What do Informal Educators Want?

The Science and Math Informal Learning Educator (SMILE) Pathway

Darrell Porcello, Joel Rosenberg, Scott Randol, Lawrence Hall of Science, UCB
Sherry Hsi, Erin Van Rheenen, The Exploratorium
Eric Marshall, Rebecca Reitz, New York Hall of Science
Keith Braafladt, Science Museum of Minnesota
Wendy Pollock, ASTC
What do Informal Educators Want?

The Science and Math Informal Learning Educator (SMILE) Pathway

LHS*
explOratorium

NYS Hall of Science

Science Museum of Minnesota

The Children's Museum of Houston

NSDL
THE NATIONAL SCIENCE DIGITAL LIBRARY
What do Informal Educators Want?

Overview

• The need
• What is Informal Education?
• Front-end survey snapshot.
• Where are we going?
• In SF Bay Area, eighty percent of K-5 teachers report spending less than 60 minutes each week on science. 16% of teachers are spending no time at all on science. (LHS-WestEd, 2008)

• During spring 2007, results on the 5th grade California Standards Test (CST) in Science indicate that only 37% of California students scored proficient or above.

• Less than half of the industrialized adult population of the U.S., Canada, and the U.S. has heard of nanotechnology. (Flagg, 2005), US Government R&D for nano: $0.5bil, 2001 to $1.4bil, 2007 (NNI).
Out of the classroom

Interactive Hands-on Fun Experiences Intermediates Rich Content
Front-End Survey

Detailed questionnaire to 500 Informal Science Education Leaders (directors + ed. directors)

• What they use
• What they want
• What they can contribute
100 respondents snapshot at 9/11/08

- Aquarium/Zoo
- Anthropology
- Art Museum
- Botanic Garden
- Children's Museum
- History Museum
- Natural History
- Planetarium
- Science Museum
- Other
100 respondents snapshot at 9/11/08
How familiar are you with the following online search and/or repositories for STEM learning and teaching resources?

<table>
<thead>
<tr>
<th>Repository</th>
<th>Don’t know about it</th>
<th>Heard about it, but never used it</th>
<th>Used it once or twice</th>
<th>Used it several times</th>
<th>Used it regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google (google.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Department of Education Website (ed.gov)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploratorium Website (exploratorium.edu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Science Digital Library (nsdl.org)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher’s Domain (teachersdomain.org)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teach Engineering (teachengineering.com)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle school portal (msteacher.org)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMETE (smete.org)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Bar chart showing the percentage of familiarity for each repository)
What STEM learning and teaching resources do you want… and what can you contribute? (likely % + very likely %)

<table>
<thead>
<tr>
<th>Resource type</th>
<th>% that wanted</th>
<th>% that could contribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print-out instructions for hands-on STEM activities</td>
<td>77%</td>
<td>33%</td>
</tr>
<tr>
<td>Outdoor activities and field guides</td>
<td>69%</td>
<td>33%</td>
</tr>
<tr>
<td>Videos of facilitated demonstrations</td>
<td>67%</td>
<td>20%</td>
</tr>
<tr>
<td>Engineering challenges</td>
<td>64%</td>
<td>14%</td>
</tr>
</tbody>
</table>

- Traditional print media over online media
- About 50% have a digital collection in some form
How important to you is the following basic information in selecting activities to use?

- Level of fun or engagement
- Subject, topic, curricular area
- Age/grade level
- Learning objectives
- Safety issues
- Cost of materials
- Suitability for a specific population
- How long activity will take
- Level of difficulty to prepare/deliver
- Set up time
- Cultural/calendar connections
- Multi-lingual (e.g., Spanish)
- Place-based activity
How important to you is the following rating and review information in selecting activities to use?

- Less important
- Middle
- More important

**Alignment to content standards**
- Inquiry-based
- Quality of the science/math/literacy content
- Reviewed by a scientist or other expert
- Peer review/recommendation
- Evaluation results
- Endorsed by NSTA
- Popularity of use
- Endorsed by ASTC
- ADA compliant
- Created with Universal Design for Learning
- How-to video included
How interested would you be in using the following services associated with learning and teaching resources from SMILE?

<table>
<thead>
<tr>
<th>Service</th>
<th>interested % + very interested %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Networking opportunities with other educators</td>
<td>69%</td>
</tr>
<tr>
<td>Video demonstrations of how-to make or do activities</td>
<td>65%</td>
</tr>
<tr>
<td>Evaluation and assessment associated with activities</td>
<td>63%</td>
</tr>
<tr>
<td>Online professional development workshops</td>
<td>61%</td>
</tr>
<tr>
<td>Ability to save and share a set of discovered activities</td>
<td>60%</td>
</tr>
</tbody>
</table>

• Professional Development and Networking
Lessons Learned...

• Traditional print media over online media
• About 50% have a digital collection in some form
• Professional Development and Networking
• Standards Alignment?
• Fun!

...next steps

• Finish the survey for Dec 5th Advisory Mtg.
• Modify SMILE Metadata if needed
• How does this impact technology?
Senate to Vote Today on the Bailout Plan

The New York Stock Exchange on Tuesday. The market rebounded, reversing a sell-off that shook Wall Street on Monday.
Darrell Porcello is in DC. 9 hours ago clear

What are you doing right now?

Darrell favored Star Trek VI: The Undiscovered Country Teaser Trailer on YouTube. 12:49am

Star Trek VI: The Undiscovered Country Teaser Trailer
Source: www.youtube.com

Add Comment
Your TimesPeople Mini-Feed

Darrell recommended an Article

Senate to Vote Today on the Bailout Plan
Senate leaders scheduled the vote after agreeing to add tax breaks and a higher limit for insured bank deposits in a bid to attract enough votes to reverse defeat in the House.

Darrell recommended an Article

McCain’s Suspension Bridge to Nowhere
John McCain may be the first presidential candidate in our history to risk wrecking the country even before being voted into the Oval Office.

Darrell recommended an Article

6 Months Later, Spitzer Is Contrite, Yes, but Sometimes Still Angry
Eliot Spitzer has faced an adjustment as he confronts life without the power he once wielded as New York governor.