Distilled Light
Post-Redesign Evaluation

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THIS IS A POST-REDESIGN EVALUATION REPORT

After an exhibit has been renovated, redesigned, or refurbished in preparation for the Exploratorium's move from the Palace of Fine Arts to Pier 15, an interview and observation study is conducted. The purpose of the study is to identify any major issues that would require immediate attention prior to the move. This collection of redesign evaluations will serve as a baseline of information for the Exploratorium's new exhibit set at Pier 15.

Post-redesign studies like this one **are conducted quickly,** which may mean:

- small sample sizes
- expedited analyses
- brief reports

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Study Goals

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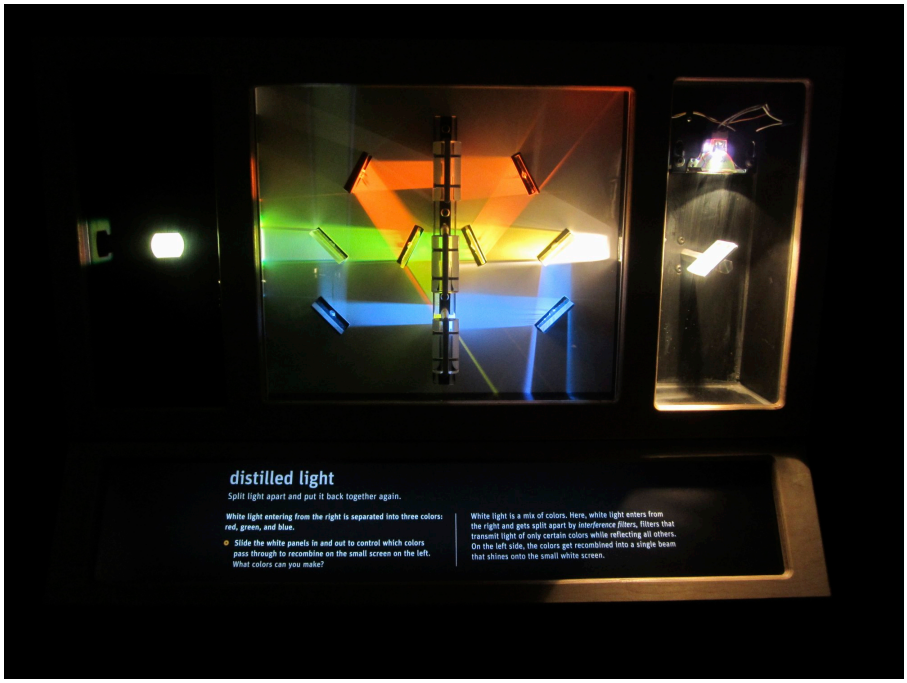
General goals:

- To confirm that visitors are able to access and use the exhibit
- To confirm that visitors can build a basic understanding of the exhibit's content
- To uncover visitors' frustrations and confusions
- To understand whether visitors move on from an exhibit for intrinsic or extrinsic reasons

Exhibit Description

White light is broken up into the primary colors—red, blue, and yellow, by dichroic filters, and then recombined with similar filters into white light again. At DISTILLED LIGHT, visitors can experiment with color mixing by blocking or filtering the light before or after it has been broken up.



Methods

Uncued observations and interviews were conducted. A researcher randomly selected visitors who crossed an imaginary line on the floor that stopped facing the exhibit with two feet planted and either looked at or touched the exhibit for approximately 15 or more seconds.

Uncued visitors do not know they are part of the study until after they finish using the exhibit so their behavior can be considered representative of normal use patterns. This means that some of the visitors in this study may have used the exhibit only briefly.

Visitors were approached after they left the exhibit and asked if they would be willing to participate in a 7-question interview about their experience at the exhibit.

Demographics

Gender	Count (N=9)
M	3
F	6

English as a Second Language?	Count (N=9)
N	9
Y	0

Estimated Age	Count (N=9)
8-12	0
13-17	0
18-29	3
30s	2
40s	2
50s	2
60+	0

Visitor Group Composition	Count (N=9)
Adults-only	9
Adults with children	0
Adults w/ teens	0
Adults w/ teens and children	0

Findings

Holding Time

This is the time the visitor spent using or otherwise engaged with this exhibit. The amount of time a visitor spends at an exhibit is influenced by many factors and can indicate level of engagement or interest, but not as a measure on its own.

Time at exhibit	mm:ss (N=9)
Mean	0:33
Median	0:24
Minimum	0:12
Maximum	1:37

Visitor Behaviors

Visitors were observed as they used various parts of the exhibit.

Use filters with all three sliders pulled out at once?	Count (N=9)
Y	7
N	2

Moved any of the sliders?	Count (N=9)
Y	9
N	0

Visitor Interest

Visitors were asked about their interest in the exhibit and why they rated from “not interesting” to “very interesting” (1 – 7).

Interest Level	Count (N=9)
High Interest (6-7)	0
Moderate Interest (4-5)	6
Low Interest (1-3)	3

Visitor responses:

M	Well, I'm a graphic designer. I am interested to see what I know in theory in practice. [Tell me more?] I have studied light theory, RGB in particular. It's a novel illustration of that.
M	I'm a designer, so the color and refraction of color. I like exhibits that deal with color and light. The manipulation of color and light.
M	It explains about splitting colors. Since I taught art I am always looking for that. How it (light) is refracted.
M	I thought it was interesting to manipulate how the light comes through, and the angles. But, for my age bracket it is not too riveting.
M	I think its white light coming and somehow it changes color. I couldn't really tell.
M	Interesting, but I saw another exhibit like it that explained it better. Not much free choice, too rigid in what you can do (motioned to the handles).
L	I like how it depends on which colors you block, what shows and how you blend them to make different colors. I was watching through here (motioned to the exhibit.) [Where were you looking?] I was looking here (pointed to the right side of the sliders in the center panel) and then here (pointed to the left side of the sliders in the center panel). (In other words, she was not looking at the right or left panels that hold the light source and the small screen, respectively)
L	It's cool how it makes white light, but that's it.
L	It wasn't exciting. [Would you mind elaborating on that?] Pretty simple exhibit.

Visitor Frustration or Confusion

Visitors were asked to tell us if there was anything confusing or frustrating, what the source of the frustration was, and whether or not it made them want to leave the exhibit and move on to another one.

Source of visitor frustration or confusion*	Count (N=9)	# that wanted to move on
Unsure what caused color change	1	1
Took time to figure out	1	1
Nothing Frustrating or Confusing	9	--

*Totals may add up to more than N=9 because visitors gave more than one response.

Visitor Understanding

Visitors were asked what they think the exhibit was about with the goal to determine whether or not they have a basic understanding of the concepts presented and to identify possible areas of misunderstanding. We acknowledge that this study has a small sample size and that these findings illustrate trends and may not be representative.

It appears that visitors DO have a basic understanding of concepts presented.	X
It appears that visitors DO NOT have a basic understanding of concepts presented.	

Visitor responses:

- A good real life representation of the separation of colors and light and a very good illustration for someone new to it.
- The way different colors interact and how, if you block them off, they change.
- Wow, um, that's an awkward question. I don't know that I would tell a friend, but cool. It is about reflecting light and when colors meet. Basically, I didn't read it, but how light changes colors as you play around with the handles.
- Shows what white light is. [Tell me more?] I noticed all colors (sliders), when up, made white light, but one by one, a new color formed when you moved the cards (sliders).
- Alright. Pretty cool. [What would you say it was about?] About the different angles of light with colors and shapes.
- Refraction of colors. [Anything else?] It would be fun for kids to do. A fun way to explain science and art at once.
- The way you can change how white light creates color by changing the angles with the slides. The refraction of the light. [Anything else?] No.
- I didn't understand well enough to explain it. I'm guessing it was a prism but I'm not sure.
- How red, green, and blue lights are central components of white light, and we can mix them to make other colors. [Anything else?] No.

Visitor Reasoning for Leaving the Exhibit

The goal of this question is to explore how open or closed-ended the exhibit seems to be for the visitor. Visitors tend to leave exhibits for intrinsic reasons, such as feeling bored, or finished with the experience, or for extrinsic reasons, like having to go to lunch or being distracted by another exhibit. Leaving for intrinsic reasons could suggest a more close-ended exhibit experience.

Reasons for moving on to the next exhibit	Count (N=9)
Intrinsic	5
Extrinsic	3
Unclear / Uncodable	1

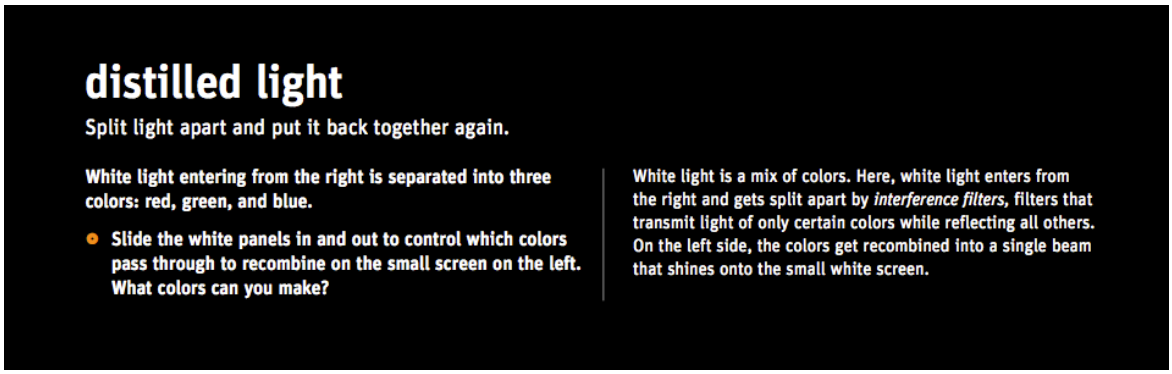
Visitor responses:

Intrinsic	Nothing else to play with (laughed). Nothing else to pull or play with.
Intrinsic	I kind of got bored with it. [Tell me more?] Not much to do. Saw it and that's it.
Intrinsic	I had done all the combos, I think.
Intrinsic	Pretty simple (the exhibit). It was over fast. Only so many combinations to pull out.
Intrinsic	We did all possible pairs and all combos, so we moved on.
Extrinsic	Time. Next thing (laughed).
Extrinsic	Trying to find my son. [Anything else?] No.
Extrinsic	To see what else was here. [Anything else?] No.
Unclear/Uncodable	My familiarity, that's all. Perhaps if I wasn't so familiar with the subject I would have spent more time.

Conclusions

Based on this small sample, we conclude that the redesigned exhibit does not require immediate remediation. This evaluation did not identify sufficient impediments to visitor use, engagement or basic understanding.

APPENDIX: Graphic Panel



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