

Experiments in Noticing Exhibit Prototypes

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THIS IS NOT A DEFINITIVE FINAL REPORT

FORMATIVE evaluation studies like this one often:

- **are conducted quickly**, which may mean
 - small sample sizes
 - expedited analyses
 - brief reports
- **look at an earlier version** of the exhibit/program, which may mean
 - a focus on problems and solutions, rather than successes
 - a change in form or title of the final exhibit/program

Outdoor Exploratorium Experiments in Noticing Exhibit Prototypes

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PURPOSE

This study is a preliminary look at a set of exhibit prototypes for the Outdoor Exploratorium. It gauges

- what visitors noticed at the exhibits that they were unaware of before seeing the exhibits,
- any difficulties visitors had with these exhibits, and
- what if any connections visitors made between what they noticed and their own lives.

METHOD

- Nine exhibit prototypes were placed outside in front of the Exploratorium entrance at the Palace of Fine Arts as part of an all-day Outdoor Exploratorium Noticing Event that included a variety of activities that ran throughout that day.
- Of these nine, this study focused on 5 exhibits which sat on the grassy area in the North Lot:
 - Mirrors
 - Seed Dispersal
 - Sound Tubes
 - Manhole Covers
 - Wind Tracer

The other 4 exhibits had been previously evaluated.

- An evaluator watched for visitors who stopped at any one of the 5 exhibits targeted in this study and interviewed these visitors as they left the grassy area. A visitor may, therefore, see multiple outdoor prototypes before the interview.
- We only interviewed visitors who were
 - 8-years old or older
 - NOT wearing a black dot (indicating they had already been interviewed)
 - NOT wearing a green dot (indicating that they had gone on a Noticing Tour)
- Where possible, be interviewed the group and not an individual visitor

- Groups interviewed

Group Type	Count
family	7
adult	5
peer - adult	5
peer - teen	1
Total	19

RESULTS

Did the exhibits help visitors notice the outdoors in a new way?

- 16 out of 18 visitors interviewed indicated that an exhibit helped them notice the outdoors differently. Table 1 lists those exhibits that visitors mentioned.

Table 1. Exhibits that helped visitors notice in new way

Exhibit	Count (out of 18)
Manhole	8
Sound tubes	8
Seed dispersal	4
Wind tracer	2
Mirrors	2

- The following lists what visitors noticed that they did not notice before using the exhibit.

Manhole

- Thinking about what's underground

Visitor1: Could see things are happening underground, could see that we are not on solid ground

Visitor3: I haven't really thought of what was going on underground, now when I pass manhole covers, I'll think about it more

Visitor5: F1- we didn't know what was underground

Visitor13: there's stuff going on below us that we never think about

Visitor16: -discovering what's in the manhole under us

- Hearing the sounds
 - Visitor6: both- (to hear) the sound of the dripping and running water was new
 - Visitor9: M- never thought we would hear sewage sounds, don't usually think about this
 - Visitor11: -hearing the ... water was new
- Smelling the smells
 - Visitor6: M2- I smelled it

Sound tubes

- Hearing new sounds from different surfaces
 - Visitor4: F- makes you think about the surface
 - M- about the texture of things
 - Visitor7: F1F2- the grass ruffle sound was new
 - Visitor10: M1- the grass sound, the concrete sound was new
 - Visitor11: hearing the amplification of the grass ... was new
 - Visitor15: M2- the different sounds between the grass, the leaves, and the pavement, you usually don't hear these
 - F- the sounds that different things make (is interesting), one almost sounded like a radio (the pavement)
 - Visitor17: M- I thought about the textural qualities of the ground
 - Visitor18: F- the different surface sounds, to hear them was interesting
 - M- the sound of the metal was loud
- Hidden sounds
 - Visitor2: that there are hidden sounds out there I didn't know about...(I thought)...are animals hearing the same thing?
- How sound travels
 - Visitor7: F1- I didn't know that sound could travel THROUGH the tube, through the plastic

Seed dispersal

- How seeds move
 - Visitor10: M1- the grass sound, the concrete sound was new
 - M2- how things fall @ different times when wind catches them
 - Visitor12: -when you're outdoors, you can see the seeds floating (didn't notice this before)

Visitor15: M1- the idea that the seeds would have different dynamics @ different stages of its growth is interesting

Visitor16: different falling rates of the seed are interesting

Mirrors

- Images in the mirror

Visitor9: F- interesting how in one mirror, my son's image was upside-down; we are more aware of sight

- Mirrors and fire

Visitor17: F- it made me think about the possibility of fires (in the outdoors) with mirrors (caused by mirrors) if there was sunlight

Wind tracer

- The movement of the wind

Visitor12: -the wind, (you can see here from the exhibit that) even if you don't feel the wind, there's still some movement

Visitor16: -wind direction, how it is so unstable

Was there anything confusing about an exhibit?

- A few visitors were confused at some of these exhibits.

Mirrors

Visitor1: the mirrors, yes, don't get the point. It was fun to play with, but

Visitor9: F- mirrors: we weren't sure what we were supposed to do because there were no instructions

Visitor12: mirrors: didn't know what was going on there, but the other exhibits were fine

Wind tracer

Visitor14: M1- there could have been a bit more wind (for the wind tracers)

Visitor15: M1- the wind tracers: it just looks like graffiti because there's no protection against people writing on it

Visitor16: the wind tracer: can get to be too much of a mess, and so patterns are obscured

Manhole

Visitor14: M2- manhole is very typical of a drain, not too exciting

Visitor15: M1- and the manhole: you may want to take note that the smaller tubes could get stuck in someone's ear, this could be a hygiene problem

Visitor18: M- No, except the manhole, it would be better to have a picture (e.g., a camera) to see what it looks like (underneath), to see what you're listening to

Sound tubes

Visitor4: M- the tube should be longer for taller people

Visitor15: M1- the sound tubes: would benefit more if there was a better explanation

Did the exhibits remind visitors of anything from their own lives?

- When asked, 16 out of 18 visitors said that an exhibit reminded them of something else they had seen apart from the Outdoor Exploratorium. Table 2 lists those exhibits.

Table 2. Exhibits that reminded visitors of other experiences

Exhibit	Count (out of 18)
Sound tubes	6
Manhole	5
Seed dispersal	5
Wind tracer	2
Mirrors	2

- The exhibits reminded visitors of the following:

Sound tubes

Visitor2: listening to a big shell, that is, the echoing sound

Visitor3: we've done this at home, using a coat hanger and string

Visitor11: it's like the tin cup with wire idea (the telephone experiment)

Visitor15: M1- reminds me of trash barrels, how it is noisy when it rolls over pavement, but quieter over grass

Visitor17: reminded me of when I was in school (as a child) and I put my head against the desk and you could hear the broiler, so, the whole concept of non-traditional medium for sound travel

Visitor18: M- the grass sounds like a snake

Manhole

Visitor1: reminded me of the tours of the sewers in Paris, and I thought if someone (had) just flushed the toilet

Visitor2: listening to a big shell, that is, the echoing sound

Visitor4: F- it sounds like in Boston, when it rains, afterwards you can hear the rushing of the water

Visitor8: just the sound of water, I've heard it many times, nothing new

Visitor9: F- reminded me of a calm, rippling sound of a fountain

Seed dispersal

Visitor10: M2- Just nature itself, reminds me of nature in general

Visitor12: it reminded my daughter of dandelions, of nature in general

Visitor13: it reminded me of an Exploratorium exhibit inside: the one where you pump out air and a feather falls, this reminded me of it only because it LOOKS very similar (e.g., the long, straight tubes, same materials)

Visitor14: M1- reminds me of playing in the outdoors as a child

Visitor16: reminds me of dandelions as a child (playing with them)

Wind tracer

Visitor7: F1- It looks like an exhibit where you drop a penny, any coin, and it spins all the way down to the bottom (exhibit at Academy of Science)

Visitor10: M1- I can't remember, like another exhibit I've seen in another state or something

Mirrors

Visitor7: F2- reminds me of car side mirrors

Visitor15: M2- reminds me of buildings that are made of mirrors

F- reminds me of reflecting lights when you are driving at night

SUMMARY

- Most visitors noticed something new about the outdoors at the 5 prototypes targeted for this study (Mirrors, Seed Dispersal, Sound Tubes, Manhole Covers, Wind Tracer).
- Most visitors also made connections between an exhibit and something else they've noticed apart from the Outdoor Exploratorium.
- The exhibit evaluation was run concurrently with evaluation of the Noticing Tours that were offered throughout the day as part of the larger Outdoor Exploratorium: Experiments in Noticing event. Because most of the evaluation effort was focused on the programmatic activities for that day, we had one evaluator covering a set of exhibits. This is instead of focusing on each exhibit individually, which is more often done (and more appropriate) at this early stage of exhibit prototyping. In the future, we will look to evaluate each exhibit outside to look more closely at the nature and extent of noticing that each engenders with visitors.

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APPENDIX A***Interview Questions***

1. Did any of these exhibits get you to notice the outdoors in a new way? Which one? [ask them to point]
2. [first exhibit you saw the visitor at OR exhibit answer from Q1] Let's talk about that exhibit [point]. What did you notice about the outdoors that you didn't notice before seeing that exhibit? Anything? Anything else?
3. [first exhibit] Was there anything confusing or disappointing about that exhibit? What?
4. Did any of the exhibits remind you of anything else you've seen or experienced either inside the Exploratorium or from your own life. **YES NO**
5. [If YES]
 - a. Which one?
 - b. [If > 1, choose one from the observation list: mirrors, wind pen, listening tubes, manhole, disperse seeds]
What did it remind you of? Anything inside the Exploratorium? Anything from your own life? Anything else it reminded you of?