse Learning Needs

#### Listening

#### Empathy

#### Tactfulness

#### Writing Proposals

#### Teaching/Guiding Learning

#### Explaining

#### Mentoring

#### Community Science

#### Problem Solving

#### Designing Experiments

#### Creativity/Idea Generation

#### Note Taking

#### Social-Emotional Learning

#### Trauma Informed Ed

#### Volunteer Management and Development

#### Hands-On Activities
Reflection discussion at your table

- Did you have an aha moment during this activity or presentation?
- Was there an asset you hadn’t thought of or considered before?
- What steps might you take to bring the concepts of relationships, relevance and reciprocity back to your community?
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