

doing science together: families learning and interacting in a science museum

heather toomey zimmerman • university of washington • cognitive studies in education • htoomey@u.washington.edu

research questions

- How do families learn together in the museum?
- How do families use museum exhibits, artifacts and specimens in their conversations, problem-solving and task engagement?
- What are the kinds of social interactions between family members that support, or do not support, learning?
- Do stated expectations for museums explain actual engagement in museum activities?

methods

- o Ethnographic shadowing of museum exploration
- o Video interaction analysis
- o Pre- and post- family interviews

subjects

- Families with children in elementary school. Two groups:
- o PRACTICED USERS: Museum-going families whose children attend museum summer camps
 - o NEWCOMERS: Families from community centers; non-members who do not send children to museum programs



The butterflies at the science museum prompted many of the interactions & conversations observed.

abstract

This research project considers the learning and interactions that occur when families come together to engage in a scientific conversation or to solve a problem during museum visits. I use a *socio-cultural frame* to study these activities as a family social practice. By studying families doing museum science activities as a family social practice, I analyze the *norms, skills, language, identities*, and *social interactions* that family members develop or draw upon to organize their activities alongside with the families' interactions with *scientific content, pedagogy*, and *artifacts*. Examining the museum visit in this manner, I explore how families learn science together in a museum, how they determine what science is, and what they consider to be appropriate learning activities.

Findings include (1) family members led the visit navigation for different purposes; (2) different kinds of teaching observed include use of personal narrative, reading museum texts, and use of gesture and body positioning to enrich the conversation; and (3) live animal exhibits often prompted family conversations around issues of gender.

findings from initial case-studies & observations

MUSEUM NAVIGATION: Prior or personal experience with a topic seemed to motivate adult interest; the presentation of an interactive exhibit component seemed to motivate the child's interest.

FAMILY LEARNING: USING MUSEUM TEXTS

- o Both parent & children were reading museum exhibit labels, aloud & silently
- o Children were interested in using field guides in live animal exhibits
- o Exhibits with informational & orienting movies held attention
- o Family members worked together on computer components

FAMILY LEARNING: USING THE BODY TO EXPLAIN

- o Adults physically illustrated action at exhibits & used their bodies to direct attention
- o Parents & museum staff used their body movement to illustrate a concept
- o All family members used pointing to express their ideas

FAMILY LEARNING: USING PERSONAL NARRATIVES & PRIOR EXPERIENCES

- o Family members asked questions to each other based on personal experiences
- o Adults & children told a story at exhibits as an answer to a question & to explain
- o Family members corrected an answer by referring to a shared experience, "No, don't you remember . . ."

GENDER IN THE MUSEUM CONVERSATIONS: Live animal exhibits sparked talk of gender, which provided opportunities for families to ask questions & explore the topic together.

future lines of inquiry

- (1) What do the activities of families suggest for the design of learning environments?
- (2) Do experienced museum-going families have different learning strategies compared to first-time museum-going families? What are these strategies, and can they be leveraged to create more effective museums exhibits?
- (3) Based on their interactions, do families have gendered learning outcomes?

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