Parent Engagement in Play and Making

ACM 2019
What does “parent engagement” look like?
Engaging Parents in Play and Making

Natalie Bortoli
V.P. Programming & Experience Development
“The adult role is complex and the spectrum of roles that adults play in the lives of children is wide-ranging. It includes not only active, participatory roles, but observational and reflective roles as well.”

“The roles include: teacher, contributor, partner, playmate, collaborator, co-learner, independent learner, observer, provider and nurturer.”
Role of the Adult

“Children and adults learn from each other as well as through their own experiences and exploration. Museum learning is, therefore, **dialogical as well as hands on.**”

“Thus, CCM strives to take action to design experiences that foster adult-child interaction and facilitate adult-child conversation.”
Strategies for Engaging Parents in Play and Making

- Structuring Activities for Challenge
- Utilizing Orientations
- Inviting Conversation and Reflection
TRAEL
Tinkering
Reflection
And
Engineering
Learning

Chicago Children’s Museum 2019
Strategy 1: Structuring Activities for Challenge
How open/specific is the challenge?

- Open ended: Make Something
- Specific: Make Something that Does Something (rolls, flies, etc.)
“Welcome to Tinkering Lab. Make something. Try a tool.”
Program 2: Make It Roll

“We’re making things that roll. You can test your vehicle on a ramp.”
Families’ Talk

<table>
<thead>
<tr>
<th>Engineering Design Process Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
</tr>
<tr>
<td>Exploring Materials</td>
</tr>
<tr>
<td>Examining Others’ Creations</td>
</tr>
<tr>
<td>Demonstrating</td>
</tr>
<tr>
<td>Showing One’s Ideas</td>
</tr>
<tr>
<td>Planning</td>
</tr>
<tr>
<td>Prediction</td>
</tr>
<tr>
<td>Explanation</td>
</tr>
<tr>
<td>Testing</td>
</tr>
<tr>
<td>Redesigning</td>
</tr>
</tbody>
</table>

“See if it will roll down the ramp.”
Engineering Practice Talk

- I took my car to the ramp to test it.
- We couldn’t find a piece that was long enough so we had to saw instead.
- We had to fix the wheel because it wasn’t rolling.

Program X Creation interaction $F(1, 244) = 5.14, p < .05$
Strategy 2: Utilizing Orientations

How can a hands-on introduction prepare adults and children to engage in engineering?

Chicago Children's Museum 2019
Activating Knowledge: Wheels and Axels
Can you tell me which ones roll?
The more that parents talk about STEM during tinkering, the more their children are able to report they learned about STEM afterward.
Strategy 3: Inviting Reflection

What we did today is I made this rolling thing.
Story Hub: The Mini Movie Memory Maker
Talk About Your Experience

“The most important part of your movie will be your conversation.”

Chicago Children's Museum 2019
Specific Prompt for Adults

Adults, you can help by asking questions or adding your own memories.

Chicago Children’s Museum 2019
What was the point of the Tinkering Lab today? What were you trying to do?
Supporting Educator-Caregiver-Child Interactions

Annie McNamara, PhD
Children’s Museum of Pittsburgh
Relationships are the ‘active ingredients’ of the environment’s influence on children.
Interactions are the building blocks of relationships
“Aha, I get it now.”
How do educator-child interactions differ based on caregiver presence?
RECIPROCITY

- two-way “serve and return”

Not Present

Present
  Not Interacting

Present
  Interacting
How do educator-child interactions differ based on caregiver presence?

Reciprocity

<table>
<thead>
<tr>
<th>Condition</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Present, Not Interacting</td>
<td>3.19</td>
</tr>
<tr>
<td>Present, Not Interacting</td>
<td>3.24</td>
</tr>
<tr>
<td>Present, Interacting</td>
<td>3.08</td>
</tr>
</tbody>
</table>

$F(2, 195)=3.08, p<0.05$
How can we support more educator-caregiver-child interactions?
SIMPLE INTERACTIONS

A STRENGTHS-BASED, PRACTICE-BASED, AND COMMUNITY-BASED APPROACH TO IMPROVE PROGRAM QUALITY WITH HELPERS WHO SERVE CHILDREN, YOUTH, AND FAMILIES.
Relational Practices
(all-the-time practices: connection, reciprocity, inclusion opportunities to learn)

Shapers
(e.g., age of children, type of parent, etc.)

Techniques
(context-dependent practices)

Facilitated Making
Facilitation Techniques
Facilitation Techniques

- Sitting next to a child
- Asking questions
- Letting the child lead
“Aha, I get it now.”
Thank you!
Annie McNamara, PhD
cmpresearch@pittsburghkids.org
Parents as learners in making and tinkering programs

Susan Letourneau, Katherine Culp, David Wells

New York Hall of Science

ACM 2019
Parent engagement in making

- Research has shown the benefits of making for many aspects of children’s STEM learning (see Vossoughi & Bevan, 2014, for a review)

- During family visits to museum maker spaces, caregivers play a critical role in supporting children’s learning. (Brahms, 2014; Brahms & Crowley, 2016)

- But we know relatively little about caregivers as learners — How do parents and caregivers engage in maker programs and interpret their families’ experiences?
Theoretical framework

- **Informal learning:** Learning is a sociocultural process, with caregivers supporting children’s learning through shared experiences. (Crowley & Jacobs, 2000; Falk & Dierking, 2000; Puchner, Rapoport, & Gaskins, 2001, Zimmerman, Reeve, & Bell, 2010)

- **Community psychology:** Physical and social settings influence behavior at individual, family, and community levels. (Seidman & Capella, 2017; Gomez & Yoshikawa, 2017)

- **Exhibit design:** Affordances of learning environments shape how people interact and learn in these spaces. (Allen, 2004; Borun, Chambers, & Dritsas, 1997; Dancstep & Sindorf, 2018; Falk & Storksdieck, 2005; Humphrey & Gutwill, 2005)
Research Questions

- What qualities of making and tinkering programs support caregivers as facilitators of children’s learning, and as learners in their own right?

- How do caregivers describe what they learn from these programs?
Methods

- Observations and follow-up interviews
- Drop-in making and tinkering programs: woodworking, virtual reality, knitting/crochet, fashion design, circuit blocks, etc.
- Qualitative analysis: Parents’ involvement; Physical environment, tools, materials; Social interactions with facilitators
Results: How were caregivers involved?

- Facilitating children’s learning (38%)
- Observing children (30%)
- Making (21%)
- Other (11%)
Results:

- Physical setting influenced families’ overall participation.
  - Open sight-lines (rather than enclosed spaces)
  - Proximity to other exhibits/programs
### Impact of physical and social setting

<table>
<thead>
<tr>
<th></th>
<th>Observing</th>
<th>Facilitating</th>
<th>Making</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arrangement of materials &amp; seating</strong></td>
<td>Individual stations</td>
<td>Individual or communal seating</td>
<td>Communal seating with shared pools of materials</td>
</tr>
<tr>
<td><strong>Novelty vs. Familiarity of tools &amp; materials</strong></td>
<td>Either familiar or novel</td>
<td>Familiar</td>
<td>Novel</td>
</tr>
<tr>
<td><strong>Facilitation</strong></td>
<td>Directed at children</td>
<td>Directed at adults</td>
<td>Directed at both adults and children</td>
</tr>
</tbody>
</table>
Caregivers’ descriptions of their own learning

- **Observing**: Noticing children’s interests, abilities, or approach to a new experience.
  “I like watching their brains work. You can see how they think while you’re watching them.”

- **Facilitating**: Learning from facilitators, getting ideas to try at home.
  “Now I know that you can teach kids about this kind of stuff, because I wouldn’t have known how to do that.”

- **Making**: Process of making something, building creativity, pursuing their interests.
  “Tapping into my inner child and creating stuff. I’m not often able to do that because I’m always working a lot.”
Conclusions

- Caregivers recognize their own learning in making & tinkering programs.
- Design and facilitation influenced how caregivers were involved.
- What are the learning goals for adults in family groups?
- Can the same learning goals be reached in different ways for different interaction styles?
Acknowledgments

Project team: David Wells, Annalise Phillips, Danny Kirk, Samantha Tumolo, Cesar Villar
Project advisors: Jill Denner, Paula Hooper, Vera Michalchik, Anne Sekula

For more information, contact: sletourneau@nysci.org

This material is based upon work supported by the National Science Foundation under Grant No. 1723640. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
Considering children and adults in *PlaySpace*

Robin Meisner
Senior Director, Child Development
Meisner@BostonChildrensMuseum.org
The *PlaySpace* experience
Do we want parents/caregivers to play with their kids?

Questions to consider from Jeanne Vergeront (2018)...

- Children of what age?
- What kind of play?
- What’s the context?
- Can adults really join play without changing it?
- Whose play is it?
- Who gets to decide?
- What roles should adults take?


ACM | May 10, 2019
What research says about responsive relationships

From the Center on the Developing Child…

- Research indicates that early, trusting relationships between children and their primary caregivers are strong predictors of child outcomes.

- Shared experiences (playing together, singing together, talking together, etc.) during infancy and toddlerhood form the foundation for children’s development across all domains (cognitive, social, emotional, and physical).

- Adults model curiosity, focus, and playful learning by engaging in both child- and adult-directed play and exploration.

- Strong adult-child relationships allow children to move from dependence to independence.

For example, see: Center on the Developing Child at Harvard University (2016). From Best Practices to Breakthrough Impacts: A Science-Based Approach to Building a More Promising Future for Young Children and Families. http://www.developingchild.harvard.edu
What play (and exploration) look like in the early years

From Yogman et al. (2018)...

- **Earliest play**... based on caregiver–infant interaction (serve-and-return) - promotes self-regulation, impulse control, understanding interactions, and the development of language

- **By 9 months**... repetitive games help infants predict what is about to happen, enhance the ability to solicit social stimulation

- **By 12 months**... experiences are laying the foundation for ongoing development of social skills

- **During the second year**... toddlers continue exploring their world, develop the beginnings of self-awareness, and use their adults as a home base

- **As children become independent**... their ability to socially self-regulate becomes apparent - focusing their attention and solving problems efficiently, being less impulsive, and better managing the stress of emotions

- **With the development of language and symbolic functioning**... pretend play and moving towards dramatic play become more prominent

What play (and exploration) look like in the early years

From Yogman et al. (2018)...

- **Earliest play**... based on caregiver–infant interaction (serve-and-return) - promotes self-regulation, impulse control, understanding interactions, and the ability to solicit social stimulation

- **By 9 months**... repetitive games help in the development of language

- **By 12 months**... experiences are laying the foundation for imaginative play

- **During the second year**... toddlers continue to develop language, self-awareness, and use their adults as a home base

- **As children become independent**... their ability to socially self-regulate becomes stronger, allowing for sustained attention and solving problems efficiently, being less impulsive, and better managing the stress of separations

- **With the development of language and symbolic functioning**... pretend play and moving towards dramatic play become more prominent

What parents say about their own engagement

In a 2016 report from Zero to Three, roughly half of all current parents see themselves as “more affectionate and playful and feel that they are more engaged than their parents were…”

- 49% say they participate more in play
- 49% say they spend more time listening and talking with their children
- 47% say they read to their children more
- 48% say they have more fun together as a family
- Also, many parents don’t quite know when important milestones happen, but they want to learn more

Revisiting the question...

Do we want parents/caregivers to play with their kids in *PlaySpace*?

Yes… and no

**Children and adults** - Explore, discover, connect, and wonder

**Children** - Explore on their own

**Adults** - Step back and observe - to be responsive, supportive, and playful
Informing *PlaySpace* development and design

**Incorporating *PlaySpace* history**

- Drawing on over 40 years of *PlaySpace* history - lessons learned from Museum staff and visitors
- Incorporating the growing body of research on child development, but also building on our own observations and practitioner knowledge
Informing *PlaySpace* development and design

**Using field-wide knowledge**

- Talking with advisors from a range of fields to identify key areas for child development and supporting caregivers today
- Drawing on existing tools for exhibit development and design, such as the Adult Child Interaction Inventory, and considering how they might be adapted for a younger audience

**Checklist of exhibit design elements from the Adult Child Interaction Inventory**

- Wide variety of materials available
- Easy for adult to figure out
- Easy for child to figure out
- Open space with clear sight lines
- Controlled exits
- Plenty of materials available
- Seating
- Noise level/Sound/Acoustics
- Label: Text
- Labels: Pictures or photographs
- Includes tables/chairs designed for adults
- Presence of museum staff

Informing *PlaySpace* development and design

Conducting front-end evaluation

- Who uses *PlaySpace*? How is it being used? By caregivers, by children, by staff, by researchers? visitor survey data, observations, area counts, talk-backs

- What does engagement look like in *PlaySpace*, and in the different areas within the exhibit? observations (inc. *PlaySpace* adult engagement indicators), tracking & timing, front-line staff feedback
**PlaySpace is...**

**Where...**
- Children 3 and under can learn about themselves and the world around them
- Adults can learn about their young children and the importance of early experiences
- Together, adults and young children can build relationships and experience delight in playing together

**With experiences that provide time, space, and support...**
- For children to practice developing skills
- For adults to relax, observe, and celebrate their children and their development
- For adults and children to build trusting relationships
Balancing independence and shared experiences

Encouraging independence

Encouraging shared play & exploration
Encouraging independence - gross motor exploration

Experience goals

Kids:
- Explore a varied landscape with opportunities for healthy physical risk taking
- Practice pushing their own physical boundaries at their own pace and comfort level
- Have time and space to play and explore on their own, including in spaces that feel slightly hidden from adult view

Adults:
- Notice and appreciate what children are capable of when afforded opportunities for physical challenge
- Be careful observers and supporters of children’s healthy risk taking
- Be in a state of relaxed engagement
Encouraging independence - prototyping components

1. Too intimidating, lacking reason
2. More willing to try, still lacking reason
3. Inviting, still not a strong reason
4. Inviting, purposeful (and encourages spatial language)
Encouraging independence - some lessons learned

- **Providing just enough challenge**
  - Don’t go too easy (explore what that means for the littles)
  - Offer pairs of easier and more challenging ways up/down
  - Make challenging features obvious
  - Include features that require more focus and less speed
  - Provide easy loops to check back in with adults

- **Provide more than enough comfort for adults**
  - Provide good sightlines into the structure
  - Include outside paths to follow kids around the structure
  - Limit depth of structure
  - Offer at least one simple way up/down for adults
  - Put most challenging features right up front
  - Provide seating not too far from structure
Encouraging shared exploration - STEM activities

Experience goals

Kids:

● Explore intriguing phenomena to discover how things work and how they can be manipulated
● Practice developing thinking and motor skills
● Make choices about the loose parts they choose and how they use them

Adults:

● Notice and appreciate that children are learning as they explore everyday phenomena
● Support children by following their lead, listening, observing, responding
● Support exploration through joint attention, language, and physical and emotional support
Encouraging shared exploration - prototyping activities

Mutually intriguing activities, with round tables

A little tricky, with obvious opportunities for talk

Concepts just outside their grasp, that also illustrate development
Broader considerations towards independence and shared experiences

- Trained staff
- Controlled exits
- Walls that progress from low to high, from center to edges
- Walls only as high as they have to be
- Sightlines to survey from the entry and center
- Seating for sitting back
- Seating for engaging together
- Areas and nooks for shared focus
- “Hidden” spots for kids
- Basic needs met
- Tools and resources (including labels) to come...
Discussion:

• How can museum environments and programs support caregivers in different roles?

• How can we make space for multiple roles at the same time?

Session Resource List: https://tinyurl.com/y4thkg4n