

# Web and Museum: Intergenerational Learning in Two Informal Settings

Camellia Sanford

Learning Research and Development Center, University of Pittsburgh

## Introduction

How adults interact with children directly affects the ways in which they talk about educational content together (Jipson & Callanan, 2003). Adults can choose to direct the talk, let the child direct the talk, or engage in a collaborative conversation with the child. The type of informal setting which the adult and child are in can influence what type of interaction, and therefore what kind of talk will occur.

The current study focuses on two different informal learning environments, a museum exhibit and a website in order to determine what types of interactions are conducive to each setting. This research is unique in that it focuses on an understudied population, grandparents with their grandchildren. By studying older adults and children interacting together, we can help museum educators and web designers better understand how they can support certain types of interactions and talk amongst their visitors.

## Research Questions

1. Do grandparent-grandchild interactions around educational content on the web look different than grandparent-grandchild interactions around parallel content in museums?
2. How do different types of grandparent-grandchild interactions affect the ways in which older adults and children talk in web and museum learning environments?

## Methods

### Participants

The sample included:

- 30 grandparent/grandchild pairs for the museum condition (Mean age grandparent=62; Mean age child=8.1)
- 31 grandparent/grandchild pairs for the web condition (Mean age grandparent=57; Mean age child=6.8)

### Procedure

All participants worked collaboratively to answer a series of pre-test questions about heart health. Next, participants either visited the Giant Heart exhibit at the Franklin Institute in Philadelphia, PA or visited a Heart Health website at the Children's Museum of Pittsburgh, PA. When participants ended their visit, they answered a series of post-test questions.

### Coding

*Type of Interaction: Who talked the most about content*

- Grandparent directed: Older adult led heart health conversation
- Child directed: Grandchild led heart health conversation
- Collaborative: Grandparent and grandchild talked an equal amount about heart health

## Methods, cont.

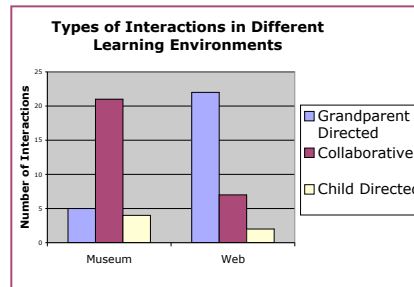
*Type of Talk: What was said about the content*

- List: Naming or noticing features in the learning environment
- Analyze: Using information from the learning environment to analyze content
- Synthesize: Using prior knowledge to analyze content
- Explain Personal: Connecting prior experiences to the learning environment or content
- Explain Causal: Connecting cause and effect within content space

## Results

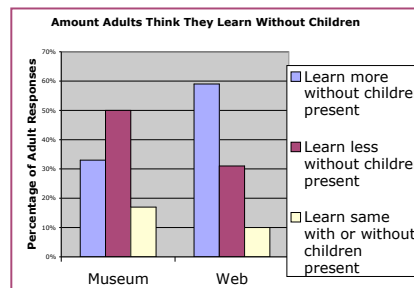
### Interactions within Learning Environments

Grandparents engage in collaborative interactions with their grandchildren in museums, and direct more one-sided interactions on the web. This result seems to indicate that museums are places where adults feel comfortable giving up some control of activities and talk to their grandchildren.



One reason grandparents may neglect their grandchildren's input on the web is because older adults have more experience navigating web environments solo.

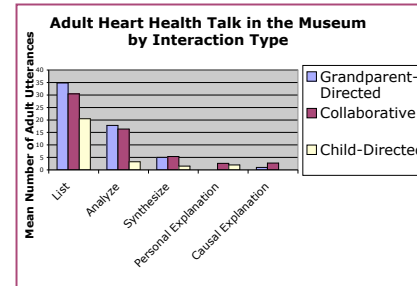
Grandparents want to explore educational websites by themselves. They think that having their grandchild with them on the internet is detrimental to their learning. Older adults in museums feel that their grandchildren have something to offer that they cannot get on their own, so they tend to collaborate with their grandchildren.



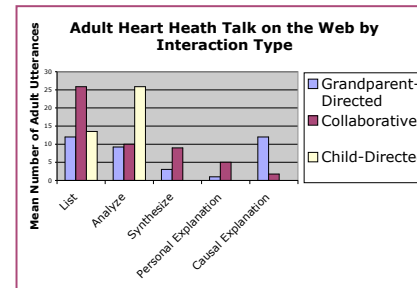
## Results, cont.

### Conversation within Learning Environments

The type of talk that adults engaged in depended on the type of interaction they had with their grandchild.



Collaborative adults in museums tended to analyze heart health information at a significantly greater rate than adults who let their grandchildren lead the interaction.



Collaborative adults on the web tended to list heart health information and use personal explanations significantly more frequently than adults who led the interaction themselves.

## Conclusions

- Grandparents are more collaborative with their grandchildren in museums. Since older adults in museums tend to have more in-depth conversations when they work together with their grandchildren, museum educators should continue to design their exhibits in ways that maximize collaborative interactions.

- Older adults dominate interactions on the web, yet collaborative (not grandparent-directed) interactions yield the most in-depth talk about educational content. If designers of educational websites want their users to develop more sophisticated ways of talking about site content, then they should implement methods that encourage families to interact together on the web.

## Acknowledgements

The author would like to thank Kevin Crowley, Karen Knutson, Meryl Zwanger, Julia Kaufman, Andrea Patterson, Anuja Parikh, Laurie Giarratani, and Jenna Brooks for their assistance throughout this project.