Audio Tour Evaluation

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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

Audio Tour Evaluation
30 Tour Stop Version 5/17/00
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Goals / Methods

This evaluation was conducted to provide formative information for the development of a General Exhibit Audio Tour. The evaluation comes between the production of the first 30 tour stops and the entire 60 tour stops. This should allow the results to inform the development of the second set of 30 stops. The audio tour was produced by Antenna Audio

The main method for data collection was a 15-25 minute interview, conducted two hours after the visitor(s) had checked out an audio device. (See "Audio Tour Eval Plan.14" for details.)

The interview questions focused on four areas:

- Demographics. Who were the participants in the study?
- Logistics. Were there any difficulties in taking the audio tour? (finding stops, using device)
- Content. Which tour stops did visitors go to and what did they think of them? What aspects of the tour did visitors find interesting and enjoyable and what aspects were uninteresting and distracting?
- Bottom Line. Would visitors pay $2.00 to take this audio tour?

Summary of Findings

Demographics
- N = 33 visitors. Of those, 32 were adults and one was a teenager. Very few children took the audio tour. In most groups, it seemed that each member checked out their own device.

Logistics
- Visitors stopped at an average (median) of 12 tour stops.
- Virtually none of the visitors had difficulty using the audio device, using the map or understanding the language / explanations.
- Overall, 8 of 33 (24%) visitors had difficulty finding the tour stops. Of those eight, many asked for larger ear signage.

Content
- 26 of 33 (79%) visitors felt that the sound effects enhanced their experience by setting the mood or making it feel more realistic.
- On average, visitors felt that the stops were between interesting and neutral. (See Figure 2)
- Six of 33 (18%) visitors felt that the language used at Magnetic Bacteria ("hell") or at Brine Shrimp Ballet ("sex") was inappropriate.

Bottom Line
- About half of the visitors said they would pay $2 for the audio tour.

Unexpected finding — different types of visitors
- We categorized the visitors into two groups, those who went to more than 12 stops (called *Persisters*) and those who went to 12 or fewer (called *Browsers*), and found the following differences in their behaviors:
  - Persisters visited tour stops throughout the museum. In contrast, the Browsers showed a fatigue pattern, visiting only those stops located on the "main drag" of Bays 5-13. (See Figure 1)
  - Persisters used the map to find the exhibits, while Browsers did not use the map.
  - More of the Browsers than the Persisters felt the segments were too long.
  - Nearly all (13 of 15) of the Persisters said they would pay $2 for the audio tour. In contrast, less than half (8 of 18) of the Browsers said they would pay $2 for it.

Conclusions

There seemed to be two different types of audio tour visitor. The Persisters seemed to want the audio tour, use it to its full capacity, find the segments about the right length, and be willing to pay for it. The Browsers, while they found the tour stops about as interesting as the Persisters did, generally did not enjoy taking audio tours as much. Hence, they were less willing to pay for it.

It is our opinion that these categories of visitor — Browser and Persister — are not a function of the content of the audio tour, but rather represent expectations and inclinations that visitors bring with them into the museum. The Persisters seemed more inclined to purchase an audio tour. Consequently, our suggestion is to cater the audio tour more to them, while trying to satisfy the Browsers as much as possible.

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Detailed Findings

This section will present detailed results from each question asked.

Demographics of visitors interviewed (does not include other members of group):

Total N = 33

Gender		Age		English speakers	
Men	20	Adults	32	Native	30
Women	13	Teens	1	Fluent Non-Native	3
		Children	0	Non-Native	0

1. Is this your first visit to the Exploratorium? Y / N

Yes   24
No   9

1b. When you were in line to get in, did you notice the sign advertising the audio tour? Y / N

	Before Friday 5/11/00	On or after Friday 5/11/00
Yes	3	1
No	0	3
Not Asked	26	0

2. How many tours stops did you listen to? (choose from: 0, 1, 2-5, 6-10, 11+)

Response:	0	1	2-5	6-10	11+
# of Visitors:	0	0	7	18	8

In addition to asking visitors to tell us how many stops they visited, we also asked them to sort photographs of all the tour stops into piles later in the interview. One of the piles was labeled "Not visited," providing us with a more accurate count of the number of tour stops visited. Listed here are the numbers from the sorting task, not from the self-report in Question 2.

Minimum	=	3 stops visited
Maximum	=	25 stops visited
Median	=	12 stops visited

Based on the number of tour stops visited, we split the visitors into two groups at the median value:
• Browsers — those who visited 3-12 stops (N = 18)
• Persisters — those who visited 13-25 stops (N = 15)

These two groups behaved differently in several ways, as we discuss below.

By comparing the number of stops visitors reported seeing in answer to this question and the number of photographs that ended up in "visited" piles in the sorting task, we found that about half of the visitors (14 of 33) tended to underestimate the number of stops they had visited (i.e., they went to more stops than they thought). Of the under-estimators, the Persisters on average stopped at 7 more tour stops than they originally reported, while the Browsers on average stopped at 3 more stops than reported.

3. Was there anything challenging for you in finding the exhibit stops on the tour?

Overall, 8 of 33 (24%) visitors had some difficulty finding the stops. There was no difference between Browsers and Persisters in this respect. Most of those who experienced difficulty asked that the ears be made larger.

	Browsers	Persisters	Total
Yes	5	3	8
No	13	12	25

Comments / suggestions from those who had difficulty:[1]

Comment	Visitors
Make the ears larger	8
You have to look for the ears	2
Add Ear to "Try This"	1

Comments from those who experienced no difficulty:

Comment	Visitors
They were clearly marked	6
I was just wandering	7
Need a tour sequence	1
We started in wrong place	1

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[1] Several visitors made more than one comment.

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4. Did you ever refer to the audio tour map? Y / N

This question revealed a large difference in the two groups — the majority of Persisters used the map, whereas the majority of Browsers did not. Only one visitor had difficulty using the map. A Fisher Exact test for independence reveals that this difference is significant at the **p** = .02 level.

	Browsers	Persisters	Total
Yes	6	11	17
No	12	4	16

If Yes, In what ways did you use the map?

	Browsers	Persisters	Total
Find stops	5	6	11
Used only at beginning	1	3	4
Create a route	0	2	2

If No, Why do you think maybe you didn't use it?

	Browsers	Persisters	Total
Just wandered around	9	1	10
Didn't need it	2	1	3
Didn't have one	1	1	2
Hard to understand map	0	1	1

5. Did you have any difficulties using the audio device?

Virtually none of the visitors had any difficulty with the device.

Yes, I had difficulty	1
No, I had no difficulty	32

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6. Did the music and sound effects enhance or detract from your experience of the audio tour? Enhance / Detract

Most of the visitors felt that the music enhanced their experience by making it feel more real or setting the mood for the exhibit. Several of the positive responses mentioned the wind at Aeolian Landscapes. There was no difference between Browsers and Persisters in this respect.

Enhanced   26
Detracted   6
Not asked   1

Comments / suggestions from those who felt it enhanced their experience:

Comment	Visitors
Made it more real / set the mood	10
Increased interest	3
Helped tune out the background noise	1
The speakers were having fun	1
It helped me know I was at the right stop	1
It gave me a sense of the broken exhibits	1
It was OK	1

Comments / suggestions from those who felt it detracted from their experience:

Comment	Visitors
The music was louder than voices	1
It inhibited hands-on exploring	1
It was hard to distinguish it from the real experience	1
It duplicated the real experience	1
It didn't match the exhibit I was looking at	1

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7. And how about the volume of the speakers' voices — how was that for you?

Overall, the volume was either fine, or the visitor was able to adjust it to a comfortable level.

Response	Visitors
Fine	13
Adjustable, so fine	13
Fluctuated a lot	2
A little too soft	2
Too loud	1
Speakers repeated themselves sometimes	1
I couldn't hear the kid speakers	1

8. How about the speakers themselves who were talking to you on the tour — was there anything about them that you would like to comment on? (If V is confused: Like having a variety of speakers, like men and women, younger and older folks, that sort of thing — was there anything about that you'd like to comment on?)

Nearly all of visitors' comments about the speakers were positive.

Response	Visitors
Liked the variety	12
Fun	6
Clear	6
Knowledgeable	4
Want more women	1
One speaker seemed a little uncomfortable	1
Personable	1
Everyday language was good	1
Didn't like intro to Revealing Bodies	1
Didn't know what speaker was referring to	1
Didn't have to read	1
Couldn't hear them well	1
Casual	1
Beating Cells guy wasn't interesting	1

9. Was the length of the audio segments generally too long, too short, or about right? Why?

This question revealed a difference between the two groups. The majority of the Persisters felt that the segments were the right length. In contrast, most of the Browsers felt that some or all of the segments were too long. This may reveal a higher level of interest in or patience for audio tours in the Persisters group.

Response	Browsers	Persisters	Total
About Right	4	8	12
Too Long	4	0	4
Mixed-some too long	6	5	11
Too Short	0	1	1
Mixed-some too short	3	1	4
Mixed-some short some long	1	0	1

A Fisher Exact test for independence reveals a statistically significant group difference at the **p** = .07 level between "right length" and "too long OR too short":

Response	Browsers	Persisters	Total
About Right	4	8	12
Too long or too short	14	7	21

Photo sorting task results

To which tour stops did visitors go?

Figure 1 shows the number of visitors stopping at each tour stop, i.e., listening to the audio at that stop. Although there is an overall fatigue pattern, the Persisters and Browsers behaved quite differently:

- The Persisters visited nearly all stops equally, including those on the Mezzanine.

- The Browsers were responsible for most of the fatigue pattern: many of them visited only the tour stops that are in the Life Sciences section and the floor-level Matter/World section (Bays 5-13). Very few visited the stops in Seeing and on the Mezzanine.

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How interesting were the stops they visited?

On average, visitors found nearly every tour stop neutral to interesting. Figure 2 shows the average interest level (where 1 = Uninteresting, 2 = Neutral and 3 = Interesting) for each exhibit. Unfortunately, many visitors cast their vote based on the exhibit, not the audio tour, even when reminded by the interviewer to consider only the tour's audio content.

There were no large differences between the Browsers and Persisters in their interest in the tour stops.

Three of the stops (Chick Embryos, Geysers and Fruit Flies) seemed to produce a split among visitors — some found it interesting while about the same number found it uninteresting. Below, we provide a summary of the positive and negative comments made about these three exhibits:

Exhibit	Positive Comments	Negative Comments
Chick Embryos	Liked that they told you that it was alive	Disliked because there were broken petri dishes Speaker was too emotional Audio was too short Wasn't sure which petri dish to look at It had a conversation with a kid
Geysers	Enjoyed the coffee maker story Liked learning how it works	Disliked because it didn't hold attention It was hard to see eruption The 6ft geyser seemed broken
Fruit Flies	Liked the explanation of the genetics	Disliked because the audio gave no more info than the text I don't like flies

Any overall comments about the content?

Searching throughout the entire interview (all questions plus the sorting task), we found a few comments that visitors made about the content of the tour:

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(a) Conversations between speakers. Four visitors said that they like hearing conversations between speakers, while five visitors said they do not. Of those who did not, four explicitly mentioned the conversations involving kids as something they did not like.

(b) Reading labels vs. listening to audio. Fifteen of the visitors commented on this issue. Of those, eight said that they preferred reading labels and seven said they preferred listening to audio.

(c) Science content. Only one visitor complained that there was not enough science content in the tour. Many visitors commented that the language and explanations in the tour were at the right level.

(d) Anecdotes. Generally, tour stops with anecdotes were well-received. Several visitors commented on how wonderful the story at Echo Tube was. Sometimes, it was difficult for visitors to distinguish between the exhibit and the audio portion of the stop.

Exhibit	Positive Comments	Negative Comments	Total Commenting
Echo Tube	3 Vs liked story of crawling kid 4 Vs liked the echoing of it 5 Vs praise the anecdote in sorting task	.	5
Cafe Wall	1 V thought speaker was funny 3 Vs liked explanation 4 liked illusion	1 V disliked that it went on too long	5
Geysers	5 Vs liked coffee maker story 6 Vs liked explanation of geysers	2 Vs said it was broken 2 Vs waited too long to see it 1 V couldn't see eruption	10

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(e) General Information Tour Stops. With the exception of Revealing Bodies, these were less well-received. Sometimes, it was difficult for visitors to distinguish between the exhibit and the audio portion of the stop.

Exhibit	Positive Comments	Negative Comments	Total Commenting
Learning Studio	1 V said he related to technology discussion	4 Vs said it was boring, like peeping into library	5
Machine Shop	1 V wanted more about machines	3 Vs wanted hands-on, not info about building	4
PFA History	1 V liked background info		1
Prototyping Area	1 V liked learning what we do		1
Tactile Dome	2 Vs said it sounded interesting	1 V was frustrated that s/he couldn't do it	2
Revealing Bodies	5 Vs liked getting more info about picturing bodies	1 V wanted audio inside exhibition	5

(f) Broken Exhibits. The Focused conversation exhibit was broken throughout the data collection process, and the Live Beating Cells exhibit was broken for part of the collection process. Several visitors commented on this. Others also commented that too many exhibits in general were broken.

15. Did you ever try any of the exhibit activities that were suggested at some of the tour stops? Y / N
Could you please comment on the activities?

Nearly all of the Browsers and Persisters tried at least some of the suggested activities, and nearly everyone enjoyed the activities.

Short Response	Browsers	Persisters	Total
Yes	16	15	31
No	2	0	2

Comment	Browsers	Persisters	Total
Felt positive	14	13	27
Felt negative	1	0	1
Felt mixed	1	2	3

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16. **What did you think about the tour's general level of sophistication, like the language used and the kind of scientific explanations given?**

Nearly all visitors in both groups felt that the sophistication level was fine.

Response	Browsers	Persisters	Total
Good/fine	17	11	28
Too hard for kids	1	3	4
Too hard for adults	1	0	1
Too easy	0	1	1

Six visitors (18%) commented that some of the language was inappropriate for children.

Comment	Total
"Hell" should be removed from Magnetic Bacteria	4
"Sex" should be removed from Brine Shrimp Ballet	4

17. **If the museum charged visitors $2.00 to take the audio tour, would you pay to take it?**
Y / N   Why or why not? [Note: This follow-up question is different from that on the original plan.]

The Browsers were split on this question, with the slight majority saying they would not pay for the tour. The Persisters, however, nearly all said they would pay for it. A Fisher Exact test reveals this to be a statistically significant difference at the $p = .01$ level.

Response	Browsers	Persisters	Total
Yes, I'd pay $2	8	13	21
No, I wouldn't pay $2	10	2	12

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If yes, why would you pay to take it?

The Persisters seemed to be more predisposed to take audio tours than the Browsers. The majority of Persistors who would pay said they simply want audio tours or they usually take them in museums.

Response	Browsers	Persisters	Total
Price is reasonable	6	2	8
Added to experience	0	3	3
Usually do audio tours	1	2	3
Would want more stops	0	2	2
Prefer not to read	0	1	1
Would want it — unspecific	1	2	3

If no, why not?

Only a minority of the Browsers said they felt the price was too high. Most would not pay for an audio tour because either they did not like it enough or they prefer to read labels.

Response	Browsers	Persisters	Total
Price too high	3	1	4
Prefer reading	3	0	3
Don't need it	3	1	4
Uninteresting	1	0	1
Other	1	0	1

Appendixes:

- All interview questions.
- Figure 1 showing stop rates for each tour stop.
- Figure 2 showing interest level for each tour stop.

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Date: Day: Time: Location:

Age/Gender: ESL: N   Y   Yes, but fluent

Others in Group:

Thanks for agreeing to talk with us about the audio tour. We basically just want to know what you thought about it, so I'm going to ask you some specific questions about it. OK? Good, before we get into it, I just want to know....

1. Is this your first visit to the Exploratorium?   Y / N

OK, now I want to ask you a little about finding the tour stops and that sort of thing....

1b. When you were in line to get in, did you notice the sign advertising the audio tour? Y / N

2. First, about how many tours stops do you remember listening to?

   None   1   2-5   6-10   11+

3. Was there anything challenging for you in finding the exhibit stops on the tour?

4. Did you ever refer to the audio tour map? Y / N
    If Yes, In what ways did you use the map?

         If No, Why do you think maybe you didn't use it?

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5. Did you have any difficulties using the audio device?

Now I want to ask you about the sound effects and the speakers on the audio...

6. Did the music and sound effects enhance or detract from your experience
    of the audio tour? Enhance / Detract
    Could you say a little about that?

7. And how about the volume of the speakers' voices — how was that for
    you?

8. How about the speakers themselves who were talking to you on the tour
    — was there anything about them that you would like to comment on?
    (If V is confused: Like having a variety of speakers, like men and
    women, younger and older folks, that sort of thing — was there anything
    about that you'd like to comment on?)

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9. Was the length of the audio segments generally too long, too short, or about right? Why?

Now we're going to shift gears a little. I'm going to give you a pile of photos — there's one photo for every stop on the tour. What I'd like you to do is place each photo into one of four piles. The headings for each pile are right here — 1) these are the tour stops that you did not visit, 2) these are the ones that you found interesting, 2) these are the ones you felt neutral about, and 4) these are the ones you found uninteresting. So for each photo, would you please place it into one of the categories here? If anything comes to mind while you're doing it, please feel free to talk aloud as you do this.

[Notes:]   (Mark down each stop number they discuss.)

Great. So now I want to ask you...

10. Could you pick out any one of the Interesting tour stops and just tell me why you felt it was interesting?
    Number:

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11. And now could you pick out any one of the Neutral tour stops and tell me why you felt neutral about it?
    Number:

12. Finally, could you pick out any one of the Uninteresting tour stops and tell me why you felt it was uninteresting?
    Number:

13. What was your favorite tour stop and why? (If they choose same stop as "Interesting" before, ask for next favorite.)
    Number:

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14. What was your least favorite tour stop and why? (If they choose same stop as "Uninteresting" before, ask for next least favorite.)
    Number:

15. [Sweeping a hand over all the photos] Did you ever try any of the exhibit activities that were suggested at some of the tour stops? Y / N
        Could you please comment on the activities?

16. What did you think about the tour's general level of sophistication, like the language used and the kind of scientific explanations given?

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OK, last question:

17. If the museum charged visitors $2.00 to take the audio tour, would you pay to take it? **Y** / **N** If not, what would you pay?

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