Findings and Implications of the Children’s Museum Research Network

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History of the CMRN

The Learning Value of Children’s Museums: Building a Field-Wide Research Agenda

A Landscape Review

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Travis Wynderhart, MA
University of Washington

Learning Value of Children’s Museum Research Agenda Symposium
September 10-11, 2013

Participants were asked to read the landscape review prior to the meeting. Over the two days, the group worked to generate a draft of a field-wide research agenda. Follow up webinars and sessions at Interactivity provided more feedback to support the development of the research agenda.

Supported by a grant from the Institute for Museum and Library Services
The Research Agenda

The agenda “identifies and prioritizes the evidence most needed by the field to articulate and demonstrate the distinct learning impacts of children’s museums”. Broad categories include:

• Characteristics of Children’s Museums
• Audience
• Learning Landscape

http://www.childrensmuseums.org/images/learningvalueresearchagenda.pdf)
Children’s Museum Research Network

- DuPage Children’s Museum
- Thanksgiving Point Institute
- Minnesota Children’s Museum
- Children’s Museum of Pittsburgh
- The Children’s Museum of Indianapolis
- The Magic House, St. Louis Children’s Museum
- Children’s Museum of Tacoma
- Boston Children’s Museum
- Providence Children’s Museum
- Children’s Museum of Houston
- The Children's Museum of Denver at Marsico Campus
- Glazer Children's Museum
- Canadian Children's Museum (Canadian Museum of History)
- Port Discovery Children's Museum
- Children's Museum of Sonoma County

Made possible with a grant from
How does the CMRN operate?

Face to face working meetings:
- Meetings at Interactivity
- Meetings at the University of Washington/Minnesota Children’s Museum (2-day working meetings)

Monthly phone meetings

Information sharing and discussion through Groupsite

Phone and Skype meetings as needed for individual/small group meetings

Co-writing through Google docs

Individual meetings between partner museums
The CMRN designed a research study that looked specifically at institutional learning frameworks. Three research questions led the study:

1. What major vocabularies do these frameworks share? Where do they diverge?
2. What constructs do children’s museums use and prioritize in their learning frameworks?
3. What learning theories do these frameworks implicitly and explicitly reflect or endorse?

Five museums from the CMRN provided their learning frameworks and participated in group interviews.
What is a learning framework?

A statement of “a museum’s most important ideas about learning and learners.”

- Provides a foundation for all educational activities.
- Guides planning and evaluation of activities.
- Not just for museum educators!

What is a learning framework?

- Clarifies how the museum understands learning.
- Aligns with the mission, vision, and goals.
- States the value of the museum to the community or learner by articulating what the museum values.
- It is a process, an ongoing conversation about purpose, audience, activities, and outcomes.
SIG#1 - The Nature of Learning Frameworks in Children’s Museums

Three research questions led the study. Quick recap:

1. Shared and divergent vocabulary
2. Learning theories, either implicitly or explicitly, reflected
3. Constructs used and prioritized

Thematic analysis of documents provided by the five participating museums and group interviews with staff at each museum about ideas related to learning frameworks:

- Origin and development of the learning framework,
- Institutional views on learning and learning outcomes,
- How learning is measured, and
- Applicability to other museums or settings
Six major themes were identified.
There is a need to identify intended outcomes for CMs.

Museums need to bridge the dichotomy between defining outcomes and remaining open-ended.

Measuring long-term impact presents challenges.
SIG#1 - The Nature of Learning Frameworks in Children’s Museums

- All constructs identified were grounded in social, emotional, cognitive, and physical/developmental theory.
- Museums found it difficult to parse constructs.
- There is a need for a common vocabulary.
- What some CMs call outcomes might be constructs for others.
The CMRN’s review of five museums’ learning frameworks revealed:

- Each reflected the institution's values and beliefs about learning.
- Grounded in a specific context.
- Just one perspective, not the only or the best perspective.
SIG#2 - Exploration of play within children’s museums

The Problem of Play
Play is a central, defining concept for many children’s museums, but it is also problematic.
- It is not well-understood, despite existing research.
- It is undervalued at a policy level.
- It is difficult to define.

Although play is a defining characteristic of children’s museum experiences, even the small group of museums within the research network took very different positions on play — play was central for some, peripheral for others.

Our Question
How do children’s museums position themselves and their work around play?
Study methods

Included **49 museums** across the United States
Sizes, locations, budgets closely matched to ACM membership

Semi-structured telephone interviews with **senior staff**

**Sample interview questions**

- Is play in your museum’s mission statement? What is the role of play in your museum’s mission?
- How important is play to your museum’s mission (on a scale of 1 to 7)?
- When was the last time you were part of a conversation among staff at your museum that was even loosely related to play?
- Does your museum have what you would consider to be a definition of play? Is this definition written down?
- How would you describe the relationship between play and learning?
- What are the benefits of play?
Visibility of play in mission statements

Majority of museums said **play was part of their mission**
- “Play” is in mission (57%)
- “Play” is in other statement (14%)
- Play is implied (31%)

Majority said **play was very important** to their mission.
On a scale of 1 (not at all important) to 7 (extremely important)
- 7: 84%
- 6: 6%
- 5: 10%
Role of play in mission statements

- **Play as learning process**: 71%
- **Institutional culture of play**: 43%
- **Providing space for play**: 35%
- **Socio-emotional development process**: 14%
- **Raising awareness of play's importance**: 10%
- **Other**: 8%

Exploration, discovery, imagination, engagement, learning, inquiry

"Part of everything we do," a "way of doing things," all programs/exhibits “play focused”

Play as outcome, exhibit design and museum atmosphere foster play, provides welcoming space for families

Cooperation, collaboration, conversation, peer-to-peer and intergenerational

Advocate for play's significance to museum staff, board, and visitors
Definitions of play

29% of museums had definitions of play used internally (14 of 49)
10% had written definitions (5 of 49)

Nature of definitions (written or not)

- Play as a learning process: 41%
- Characteristics of play: 33%
- Museums practices support play: 22%
- Types of play: 14%
- Tagine, value statement: 12%
- Benefits of play: 6%
- Other: 4%

Engagement, exploration, discovery
Fun, intrinsically motivated, free-choice
Providing space to play; play is what the museum provides
Creative play, object play
Play is crucial to learning, play with purpose
Social growth, skill development
Relationship between play and learning

- Play is the process through which we learn: 71%
- Play is both a process and an outcome: 16%
- Play and learning are different things: 4%
- Other: 0%
Benefits of play

- Social development: 67%
- Emotional development: 59%
- Cognitive development: 65%
- Physical development: 24%
- Self-direction: 16%
- Other: 14%

Communication, cooperation, family bonding and relationships
Self-confidence, self-control, comfort, feelings
Content knowledge, critical thinking, creative thinking
Motor skills, fitness
Ownership of own play and learning, child-driven, exploration

Interactivity | May 10, 2019
Follow-up study

30 respondents, a subset of those who were interviewed (conducted via Survey Monkey)

**Prompting reflection**

57% reported speaking with a co-worker about play and their museum after participating in the interview:

- The need for a more explicit position on play and its value
- A heightened mindfulness of play as a result of interview participation—how they think and talk about it, how it relates to their mission, what they currently do and things they may wish to change

58% reported doing something *other than talking* to co-workers:

- Seeking out more information on play, using journals, blogs, websites, etc. (50%)
- Individual reflective thinking about their institutions position on play (31%)
- Reviewing, updating, and/or sharing their own institutional documents (25%)
Implications

This study showed that the children’s museums represented here…

- Strongly value play as important to their missions
- Consider play to be a mechanism for learning and a way of supporting multiple facets of children’s development

This view closely aligns with existing research on play and its value.

Nevertheless, children’s museums seldom defined play or how it leads to learning in a formal way within their institutions.
Implications

There is a need for children’s museums to...

- Discuss the aspects of play that they support or emphasize
- Articulate how they believe those experiences contribute to different forms of learning

Such conversations would help museums...

- Evaluate and argue for their unique learning value
- Advocate more effectively for the value of play for the individuals and communities they serve
Study 3: Caregivers Understanding of Learning in Children’s Museums

• What do parents/caregivers learn about their children from their children's museum experience?
• What is it about the children's museum experience that parents/caregivers feel contributes to that learning?
### Where the responses came from

<table>
<thead>
<tr>
<th>Museum</th>
<th>Number of Participants</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>DuPage Children's Museum</td>
<td>62</td>
<td>28%</td>
</tr>
<tr>
<td>Children's Museum of Pittsburgh</td>
<td>42</td>
<td>19%</td>
</tr>
<tr>
<td>Thanksgiving Point</td>
<td>32</td>
<td>14%</td>
</tr>
<tr>
<td>Minnesota Children's Museum</td>
<td>31</td>
<td>14%</td>
</tr>
<tr>
<td>The Magic House, St. Louis Children's Museum</td>
<td>21</td>
<td>9%</td>
</tr>
<tr>
<td>Children's Museum of Indianapolis</td>
<td>19</td>
<td>9%</td>
</tr>
<tr>
<td>Children's Museum of Tacoma</td>
<td>9</td>
<td>4%</td>
</tr>
<tr>
<td>Boston Children's Museum</td>
<td>7</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>223</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Who the responses came from

Adults visiting a participating Children’s Museum with at least one child. Sample was comprised of:

- More women than men (90% compared to 10%).
- Approximately equal proportions of museum members and non-members.
- Most of the respondents were between the ages of 30 and 39 (57%).
Why did you go to the Children's Museum?

- An aspect of the child’s experience: 26%
- Convenience: 26%
- Socialize/Interact with others: 19%
- Child’s preference/choice: 17%
- Something specific the museum offers: 14%
- Special occasion: 6%
- Adult’s preference/choice: 2%

3 additional categories each had 2% or fewer responses
During your visit, did you discover anything about your child(ren)?

<table>
<thead>
<tr>
<th>I discovered something about…</th>
<th>Percent responding “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>What my child(ren) is/are interested in or not interested in.</td>
<td>83%</td>
</tr>
<tr>
<td>How my child(ren) interact(s) with others.</td>
<td>70%</td>
</tr>
<tr>
<td>What my child(ren) is/are good at or not good at.</td>
<td>67%</td>
</tr>
<tr>
<td>How my child(ren) solve(s) problems</td>
<td>65%</td>
</tr>
<tr>
<td>How my child(ren) think(s).</td>
<td>64%</td>
</tr>
<tr>
<td>My relationship with my child(ren).</td>
<td>55%</td>
</tr>
<tr>
<td>How my child(ren) regulate(s) his/her/their emotions.</td>
<td>46%</td>
</tr>
</tbody>
</table>
Do you think you observed anything about how your child(ren) learn?

- Yes, 70%
- No, 12%
- Unsure, 18%
Tell us what you observed about your child(ren)'s learning.

- **Process of learning/How they learn:** 66%
- **Interests or preferences:** 17%
- **Traits or characteristics:** 12%
- **How child interacts/social skills:** 10%
- **Skills or abilities:** 9%

5 additional categories each had 6% or fewer responses
Now think of a specific instance during your visit where you observed something about how your child(ren) learns. Where were you in the museum, and what were you and your child doing?
In their descriptions, adults focused on:

Exhibit name or area of the museum 69%

Materials or objects 62%

Other elements such as facilitators, audiovisual elements, and printed materials were mentioned by 5% or fewer respondents in describing the instance in which they observed how their child learns.
What were you and your child doing [when you observed how they learn]?

- Manipulating or using objects or materials: 49%
- Observing, watching, looking: 25%
- Problem solving/Figuring out how: 20%
- Imitating/modeling: 10%
- Interacting with others: 8%
- Playing: 8%
<table>
<thead>
<tr>
<th>Why didn't you observe anything about how your children learn?</th>
<th>Number of Participants</th>
<th>Percent of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Already know how child(ren) learn(s)</td>
<td>8</td>
<td>33%</td>
</tr>
<tr>
<td>Not looking for it</td>
<td>7</td>
<td>29%</td>
</tr>
<tr>
<td>Playing and fun - not learning</td>
<td>5</td>
<td>21%</td>
</tr>
<tr>
<td>Museum environment challenges</td>
<td>4</td>
<td>17%</td>
</tr>
<tr>
<td>Extraneous pressures</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>13%</td>
</tr>
</tbody>
</table>

Total responses: 28 117%

Total respondents: 24

What's your gut feeling about why you didn't observe anything about how your child(ren) learn?
Tell us what it was about the children's museum environment that made it possible for you to observe how your child(ren) learn(s).

<table>
<thead>
<tr>
<th>Activity</th>
<th>“Extremely Important”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity to watch my child(ren) play</td>
<td>65%</td>
</tr>
<tr>
<td>Materials/activities that I don’t have access to at home</td>
<td>61%</td>
</tr>
<tr>
<td>Opportunities to watch my child(ren) interact with other children</td>
<td>42%</td>
</tr>
<tr>
<td>Activities that sparked conversations btw me and my child(ren)</td>
<td>42%</td>
</tr>
<tr>
<td>Activities that my child(ren) and I worked on together</td>
<td>39%</td>
</tr>
<tr>
<td>Signs that explained what my child(ren) might be learning</td>
<td>19%</td>
</tr>
<tr>
<td>Signs that suggested ways I can support my child(ren)’s learning</td>
<td>19%</td>
</tr>
<tr>
<td>Floor staff who engaged my child(ren) in conversation or action</td>
<td>16%</td>
</tr>
<tr>
<td>Floor staff who engaged me in conversation or action related to my child</td>
<td>15%</td>
</tr>
<tr>
<td>Floor staff who shared specific information</td>
<td>14%</td>
</tr>
</tbody>
</table>
In your opinion, to what extent does the children's museum you visited present a unique opportunity for you to observe how your child(ren) learns, unlike any other place or experience?

<table>
<thead>
<tr>
<th>1=Not at all unique</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7=Completely unique</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
<td>6</td>
<td>10%</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>44</td>
<td>23%</td>
<td>40</td>
<td>38%</td>
<td>66</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total: 176
Weighted Average: 5.77
<table>
<thead>
<tr>
<th>Unique aspects of the museum</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities, exhibits or materials available</td>
<td>45%</td>
</tr>
<tr>
<td>Quantity and variety of activities or topics</td>
<td>27%</td>
</tr>
<tr>
<td>Presence of other visitors</td>
<td>10%</td>
</tr>
<tr>
<td>Designed for children/safe for children</td>
<td>9%</td>
</tr>
<tr>
<td>Hands-on opportunities</td>
<td>8%</td>
</tr>
<tr>
<td>Change or newness</td>
<td>6%</td>
</tr>
<tr>
<td>Caters to many ages</td>
<td>3%</td>
</tr>
<tr>
<td>Staff or facilitators</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children’s behaviors encouraged at the museum</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploring/discovery</td>
<td>14%</td>
</tr>
<tr>
<td>Play</td>
<td>13%</td>
</tr>
<tr>
<td>Interaction with other children</td>
<td>13%</td>
</tr>
<tr>
<td>Using materials and objects</td>
<td>10%</td>
</tr>
<tr>
<td>Creativity</td>
<td>6%</td>
</tr>
<tr>
<td>Having fun/Enjoyment</td>
<td>6%</td>
</tr>
<tr>
<td>Problem solving</td>
<td>5%</td>
</tr>
<tr>
<td>Being engaged (general)</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Plus 5 additional categories*
<table>
<thead>
<tr>
<th>Museum aspects that are not unique</th>
<th>Number of Participants</th>
<th>Percent of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Museum activities found elsewhere</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td>Interacation with other children elsewhere</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Not helpful in revealing learning</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Common materials</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total responses:</strong></td>
<td><strong>21</strong></td>
<td><strong>12%</strong></td>
</tr>
<tr>
<td><strong>Total respondents:</strong></td>
<td><strong>173</strong></td>
<td></td>
</tr>
<tr>
<td>Similar places</td>
<td>Number of Participants</td>
<td>Percent of Participants</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Other children's museums</td>
<td>9</td>
<td>5%</td>
</tr>
<tr>
<td>Home</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>School</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Zoos, aquaria, or similar</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Park or playground</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Anywhere or everywhere</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Library</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Community activities</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total responses:</strong></td>
<td><strong>31</strong></td>
<td><strong>18%</strong></td>
</tr>
<tr>
<td><strong>Total respondents:</strong></td>
<td><strong>173</strong></td>
<td></td>
</tr>
</tbody>
</table>
What do parents/caregivers learn about their children from their children's museum experience?

- Interests
- Social Skills
- Strengths and weaknesses
- Thinking/problem solving skills
- Emotional regulation

What if we intentionally marketed children’s museums not just as places where children can learn, grow, and develop skills, but as places where parents can learn about their children?
What is it about the children's museum experience that parents/caregivers feel contributes to that learning?

Main contributors:
- Opportunities to watch their children play and interact
- Unique materials

Less impactful:
- Signage
- Floor staff

What can we change about our current signage and floor staff practices to make a difference?

How could we test these changes?
Children’s Social and Emotional Development

SIG 4:

PURPOSE

- To examine the nature and frequency of children’s social-emotional behaviors in children’s museums;
- To contextualize our understanding of children’s social-emotional behaviors in children’s museums by comparing them with social-emotional behaviors in “like” environments designed for play.
Methods

- 468 observations of 4 – 5 year olds in the museum, using an adapted version of the Minnesota Preschool Affect Checklist (MPAC).
- 35 video-recorded observations of 4 – 5 year olds in the museum, conducted in exhibition areas designed to foster young children’s social-emotional development.*
- 138 observations of 4 – 5 year olds at “like” sites, conducted at free spaces designed for children’s play.

*RESULTS FROM THE VIDEO-RECORDED OBSERVATIONS ARE NOT INCLUDED IN THESE SLIDES
## Museum Sample: Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston Children's Museum</td>
<td>15</td>
<td>3%</td>
</tr>
<tr>
<td>Canadian Children's Museum</td>
<td>30</td>
<td>6%</td>
</tr>
<tr>
<td>Children's Museum of Denver</td>
<td>203</td>
<td>43%</td>
</tr>
<tr>
<td>Children's Museum of Houston</td>
<td>25</td>
<td>5%</td>
</tr>
<tr>
<td>Children's Museum of Indianapolis</td>
<td>20</td>
<td>4%</td>
</tr>
<tr>
<td>Children's Museum of Oak Lawn</td>
<td>16</td>
<td>3%</td>
</tr>
<tr>
<td>Children's Museum of Sonoma County</td>
<td>20</td>
<td>4%</td>
</tr>
<tr>
<td>Children's Museum of Tacoma</td>
<td>41</td>
<td>9%</td>
</tr>
<tr>
<td>Children's Museum of Pittsburgh</td>
<td>15</td>
<td>3%</td>
</tr>
<tr>
<td>Dupage Children's Museum</td>
<td>12</td>
<td>3%</td>
</tr>
<tr>
<td>Kohl Children's Museum</td>
<td>20</td>
<td>4%</td>
</tr>
<tr>
<td>Providence Children's Museum</td>
<td>15</td>
<td>3%</td>
</tr>
<tr>
<td>Thanksgiving Point</td>
<td>20</td>
<td>4%</td>
</tr>
<tr>
<td>Wonder Works</td>
<td>16</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>468</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
## Comparison Sample: Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellevue Square Play Area</td>
<td>34</td>
<td>25%</td>
</tr>
<tr>
<td>Downtown Park</td>
<td>11</td>
<td>8%</td>
</tr>
<tr>
<td>Fircrest Tot Lot</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Howarth Park</td>
<td>12</td>
<td>9%</td>
</tr>
<tr>
<td>Lincoln Park</td>
<td>13</td>
<td>9%</td>
</tr>
<tr>
<td>Riverwalk Park</td>
<td>10</td>
<td>7%</td>
</tr>
<tr>
<td>Seattle Center Playground</td>
<td>18</td>
<td>13%</td>
</tr>
<tr>
<td>Southcenter Mall Play Area</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>University Place</td>
<td>15</td>
<td>11%</td>
</tr>
<tr>
<td>University Village Playground</td>
<td>12</td>
<td>9%</td>
</tr>
<tr>
<td>Vios Cafe</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Volunteer Park</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>138</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Measures Included

Social group
  Other children in the group?
  Other children in the vicinity?

Levels of adult interaction
  Caregiver
  Staff
## Museum Sample: Duration of Observations

<table>
<thead>
<tr>
<th>Duration of Observation</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 minute</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>2 minutes</td>
<td>22</td>
<td>4%</td>
</tr>
<tr>
<td>3 minutes</td>
<td>40</td>
<td>9%</td>
</tr>
<tr>
<td>4 minutes</td>
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</tr>
<tr>
<td>5 minutes</td>
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</tr>
<tr>
<td>6 minutes</td>
<td>29</td>
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<tr>
<td>7 minutes</td>
<td>24</td>
<td>5%</td>
</tr>
<tr>
<td>8 minutes</td>
<td>33</td>
<td>7%</td>
</tr>
<tr>
<td>9 minutes</td>
<td>13</td>
<td>3%</td>
</tr>
<tr>
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<td>203</td>
<td>43%</td>
</tr>
<tr>
<td>11 minutes</td>
<td>2</td>
<td>0.50%</td>
</tr>
<tr>
<td>13 minutes</td>
<td>2</td>
<td>0.50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>468</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
### Comparison Sample: Duration of Observations

<table>
<thead>
<tr>
<th>Duration of observation</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 minute</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2 minutes</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>3 minutes</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>4 minutes</td>
<td>1</td>
<td>1%</td>
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<tr>
<td>5 minutes</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>6 minutes</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>7 minutes</td>
<td>9</td>
<td>7%</td>
</tr>
<tr>
<td>8 minutes</td>
<td>8</td>
<td>6%</td>
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<td>9 minutes</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>10 minutes</td>
<td>89</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>137</td>
<td>100%</td>
</tr>
</tbody>
</table>
MPAC Dimensions

1. Affect, positive and negative
2. Involvement, positive and negative
3. Frustration, positive and negative
4. Unusual behavior
5. Leading, joining
6. Empathy, prosocial behavior
## Summary of Findings

<table>
<thead>
<tr>
<th>In the <strong>museum</strong>, children demonstrated more instances of:</th>
<th>At <strong>comparison</strong> sites, children demonstrated more instances of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Negative affect</td>
<td>• Positive affect</td>
</tr>
<tr>
<td>• Positive involvement</td>
<td></td>
</tr>
<tr>
<td>• Negative involvement</td>
<td></td>
</tr>
<tr>
<td>• Positive frustration</td>
<td></td>
</tr>
<tr>
<td>• Negative frustration</td>
<td></td>
</tr>
<tr>
<td>• Leading, joining</td>
<td></td>
</tr>
<tr>
<td>• Empathy, prosocial behavior</td>
<td></td>
</tr>
</tbody>
</table>
- Identify qualities of environments - what role might they play in these results?
  - Emphasize value of CMs in these results
  - Discuss the richness of social/emotional behaviors in CMs from these results

What do we say about how to facilitate ESE?

- Focus on leading/joining = empathy

**Exhibit Space**

- Museum
  - Pretend play - kitchen/airplane, community & health facilities
  - Pretend play - grocery, town bakery
  - Pretend play - grocery, ice cream shop

- Science
  - Sound, reflect, model toys, science play
  - Sound, reflect, wind, sail toys

- Theater
  - Dramatic play - Farmer's Market, kitchen - musical play - telling stories, poems

- Providence
  - Pretend play - market, immigration, hospitals

- Indianapolis
  - Cause reactivity - balls, rings, black play; dirt toys

- Boston
  - Market/pretend play

**Museum**

- Tacoma
  - Pretend play - gross motor - science, graphics, cooperation, movement without

- Pittsburgh
  - Gross motor - art, power, strength

- Seama
  - Lift, creating, sensing - cas register - dramatic play

- All
  - Lack of loose parts
  - Single lead experience

- Sense
  - Ring, collaboration, shared goals
  - Pretend play
  - Dramatic play
  - Adult intrusive/engage
Question: If a tree falls in the forest and no one's around, and it hits a mime, does anyone care?

Image credit:

Why should you care?
Impact

There have been...

● Presentations
  ○ Several times at ACM InterActivity
  ○ Visitor Studies Association Conference

● Publications
  ○ Professional journals
  ○ *Hand to Hand* issue and articles
  ○ informalscience.org, IMLS Blog

● Webinars

● Regional Workshops

● Infographics

Go to: https://childrensmuseums.org/members/community-conversations/cmrn to learn more.
This also happened:

The Power of Play: A Pediatric Role in Enhancing Development in Young Children

Michael Yogman, MD, FAAP, Andrew Garner, MD, PhD, FAAP, Jeffrey Hutchinson, MD, FAAP, Kathy Hirsh-Pasek, PhD, Roberta Michnick Golinkoff, PhD, COMMITTEE ON PSYCHOSOCIAL ASPECTS OF CHILD AND FAMILY HEALTH, COUNCIL ON COMMUNICATIONS AND MEDIA

Children need to develop a variety of skill sets to optimize their development and manage toxic stress. Research demonstrates that developmentally appropriate play with parents and peers is a singular opportunity to abstract
Implications

Image credit: https://twitter.com/thefarside_ish/status/997455983977758720
Implications of SIGs:

How was the research conducted?

SIG-1: Learning Frameworks:
Small group of museums within CMRN.

SIG-2: Play:
Museum professionals across ACM.

SIG-2: Caregivers’ Perceptions of Learning:
Surveys and interviews with parents / caregivers.

SIG-4: Social / Emotional Development:
Observations of children.
We asked caregivers what they noticed about their children’s learning at children’s museums.

**Caretakers Learn New Things About Their Children at the Museum.**
- Learning processes
- Preferences
- Traits and Characteristics
- Skills

**Caretakers View Children's Museums as Ideal Places to See Their Children Learn.**
Caregivers stated that children's museums are unique learning environments because of the:
- Variety of activities
- Hands-on play

**Caretakers Noticed Their Children Learning at Exhibits and Play-Based Activities.**
This gave caregivers ideas for how they might encourage their child's interests and learning at home.

The next time you visit your local children's museum, take time to slow down and watch your child learn. Then, join in.

Visit [findchildrensmuseum.org/about](http://findchildrensmuseum.org/about) for more information.
What’s next for the CMRN?

Einstein discovers that time is actually money.

Image credit: https://www.pinterest.com/pin/554013191645508966/?lp=true
Discussion and Next Steps

1. What are your key takeaways?
2. What could the CMRN do that would be of greater use for you?

Image credit: https://www.pinterest.com/stevecco/the-far-side/?lp=true