

Media Pod

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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

Imaging Station – Formative Evaluation Media Pod

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PURPOSE

The purpose of this evaluation study is to identify

- any navigation difficulties visitors have with the media,
- what attracted and kept their attention on screens with movies and text,
- any points of confusion visitors have with what they see or read,
- what visitors think is the point of this exhibit, and
- connections visitors make between what they see and human beings and their own lives.

METHOD

- We draped a black cloth over the CRT monitor on the microscope user cart and used the touchscreen.
- Cued Interviews
- Visitors were recruited from the Life Sciences Area on the Mezzanine of the Exploratorium.
- Before each interview, the evaluator reset the media to begin at the introductory screen.
- Visitors were asked to use the media piece to look at whatever screen they like, for as long or as short a time as they liked. We asked them to point to what they were looking at.
- An evaluator noted which screen visitors looked at with a data collection tool implemented in FileMaker.
- Each visitor was asked a series of questions about what they saw. These questions are in Appendix A.

DATA COLLECTED

- N = 21
- Interviews were conducted on Saturday, June 5, 2004 and Sunday, June 6, 2004.

- Demographics

Gender	Count
Female	12
Male	8
Total	20 ¹

Age Group	Count
Adult	16
Teen	2
Child	2
Total	20 ¹

FINDINGS

Use

What difficulties did visitors have?

- Most visitors did not have any difficulty using the media piece.
- One visitor, however, suggested:

Visitor19: you should add a back button. I pressed "next" 1 too many times and didn't know how to get back to the page I missed.

Which screens did visitors go to?

- Table 1 tallies the number of visitors who went to each screen and the average dwell time at each screen. Note that these data give some initial indication on how deeply visitors explore the zebrafish storyline and how much time visitors spend on each of its pages. However, dwell time may change once the other storylines, Germ Busters, and Avoiding Aging are fully developed. Recall that these storylines were not complete at the time of this evaluation.

Table 1. Media screens visitors visited

Screen	Count (out of 21 visitors)	Dwell Time in seconds Mean (Median)
Introductory screen	21*	No data
Zebrafish (Healing Hearts)	21	23 (18)
Why fish	19	47 (42)
Compare hearts	21	40 (34)
Healing hearts	20	39 (26)
Healing hearts cont.	13	29 (19)
Germ busters	18	24 (24)
Worms (Avoiding Aging)	18	19 (18)

* All the visitors started with the introductory screen for this interview.

¹ Demographic information is missing for one of the interviews.

- Most visitors visited most of the screens, although there was a drop off deeper into the story, with only 13 visitors reaching the last screen of the ‘Healing Hearts’ storyline.
- On average, visitors spent 31 seconds on a screen they visit.

What story did visitors look at first?

- Table 2 shows which story visitors looked at first. Note that the setup biases towards visitors’ visiting the zebrafish story first since it is the first movie in the movie medley.

Table 2. Story visitors looked at first

Story	Count (out of 21 visitors)
Zebrafish (Healing Hearts)	10
Germ busters	4
Worms (Avoiding Aging)	7

What did visitors look at on a page?

- Table 3 shows the tally of visitors who looked at each component: the movie, the story text, and the activity description for each screen.

Table 3. What visitors looked at

Screen	Movie	Story Text	Activity Description
Zebrafish (Healing Hearts)	14 (out of 21)	20 (out of 21)	N/a
Why fish	16 (out of 21)	15 (out of 21)	15 (out of 21)
Compare hearts	Human heart: 20 (out of 21) Zebrafish heart: 18 (out of 21)	18 (out of 21)	N/a
Healing hearts	Normal: 18 (out of 21) Abnormal: 17 (out of 21)	14 (out of 21)	17 (out of 21)
Healing hearts cont. ²	10 (out of 12)	10 (out of 12)	9 (out of 12)
Germ busters	14 (out of 21)	17 (out of 21)	N/a
Worms (Avoiding Aging)	8 (out of 21)	16 (out of 21)	N/a

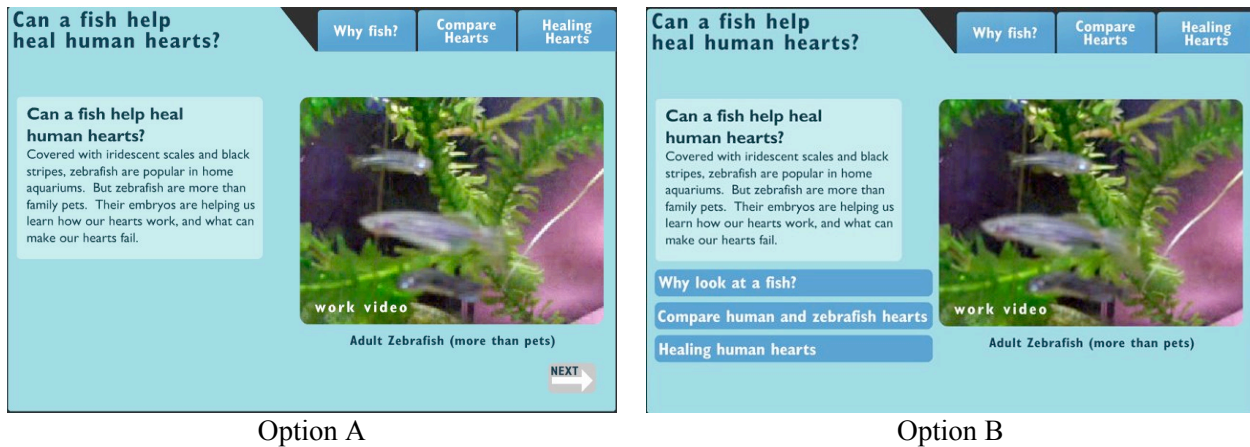
² A problem with the FileMaker instrument caused us to lose some of the data for this screen.

- Overall, more visitors looked at the story text than the movie for the first screen for each of the 3 stories: Healing Hearts, Germ Busters, and Avoiding Aging. However, this difference is not significant.
- In subsequent screens for the Healing Hearts story, visitors were equally likely to look at the movie and the story text.
- A majority of visitors did look at the activity description associated with the movies on subsequent screens.

How did visitors navigate through the media?

- We were concerned that visitors would not know to use the tabs and the story icons to navigate through the stories. To see if this was the case, we looked at how visitors jumped from screen to screen. We found:
 - 19 visitors used the NEXT buttons
 - 20 visitors used the Story Icons at the bottom of the screen
 - 16 visitors used the tabs.
 - 5 out of 21 visitors never used the tabs; instead, they only used the ‘next’ buttons to navigate through the zebrafish story.
- We also asked visitors to choose between 2 options, as shown in Figure 1. Option A reflects the current implementation, while Option B was designed to make the tabs appear as buttons and to make more explicit the information behind each tab. We found that:
 - 9 out of 21 visitors preferred Option A. These visitors explained that they felt the buttons in Option B were redundant, which would actually be confusing, and made the interface look too busy.
 - 7 visitors preferred Option B. They thought that the buttons would give a better indication of what’s available and a better description of the subsequent pages.
 - 5 visitors had no preference.

Figure 1. Option A and Option B for screen design



Option A

Option B

Did visitor prefer that movies play automatically?

- We asked visitors if they would like the movie on the “Why Fish” screen to play automatically or to play only after they press play. We found
 - Only one visitor preferred that it start to play automatically since it “catches your attention more if it just popped up.”
 - Otherwise, 18 out of 21 visitors liked the current implementation in which visitors press play to start the movie. They explained:
 - Visitor1: I think I would rather press the play button, or else people wouldn't take the time to read this (points to large text box) and then watch the movie.
 - Visitor2: I think the kids like to push play to see it.
 - Visitor21: this is good. You want to have control of when it plays
 - 2 visitors had no preference.

Points of confusion

- Most visitors claimed that the media was straightforward and that they had no trouble understanding what they read or saw.
- A few visitors found the following confusing:
 - About a particular movie
 - Visitor4: No. Just I was wondering why when they showed this (fish embryo), why it went so fast.
 - Visitor5: Just the video of the fish, dividing the cells, I didn't know when it was finished.
 - Visitor10: One thing that was confusing for me- when this circled (beating heart cells), how come this cell is a three-prong thing, and this is different shaped. Maybe if I knew more about it it wouldn't matter but I don't know why they're different shapes.

- About a particular explanation
 - Visitor18: doesn't tell you why mutant heart is broken. Why is the other normal?
 - Visitor19: a graphic illustration of how the heart valves work [would help]
- Overall
 - Visitor6: I can't really see why they're all interrelated really, these three different topics.
 - Visitor19: you should be able to read, so this can't be for a very young child. Although the language is easy. Made it very clear to see what's going on.
 - Visitor20: maybe some of the words. Maybe for younger people, it'll be difficult to understand, like this [iridescent].

The point of the exhibit

What did visitors think was the point of the exhibit?

When asked, visitors thought the main message of the exhibit was:

- Studying other organisms can help improve human life (13 out of 21 visitors). For example,
 - Visitor2: Well, that they're trying to see how much humans can compare to certain fish or animals to see how much they [animals] can help us prevent heart attacks and other diseases.
 - Visitor10: To be aware of our environment around us. That we can learn how to study zebrafish and I guess worms and things and learn what we learn from them; how we can take knowledge that we're learning from them to help us physically.
 - Visitor12: I think it's about health and learning a little better, or being able to recognize, fish or organisms that are going to help people live longer healthier lives.
 - Visitor16: how you study different animals to help people, like understanding heart disease
- Looking at other organisms helps us learn about ourselves (3 visitors). They mentioned:
 - Visitor19: I believe this is about a study of comparative bio. What we're learning about our heart, using zebrafish as model, to show that there's great similarity
 - Visitor21: how studying different animals and living things can help us learn more about ourselves
- We are like other organisms (4 visitors). For example,
 - Visitor5: Um, like how we are related with other species.
 - Visitor9: Just about how we're like animals, like everything else on this earth.
- Don't know (1 visitor)

Connections

Did visitors see a connection between what they saw and humans?

- Two visitors saw no connection between what they saw and read on the media piece and human beings. For example,
 - Visitor2: Well, the only thing I would be careful to say is that everything here should be creationist and not leaning towards evolutionary philosophies. I personally don't believe in evolutionary philosophies and so bringing my kids here I have to say "Okay, let's discuss this."
- Most (16 out of 21) visitors thought there was a connection between what they saw on the media and humans. More specifically, they made the following connections:
 - Studying other organisms can help improve human life (8 visitors)
 - Visitor1: Well yeah because human beings get heart disease, human beings, we were always studying the aging process to figure out how to prolong life, and part of what kills us is that we're not immune to everything.
 - Visitor13: yeah, it said you study the fish to learn about human heart disease
 - Visitor20: yeah, it said that their heart is a lot like ours, that they you can study them to help people
 - We share similar structures (8 visitors). For example,
 - Visitor6: Yeah I mean the hearts, they were showing how they (fish and human) were both beating and similar.
 - Visitor8: I think so. Well, we're looking at similar basic elements of life that are common throughout all living things. Or most living things, I would imagine.
 - Visitor17: yes, you showed the similarity between a zebrafish and human heart
 - (Three visitors gave no explanation)

What personal connections did visitors make with what they saw?

A small majority of visitors made a personal connection with what they saw and read:

- Someone I know suffers from a disease the media talks about (3 visitors)
 - Visitor1: Just the aging thing, but I don't have heart disease.
 - Visitor16: no. Well, my husband has heart problems. That's it.
 - Visitor19: my daughter had adrial fibrillation.... Where her secondary pacemaker has irregularity, and one chamber beats faster than other, similar to what you talked about in there. There's a corrective procedure that fixed it.
- I have pet fish (3 visitors)
 - Visitor11: Pet fish.
 - Visitor20: I think I have this same fish in my tank at home. They do something to their DNA so that they'll glow under black light

- Visitor21: not directly. I have an aquarium a while ago. That's the only thing I can think of.... and maybe general health concern, prevent heart disease and such
- I studied biology (3 visitors)
 - Visitor14: I'm biologist. That's it
 - Visitor15: my school time. I was very interested in bio; I took some advance classes in bio. We had microscopes and we looked at different animals. It's very interesting to me.
 - Visitor18: when I was in college, I was a biochem major, studied some anatomy. Not zebrafish though
 - Research into disease prevention and cure can help me (2 visitors)
 - Visitor2: Well, I can see that they're trying to compare the heartbeat of the fish to the human heartbeat. If they could find something there that might help us, that would be great.
 - Visitor21: not directly. I have an aquarium a while ago. That's the only thing I can think of.... and maybe general health concern, prevent heart disease and such
 - I was a baby once (1 visitor)
 - Visitor4: Yes me as a baby, although I didn't know what I looked like (looking at fish embryo). This one too, yeah the ultrasound (of heart) [like babies].
 - It helps me think about creationism (1 visitor)
 - Visitor12: Other than just it helps (me) to reflect on creation.
 - 9 visitors saw no personal connection

SUMMARY

- Most visitors did not have any difficulty using the media piece and claimed that they had no trouble understanding what they read or saw.
- Visitors visited most of the screens, on average spending about 30 seconds on each screen they visited. A majority of visitors looked at the suggested activities that accompanied the movies in the media piece.
- Overall, we did not find a visitor bias towards looking at the movies over reading the text.
- Most (16 out of 21) visitors thought there was a connection between what they was on the media and humans, and a small majority (13 out of 21 visitors) thought that the main point of the exhibit was to show that studying other organisms can help improve human life. Furthermore, a small majority (12 out of 21) made a personal connection with what they saw and read on the media piece.

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APPENDIX A**Interview Questions**

1. Was there anything difficult or confusing about this? What?
2. Was there anything confusing about what you read or saw? What?
3. What do you think this exhibit is about? What is the point of this exhibit?
4. In your opinion, is there any relationship between what you saw here and human beings?
5. Does it remind you of anything in your own life?

I would like you to look at this screen. [Go to zebrafish - why zebrafish?]

6. There's a movie on this screen. Would you prefer that it plays automatically as soon as you go to the screen, or would you prefer that it waits until you press play?
7. There's an activity described here [point under the movie] Did you notice it? Do you think you would want to try this activity? Why/ Why not?

I would like you to look now at this screen. [touch zebrafish box at bottom]

8. We're thinking of 2 different ways of designing this screen: what you see here [on monitor] and what you see here [give printout]. Which one do you think is better at letting you know there are other screens to explore next?
9. [Point to the white boxes on the bottom of the screen] What do you think those are?
10. Did you have any trouble knowing where the buttons are or where to touch on the monitor to make something happen?