

Denver Museum of Nature and Science

Deepika Rama Subramanian, Hande Batan, Noah Cowit, Taj Harris, Tian Xu

Fieldwork Date: March 11, 2023, 11:44 a.m. - 5:00 p.m.



Denver Museum of Nature and Science

Museum Mission:

"Be a catalyst! Ignite our community's passion for nature and science"

Values:

The Denver Museum of Nature & Science envisions an empowered community that loves, understands, and protects our natural world.

Core Values

- We love science.
- We are curious, creative, and playful.
- We cultivate relationships with each other, diverse communities, the environment, and for our future.
- We think critically and act with empathy.



RQ1: What makes the museum space a place?

RQ2: How is this space informed?

Research Plan: Three-Stage Evolution

Stage 1

Current chosen candidate zones:

1. Entry, Exit and Ticketing, Central Atrium
2. Egyptian Mummies
3. Health Center
4. Morgridge Family Exploration Center
5. Discovery Zone
6. Prehistoric Journey
7. Anschutz Family Sky Terrace



Stage 2

Choose 5 zones and spend ~30 mins and rotate once -- two sets of eyes (e.g., where do people with tickets go first and how they are navigating? compared to people with museum passes - how are they navigating the space?)

- Spend time on informatics
- Pair-up and walk through the space again--pay attention to how to improve it

Stage 3

Plan changed once we encountered how big the museum was and how it would be easiest to coordinate action.

Step 1: Individual Data Reporting



Step 2 : Affinity Mapping

RQ: How is the museum being used?

RQ: What are the informatics of the space?

Top-level Theme:
Museum-as-Labor-Space



Values-in-Practice



Top-level Theme:
Museum-as-Entertaining-Space



Top-level Theme:
Museum-as-Bonding-Space



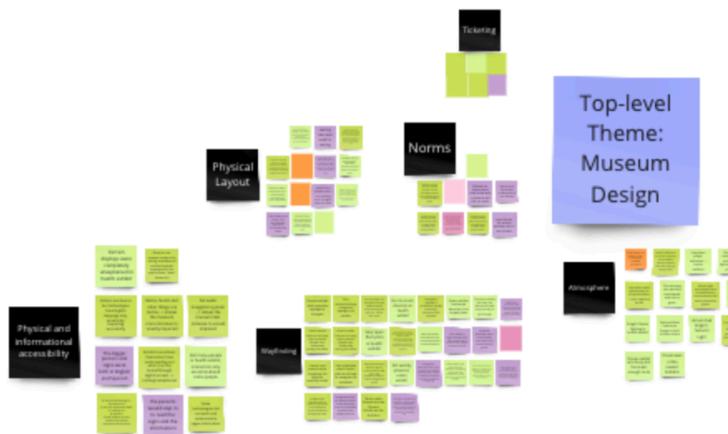
Outlier

Top-level Theme:
Museum-as-Learning-Space

Tian Xu



Top-level Theme:
Museum Design



Step 3 : Design Recommendations Based on Themes

What should be added?

Designing for accessibility and inclusivity: Offering multiple languages in instructional or educational interactive technologies

Tian

Making information accessible for multiple age groups. For example, using animated rather than textualized information for children, especially on instructional machines

Improve wayfinding in exhibits that are supposed to be approached in a specific order

What should be subtracted?

Exhibits that misaligned with values (Native American cultural displays)

Taj

What should be converted?

having voice recordings for each exhibit where people can listen to it (this can also be an app or provided by the museum)

Analog informatics don't necessarily need to be replaced by digital ones. A mixture can make an exhibit richer.

Interactive exhibits can be good, but must be carefully planned out based on people flows.

Volunteers patrolling the exhibit to answer any questions

Overlay mid-tech to high-tech, especially highly interactive technologies. For example, expedition Health exhibit: ID card machines at intro / exit >> QR Codes

What should be working so well that a general design principle can be derived?

Design exhibit outlay so that the crowd can control itself >> provide alcoves for rest / slower traffic

Heath

Having maps of individual exhibits as well as of the museum can improve wayfinding and museum experience. -- make wayfinding in the exhibits easier -- perhaps a map this can be printable at the entrance and / or available on the app

D

H

Recommendation 1

Theme: Values-in-Practice



Museum Values:
envisions an
empowered
community that
loves, understands,
and protects our
natural world

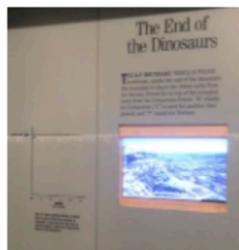
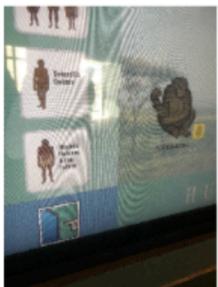
Topic: Value Misalignment

Native American
Culture + Egyptian
Cultural Exhibits
at the nature and
science museum?



Exhibits that misalign with values should be archived, discontinued, or traded with other museums for more value-aligned exhibits

Main Recommendation 2: Designing for accessibility and inclusivity



Top-level
Theme:
Museum
Design

Physical and
informational
accessibility

Offering multiple
languages in instructional
or educational interactive
technologies

Making information accessible for
multiple age groups. For example,
using animated rather than
textualized information for children,
especially on instructional machines

Recommendation 3: Wayfinding

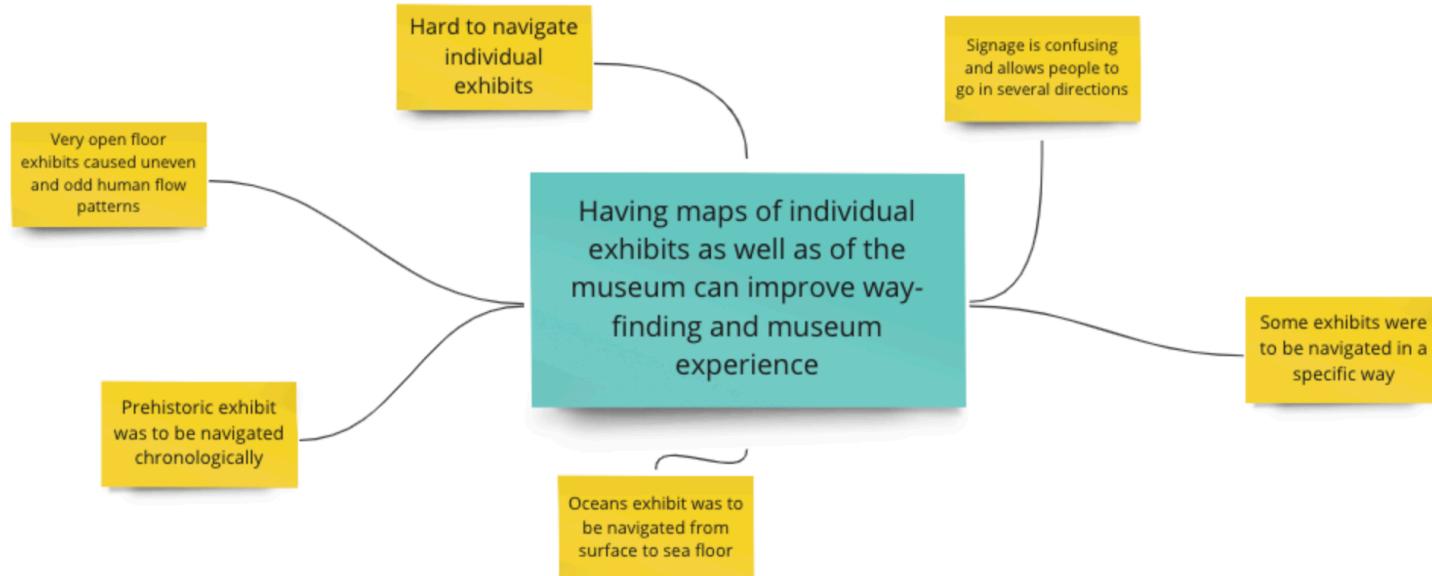
Data:



- Oceans exhibit had just one large sign to prevent people from accidentally exiting the exhibit
- Exit weirdly placed in ocean exhibit
- Oceans exhibit didn't provide signage to navigate
- In the oceans exhibit it was difficult to go clockwise it's a long ring of exhibit, but there is no way to know what exhibits are next. No clear reason for this
- Very open floor plan in health exhibit
- Ocean exhibit had some direction, but largely open
- Informal interview:
How do I get to?
Person tries to help out in the prehistoric exhibit, cannot navigate the space
- Not as much direction in health exhibit
- Dinosaur exhibit was chronologically arranged, starting from the beginning of the earth to the present day
- Mummy exhibit was bidirectional, most people went counter-clockwise
- Oceans exhibit could have been more directional, considering a large part of the exhibit was about that the surface to the sea floor
- Mummies has a TV with info and then an interactive screen that helps understand the exhibit
→ no way to know which one follows the other and that they should be seen in sequence
- The signs for the dinosaurs had levels 1 signs but didn't give the right direction, whereas the signs would say level 2, so people would be confused
- Navigation signage in prehistoric exhibit confusing - messes up the 'timeline'



Recommendation:



Recommendation 4

Long-term volunteers may have good ideas in how to make the museum better.

Data:



Recommendation:

Recommendation 5

Top-level Theme: Museum-as-Learning-Space

1. Adding a layer high-tech to allow interaction with the exhibits
2. Analog informatics shouldn't be replaced by digital ones but there should be a mixture of both



Research Questions (and some answers!)

RQ1: What makes the museum space a place?

- People and their interactions with the museum exhibits makes the space a place: The museum is a place of learning
- People and their interactions with each other makes the space: The museum is not just a place of learning but one where people come to spend time with family and friends
- Volunteers make the space a place: The museum is also a space of labour (of love) with volunteers spending a lot of their time to help people learn about the natural world

RQ2: How is this space informed? In short, In a large number of ways! Specifically:

- The space is informed by text - signage with directions, text that describes the display and provides contextual information
- The space is informed by visual and interactive displays: the museum is peppered with informing displays to help enhance the understanding of its visitors
- The space is informed by people - volunteers who help visitors understand more about what they were looking at, adults informing each other and their children about what they were observing
- The space is informed by mobile technology - visitors used their mobile phones to supplement information that they were receiving from the museum (also to answer their childrens' questions)