Family Interpretations of Conservation Messaging at an Aquarium exhibit
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BACKGROUND
- Conservation, a socio-scientific issue, can be complex and controversial.
- Aquaria offer scientific information in approachable, non-threatening formats, allowing for comfortable engagement.
- Understanding how families interact with and interpret aquarium messaging can document exhibit effectiveness.
- Studies have examined family learning in informal settings but only focus on adults’ perspectives, failing to consider how individuality influences understanding.
- Our qualitative study examined interpretations of experiences by both parents and children.

METHODS

Hypotheses
Visitors will interpret messaging different than intended.
Adults and children will have differing experiences.

Data Sources/Goals
Staff Interview (n=1)
- Identify Messaging Approach and Parameters
- Select Target Exhibit and Document Intended Message

Exhibit Observation
- Document Target Exhibit Design Elements and Reading Level

Video Observations
- Record Time on Design Elements
- Capture Concurrent Biometric Trends by Visitor Type (Adult vs. Child)

Visitor Interview (n=14)
- Identify Interpretations of Message

Data Analysis
- Inductive approach to analyze interviews
  - First Cycle: In Vivo Codes → capture participant claims
  - Second Cycle: Pattern Coding → identify emergent themes
- Maintained trustworthiness through inter-rater reliability (100% consensus) and member checking themes.
- Deductive approach to categorize exhibit design elements into:
  - Digital, Live Specimen, Physical Signage, or Manipulative
- Calculated focal points, duration and counting using Tobii Pro Lab Software to report frequencies (sec/%) in

RESULTS

Biometric Trends based on Focal Points During Exhibit Visit
(% of Total Time, Average Time Spent at Target Exhibit was 4 Minutes)

<table>
<thead>
<tr>
<th>Focal Points</th>
<th>Adult 1</th>
<th>Adult 2</th>
<th>Child 1</th>
<th>Child 2</th>
<th>Child 3</th>
<th>Child 4</th>
<th>Child 5</th>
<th>Child 6</th>
<th>Child 7</th>
<th>Avg Adult</th>
<th>Avg Child</th>
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<tbody>
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<td>Physical Signage</td>
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<td>Manipulative</td>
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Aquarium Intended Message
Conservation of water is important because the overuse of water and non-point pollution within the watershed can harm local endangered aquatic species.

Visitor Interpreted Message
- Adults 1: Learning about the aquatic, the importance of preserving the environment and nature overall.
- Child 1: Sea animals.
- Adult 2: Salamander eye adaptations.
- Child 2: Water and to help the environment.
- Adult 3: Save the water.
- Child 3: Preserve the aquatic environment and fish.
- Adult 4: I clearly don’t know everything.
- Child 4: I don’t know really.
- Adult 5: To learn about what lives in our waters.
- Child 5: The kinds of fish.
- Adult 6: We can learn from each other.
- Child 6: Don’t throw trash in the water.
- Adult 7: Take care of nature.
- Child 7: Protect endangered species.

DISCUSSION

- Adults spent more time on signage (46.83%). Adults tend to use signage to make sense of exhibits and facilitate children’s understanding.
- Children spent more time looking at live species (46.47%). Children are more likely to engage with exhibits designed for a hands-on experience and include live species.
- Lack of manipulative design elements in exhibit may be one cause for limited time in exhibit.
- Manipulatives hold visitor attention longer and increase engagement opportunities.
- Most visitor interpretations of exhibit message were aligned with the intended message, but none reported the full message.
- Disconnection may be due to technical issues with digital displays or limited exhibit interaction.

FUTURE DIRECTIONS
- Expand investigation to more aquaria and family participants.
- Identify and compare trends from exhibits displaying varying conservation content within and across aquaria.
- Explore how personal interests and prior experiences with content influence interpretations of messages.
- Explore how interpretations lead to related, future actions.

ACKNOWLEDGEMENTS

REFERENCES