

The Eavesdropping Evaluator

Evaluating Live Conversations on the Floor

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Moderator

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Acting on evaluation results

Sal Bell Alper, Manager of School Field Trips Programs, Exploratorium

Empowering explainers to evaluate their own practice

Carey Meier, Interpretation Program Development Manager, Children's Museum of Indianapolis.

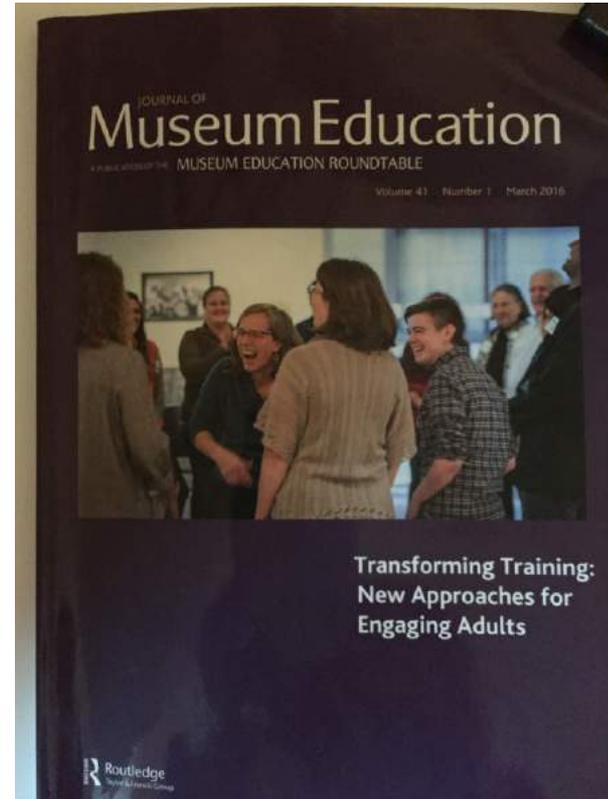
Integrating planning and evaluation

Format: Presentations, followed by Roundtables, ending with Q&A

The Eavesdropping Evaluator

Evaluating Live Conversations on the Floor

Considerations for evaluation of floor staff and volunteers



#1: Treat interpretive floor staff as the adult learners they are when training and evaluating them.

Research on the way adults learn show that “adults let their interests guide their learning, they are self-directed, meaning they prefer planning and directing their own learning.”

#2: Move from a top-down model of training and evaluating floor staff to a bottom-up model that allows the floor staff to share authority in their own learning and practice.

Make time and space for people to work together and learn from one another.

Hold floor staff and volunteers accountable to their goals.

Create opportunities for peer learning.

When it comes to the kinds of experiences your visitors have with floor staff and volunteers, consistency matters.

Standardize your training and evaluation to create a shared language across staff and volunteers.



BROOKLYN
BOTANIC
GARDEN

Kate Fermoile



The Discovery Garden is a place where kids of all ages explore habitats, uncover plant mysteries, and learn about garden wildlife through fun hands-on science exhibits and programs.



Discovery Docents

Volunteer docents facilitate drop in science and nature programs at Discovery Carts to 30,000 children, their families and teachers.

Topics include:

- Basic Botany
- Pollination
- Plant form and function
- Plant Evolution
- Seed Dispersion
- Soil and Compost



Evaluation Goals

RKA's Findings

WHO IS VISITING THE DISCOVERY GARDEN? 	Group Composition: 47% are adult-only groups, 54% are groups with children Age of Children: 79% of visiting children are less than 8 years old Ethnicity: 66% are Caucasian Language: 83% speak English Education Level: 77% have a college degree or higher Members: 40% are BGG members Previous Visitation: 61% are repeat visitors to the Discovery Garden Frequency of Visitation: 26% are frequent visitors to the Discovery Garden
WHAT DO GROUPS WITH CHILDREN DO WHEN THEY VISIT THE DISCOVERY GARDEN? 	Exhibits: 83% use exhibits Touch Plants: 79% touch plants Docents encourage visitors to touch plants Docent Carts: 68% use docent carts Field Cards: 27% use field guide cards Field Journals: 13% use field journals
HOW DO VISITORS INTERACT WITH EACH OTHER AND GARDEN VOLUNTEERS? 	Adults perceive their role in the Discovery Garden as: <ol style="list-style-type: none">allowing their child to explore naturefacilitator of exhibits and conversations Adults who perceive their role as facilitator of exhibits are more likely to use the docent carts Interaction with Docents: In families with young children, adults primarily interacted with docents In families with older children, children primarily interacted with docents Docents were generally adept at facilitating different kinds of interactions and following the lead of the group.
WHAT DO VISITORS PERCEIVE AS THEIR TAKE-AWAYS FROM A VISIT TO THE DISCOVERY GARDEN? 	Visitors perceive as greatest take-away Appreciation and Wonder of Nature Physically Exploring the Natural World Doing Science Learning Content Visitors perceive as lowest take-away
WHAT DIFFERENCE DO DOCENT CARTS MAKE IN THE EXPERIENCE? 	<ul style="list-style-type: none">The Discovery Garden attracts adult-only and family groups, but groups with children are much more likely to use a docent cartStatistical tests show that docent carts do not effect what visitors perceive as their take-awaysDocent's encouragement of touching plants seems related to visitors' pleasure in the physical engagement with the natural worldDocent training should more explicitly include messages around science.

Science Lessons for Docents



Addition of Science Experiments in the Garden



explOratorium

Sal Alper



At a Glance

“Our vision is a world where people think for themselves and can confidently ask questions, question answers, and understand the world around them.”

- >600 exhibits
- <1 million visitors
- 400+ staff
- \$50 million budget
- Almost 50 years old!



Field Trips

FT Audience-120,000

FT Experience

- Self guided/Free choice learning
- Orientation and Demos

Educators

- 23 FT Explainers
- Professional Development

High School Explainers



Evaluation

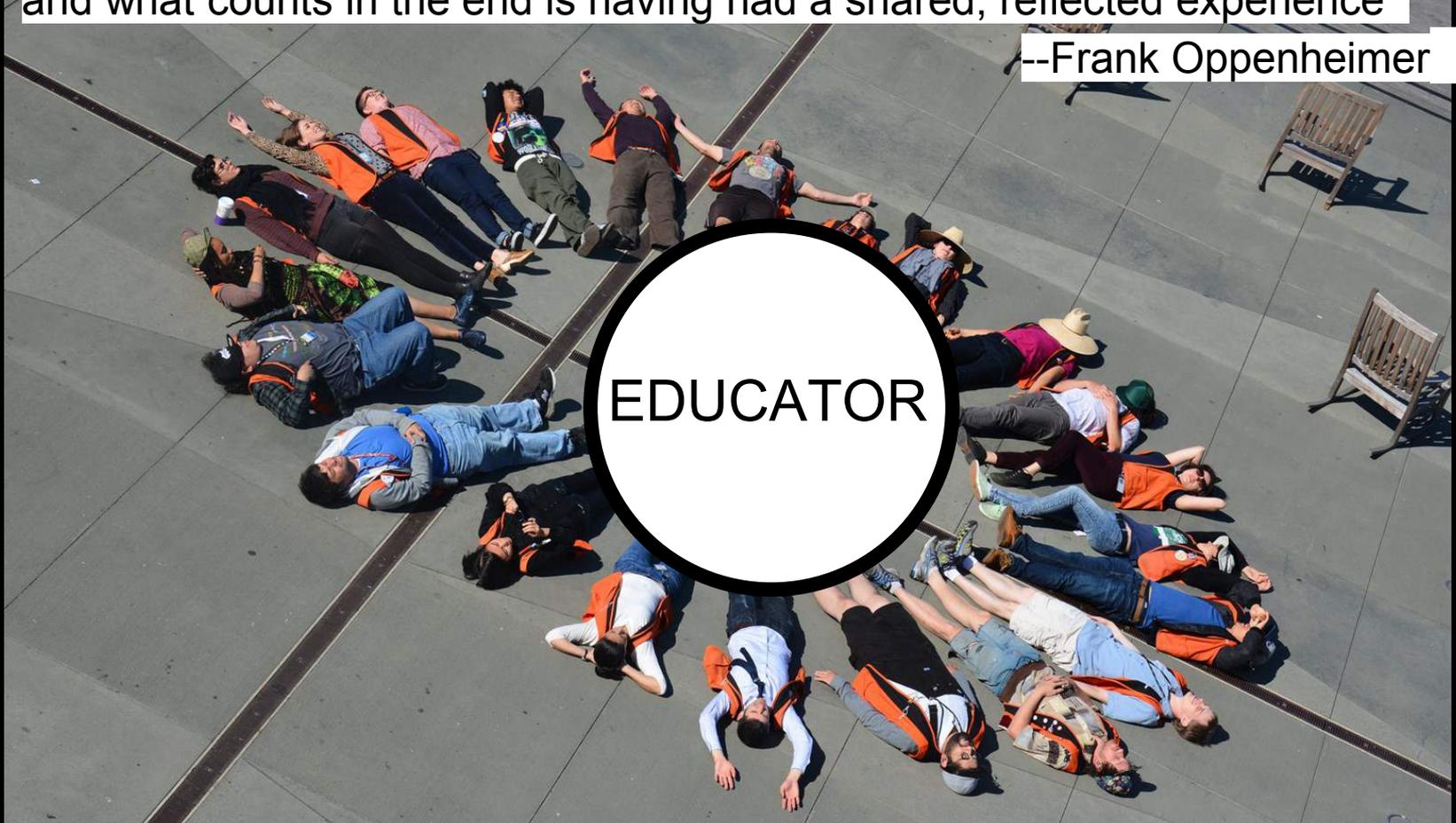
Visitor
Research and
Evaluation at
Exploratorium



Support Educators
in their own
evaluation and self
reflection.

the best way to learn is to teach, the best way to teach is to keep learning,
and what counts in the end is having had a shared, reflected experience

--Frank Oppenheimer

A high-angle photograph of a group of approximately 20 people lying on their backs in a large circle on a paved plaza. They are dressed in casual, outdoor-style clothing, including jackets, hats, and backpacks. In the center of the circle is a large white circle with a black border containing the word "EDUCATOR" in black, uppercase, sans-serif font. The plaza has a grid pattern of dark lines. In the background, two wooden chairs are visible on the right side.

EDUCATOR



**BUILDING and SUPPORTING
DIVERSE TEAM**



FEEDBACK and PROGRESS



EDUCATOR



**REFLECTION on TEACHING
and LEARNING**



**DESIGN for ENGAGEMENT
and INQUIRY**



Mission:

To create extraordinary learning experiences across the arts, sciences and humanities that have the power to transform the lives of children and families.

The Big Idea:

The work of NASA scientists plays a vital role in making human space exploration and research possible.



Exhibit / Space	Beyond Spaceship Earth: ISS
Program Title	Astronaut in Training: Life on the ISS
Program Description	Children and families will encounter an Astronaut in Training sharing details about the life and work in space and are invited to explore one of three topics of life in space.
Big Idea	The work of NASA scientists plays a vital role in making human space exploration and research possible.
Target Audience	Children ages 8 and up and their families
Goals	Children and families will take a closer look at life aboard the space station.
Objectives	Families will hear introductory information about the International Space Station. Families will see and touch objects as they relate to life on The Space Station (such as food, hygiene kit, space tools, astronaut suit gloves or helmet). Families will explore how life is different in space than on Earth.
Family Learning Behaviors	FF. Family members child compare something to themselves, other family members or other objects. <i>Such as: How is drinking in space different than when you take a drink on earth? Why do you wear different clothing in the winter than in the summer?</i> DD. Family member asks or answers open ended questions that encourage explanations. <i>Such as: "Why do you think they have to use this type of straw? How do you think the astronaut can breathe in the space suit? Why can't they just lift weights?"</i>
Metric	➤ Target Attendance for Astronaut in Training is 20 people per 30 minutes. Successfully fosters family learning by accomplishing the intended family learning behaviors defined on the one sheet. FF. Family members child compare something to themselves, other family members or other objects will occur at a rate of 80% DD. Family member asks or answers open ended questions that encourage explanations will occur at a rate of 85%
Strategies	Facilitator will welcome families to the International Space Station. Facilitator will share a brief explanation of what the Space Station is. Facilitator will invite families to join in training. Facilitator will use props and materials to make observations and connections. Facilitator will encourage families to share how they do things on Earth (based on the themes from eating, to bathing to fixing a roof panel coming loose). Facilitator will encourage families to explore how things are different in micro-gravity. Facilitator will use props and materials to explore how things are the similar and/or different in space. Facilitator will encourage guests to explore another part of the Space Station to continue training. <i>Longer/extended interactions progress to next level based on time and space availability:</i> Facilitator will invite family to participate in a problem solving activity together. Facilitator will encourage families to work together and share what they completed.

Mission: To create extraordinary learning experiences across the arts, sciences, and humanities that have the power to transform the lives of children and families.

Program/Activity Title: Astronaut in Training- Life on the ISS

Target Audience: Children ages 8 and up and their families

Exhibit /Space: Beyond Spaceship Earth: The ISS

Created By: Carey Meier

Implementation Date: June 25, 2016

Staff Needed: 1

Big Idea:
The work of NASA scientists plays a vital role in making human space exploration and research possible.

Goals:
Children and families will be invited to take a closer look at life aboard the space station.

Objectives:

- Families will hear an introduction to what the International Space Station is.
- Families will see and touch objects as they relate to life on The Space Station (such as food, hygiene kit.
- Families will explore how life is different in space than on Earth.

Family Learning Behaviors:

FF. Family members' child compares something to themselves, other family members, or other objects.
Such as: How is drinking in space different than when you take a drink on earth? Why do you wear different clothing in the winter than in the summer?

DD. Family member asks or answers open ended questions that encourage explanations.
Such as: "Why do you think they have to use this type of straw? How do you think the astronaut can breathe in the space suit? Why can't they just lift weights?"

Ideas for Initiating Interaction:



AIT Food Up Close Observation Tool Staff: _____ ID: _____

Visitors in Interacted space:
 Slow- Under 10 visitors
 Moderate- Under 20 visitors
 Busy- Under 30 visitors
 Peak- 30+ visitors

Length: _____
 Location: _____
 started on time

FF. Family members child compares something to themselves, other family members or other objects. (food in space vs. at home, types of meals, rituals of eating, etc)

Specific example(s) of FF: _____

Observed Group Composition

	0-2	3-5	6-9	10-14	15-17	Adult
Male						
Female						

Introduction:
 Facilitator welcomes families to the ISS.
 Facilitator introduces self as an Astronaut in Training and invite visitors to join them.
 Facilitator shares a brief explanation of what the ISS is.

Microgravity Orbit P. Family member contributes information or asks a question during program.
 Space lab Living in space

Specific example(s) of P: _____

Program:
 Families hear about/discuss:
 planning meals for space developing food for space
 how food gets to space food storage

Activity steps (what is discussed/problem-solving):
 ID perforable ID preserved Velcro/magnets for tray
 different food options how food is prepared for eating
 food rules (ex. No bread) country-specific foods

Adult interactions (from staff and adult):
 Staff invites adult(s) to participate
 Adult actively participates with child.
 Adult stands back and is watching and talking.
 Adult declines to participate in any way and disengages from program.
 Other (Describe): _____

Staff uses intended props:
 Rehydrated Other most used Natural form

Staff will encourage guests to explore other parts of ISS.

Other:
 Staff mentions STEM careers beyond "engineer" and "scientist."
 Staff mentions future missions where robots will be needed (Mars, etc)

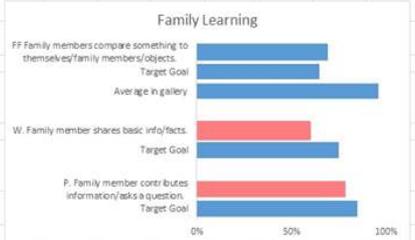
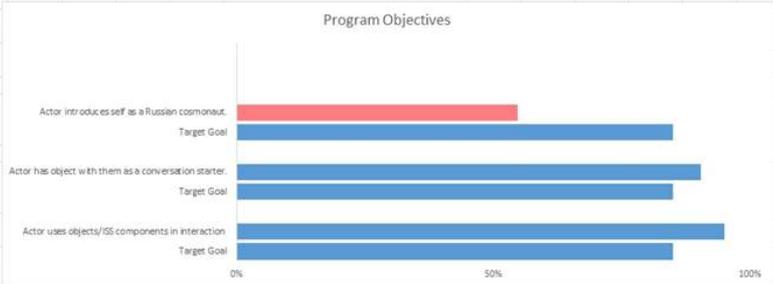
Staff is encouraging adult participation throughout interaction. Describe what is or is not happening: _____

Notes: _____

Date _____ Day of Week _____ Time _____ Data Collector _____

Describe Facilitator Strategies During Program:		Strongly Agree	Somewhat Agree	Disagree	Notes:
Approachability:	Costume appropriate, program supplies and signage correct, smiling/welcoming, etc.				
Initiation:	Strong use of voice, active and not passive, use of appropriate energy and character for program				
Questioning Methods:	Strong use of objects, Bloom's taxonomy questioning approach throughout program				
Adult Engagement:	Direct address, indirect through child, tasks, family discussion, etc.				
Extended and Deepened Learning:	Guest-driven approach, finding connections to other exhibits and experiences outside the museum				
Adaptation (only if applicable):	Present and flexible for younger guests, larger groups etc.				
Adult participation level (circle)	To what extent is the adult participating in the program?	Actively Participates &	standing back and watching /listening	Refusal to Participate	Notes regarding adult behavior

Total Observations	42		
Average Length	3.8		
Interactions under 3 minutes	38%	16	
Interactions over 5 minutes	19%	8	
How often did the program start late?	23%	7	32
Actor welcomes/greets families to the ISS	69%	29	
Facilitator will introduces themselves (Russian cosmonaut).	55%	23	
Actor has at least one object with them as a conversation starter.	90%	38	
Most often used object(s):	33%	hand grip	
Actor uses objects or ISS components as part of their interaction with visitors	95%	40	
P. Family member contributes information or asks a question during program.	79%	33	85
W. Family member shares basic info/facts.	60%	25	75
FF Family members compare something to themselves, other family members, or other objects.	69%	29	60
Staff invites adult(s) to participate	52%	22	
Adult actively participates with child.	55%	23	
Adult stands back and is watching and talking.	26%	11	
Staff is encouraging adult participate throughout interaction.	43%	18	
Gravity/orientation on the ISS	52%	22	
STEM careers (in space or on the	5%	2	
Exercising in space	31%	13	
Sleeping in space	21%	9	
Eating in space	38%	16	
Total Observations	-34.4		
Total Observations	-34.4		
Average Length	-72.6		
Becoming a cosmonaut/backstory	10%	4	
Working with other countries on ISS	7%	3	
Daily routine	12%	5	
Actor creates dialog around WHY topic is important or different	71%	30	



Target Goal	85%
P. Family	79%
Target Goal	75%
W. Family	60%
Average	96%
Target Goal	65%
FF Family	69%



ROUNDTABLE DISCUSSIONS

Kate, Brooklyn Botanic Garden

How do you act upon the information gathered through a formal evaluation with docents/volunteers?

Sal, Exploratorium

How do you support Explainers/staff educators in being self reflective in evaluating their interactions with visitors?

Carey, Children's Museum of Indianapolis

How can you plan for evaluation from the beginning of the program development process? What tools can you use?