

Seeing: Betsy's Hand Exhibit Evaluation

Veronica Garcia-Luis and Noah Feinstein

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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

“Betsy’s Hand” + Light Intro Formative Evaluation Report

Veronica Garcia-Luis and Noah Feinstein

5/17/02

Purpose:

- To find out visitors impressions of the plastic-lit sphere that projects an image of the visitors hands that in turn represents the eye.
- To find out what connections visitors make between the plastic eye model and the introductory text.
- To find out about visitor confusions and needs regarding this prototype.

Methods: 10 cued interviews conducted in the Seeing Area (near Shadow Box) on Saturday, 5/11/02, and Wednesday, 5/15/02.

Gender: F (4 of 10) M (6 of 10) **Age:** 8-12 (1 of 10) 13-17 (1) 18-20s (4) 30s (2) 50s (2)

Findings

What visitors noticed: *Before being asked specific questions, visitors were asked what (in particular) they noticed or figured out about the exhibit.*

- 5 of 10 visitors immediately associated Betsy’s Hand with the eye. 2 mentioned the retina specifically, while another two talked about “the back of the eye.”
- 4 visitors were struck by the inversion of the image (“that my hand was reflected upside down in the back of the eyeball”).
- 4 talked about how you could focus the image by moving your hand (“well, it gets the basic concept of focusing on the back of the eye across”).
- 2 jumped immediately to a use problem: not knowing where to look to see the image.

What visitors thought the exhibit was trying to show:

- All 10 visitors connected the exhibit to the eye, and how the eye works. Their responses ranged from general (“the workings of the eye, and how it reflects the image”) to specific (“how the human eye works; how it takes the light that it sees and forms a picture on the retina”).
- 6 visitors mention light and things very closely connected with light (lens, image, reflection). 3 talked about focusing.
- 2 visitors talked about the inversion of the image.
- 2 stressed the role of the brain
- 8 visitors were asked what the white part of the sphere represented – 4 identified it as the retina (other answers included “the back of the eye,” “light coming through your pupil”).

What confused visitors about using the exhibit:

- 5 of 10 visitors were initially not sure where to look for the image (from observation: this was actually near universal, but only 5 folks mentioned it as a source of confusion).
- 3 visitors wanted more specific instructions on how to hold their hands or focus the image.
- 1 visitor didn’t know what the lens was supposed to represent.

Visitor difficulties with the cluster intro label:

- All visitors were asked to read the label aloud. 5 of 10 stumbled over the phrase: “translates the cells’ responses into neural signals,” in the third bullet point. 4 stumbled over “a layer containing rod and cone cells at the back of the eyeball,” in the second bullet point.
- 4 of 10 visitors thought the label text was too technical or contained too much difficult vocabulary. General consensus among these visitors was that the bullet points started out easy enough and became too technical later on. One visitor suggested moving the third bullet point to the end, where it could enrich the label for those really interested.

What visitors thought the cluster intro text was trying to say:

- All visitors thought the cluster intro label was about seeing and the eye. Overall, about half of visitors were able to put together the three pieces (light, eye and brain: “that light shines into your eye and the retina interprets it and sends it to your brain”). 6 talked about the role of light or images in vision. 4 visitors talked about the role of the brain in interpreting images. 4 stressed the role of the retina specifically.
- One visitor noted that the relationship between Betsy’s Hand and the label wasn’t clear : was the label supposed to be instructions or explanation?

What questions and suggestions visitors had about the exhibit:

- 4 of 10 visitors wanted more content – either explaining the technical passages or saying more about why the image was inverted.
- 3 visitors thought it would be nice to add color, both to make the exhibit more attractive and to see what effect it would have.
- 2 wanted to rearrange the exhibit or add more instructions to make it easier to see the image.
- 2 thought it would be nice if the sphere in Betsy’s hand looked more like an eye.
- In response to a different question in the interview, one visitor suggested adding toys, cards with words on them, and various other objects that you could hold up in front of the sphere.

Interpretation and Recommendations

We have so far been operating under the assumption that Betsy’s Hand was pretty self-explanatory and didn’t require more explanation than we offered on the “hold your hand 4 inches” card. The clearest finding of this formative study is that visitors *do* need a little more guidance about where to look and what to do. While most of the visitors in this sample eventually figured it out, there is no guarantee that visitors who were not on their best (interview) behavior would stick around and try different things. Also, since visitors notice the inverted image, as well as their ability to focus the image, it might be nice to suggest refer to these things somewhere.

The only other strong signal visitors gave was about the difficulty level of the cluster intro text (i.e., too difficult). One way to add clarity to the text without cutting down on important content might be to have it tie in more closely with the exhibit. For instance: “the lens at the front of the eye focuses the light on the retina (represented by the white part on the back of the plastic sphere). In a real eye, this area on the back of the eye is covered with cells that detect the light and send signals to the brain, which interprets them. Because the cells in the retina are so closely linked with the brain...” Adding a diagram, or labeling the parts of the plastic sphere, might also

help visitors make this connection and translate the abstract label text into something more concrete.

Another thing to strongly consider is finding a way to relate the Betsy's hand exhibit with the introductory text where it makes sense such as when you're talking about the retina you can mention, "like the frosted part on the back of the eye model". This will provide more information about the exhibit experience while relating to the introductory label. If this combining approach is successful then you might consider removing the last sentence of the introductory label relating to the exhibit.

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Betsy's Hand Interview Questions

Seeing Formative: Betsy's Hand / Light intro cued interview.01

Date: _____ Time: _____ Interview # _____

Gender: M F
 Age: 8-12 13-17 18-20s 30s 40s 50s 60+
 Group Size: 1 2 3 4 5 + class
 Group: A A+K A+T T (13-17) K (<12)
 ESL: N Y Yes, but fluent
 Observations:

So, what I'd like you to do is just use this exhibit and read over this text over here.

1. Was there anything that you discovered or noticed in particular while you were using this exhibit?

2. What do you think this exhibit is trying to show? (possible probes: anything to do with the eye? what do you think this white part, back here, is supposed to represent?)

