

Stage Cam

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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 Stage Cam

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BACKGROUND

A previous front-end study indicated that visitors become especially interested in the exhibit when they realize that the image they are seeing on the main viewing monitor is an extreme close-up of the very small specimens that are on the slide under the microscope. Furthermore, a formative study (with the amoeba) suggested that some visitors do not readily connect the image they see on the main monitor with the microscope behind it, in the Imaging Station room. To help visitors better see the connection between the equipment and the specimen image, the Imaging Station team decided to mount a video camera to the microscope stage which would show the slide moving as visitors controlled the microscope.

PURPOSE

The purpose of this study is to determine:

- If visitors watch the video from the stage camera
- What visitors think the stage cam is showing
- If more visitors make the connection between the equipment and the image with the stage cam

SETUP

Figure 1. Stand-alone exhibit setup



Details of the setup can be found in Appendix A.

Note that this study was conducted for the Zebrafish specimen only. This is because the other specimens (i.e., the amoeba and the sea urchin embryo) are much smaller and viewed at higher magnification, and the change in stage position would consequently be too small to see with the stage camera.

METHOD

- Uncued Interviews
- Visitors were approached and asked a series of questions (Appendix B) after they had finished using the exhibit. We interviewed visitors 8 year-old or older who had stopped at the exhibit and tried to control the microscope for 3 or more seconds.

DATA COLLECTED

Times. Data were collected during these days:

Day	Date
Tuesday	7/8/03
Saturday	7/12/03
Sunday	7/27/03

Demographics

Gender	Count
female	9
male	12
Total	21

Age Group	Count
adult	9
teen	5
child	7
Total	21

FINDINGS

Did visitors look at the video from the stage camera?

Seventeen out of 21 visitors (81%) looked at the stage cam image. However, 5 out of those 17 (29%) mentioned that they did not look carefully at the image from the stage cam. This means that slightly less than 60% of the visitors paid much attention to the stage cam image.

What did visitors think the video from the stage camera was showing?

Visitors who looked at the stage cam image:

- thought it showed the slide on the microscope (7/17, 33%)
- thought it showed the microscope (3/17, 14%)
- didn't know what it was showing (4/17, 19%)
- thought it showed the embryos (3/17, 14%)

So, ten out of 17 (47%) visitors knew they were looking at the microscope equipment with the stage cam. But, others were confused or did not know what they were looking at.

Did more visitors make the connection between equipment and image?

We compared our results with an earlier study (without a stage cam) to determine if visitors were better able to make the connection between the microscope and the specimen image with the stage cam in place.

Did visitors know the specimen image was live (and not pre-recorded)?

	With Stage Cam	Without Stage Cam
Zebrafish was live	18	17
Zebrafish was pre-recorded	3	0
Total	21	17

There was no statistical difference in visitors knowing that the image of the specimen was live or pre-recorded, between the two groups (having the stage cam and not having the stage cam); Fisher's Exact Test, $p=.24 > .05$

Where did visitors think the specimens they were viewing were?

	With Stage Cam	Without Stage Cam
On the microscope	12	15
Elsewhere ¹	6	2
Total	18	17

¹ These visitors thought that the specimen was

In the room	2 visitors
On the computer	2 visitors
In a tank	1 visitor
didn't know	1 visitor

There was no statistical difference in visitors knowing that the specimen was on the microscope between the two groups (having the stage cam and not having the stage cam); Fisher's Exact Test, $p=.23 > .05$

The stage cam did not seem to help visitors better make the connection between the microscope and the image. However, note a large percentage of the visitors already knew the connection between the equipment and the specimen image: there was limited room for improvement.

SUMMARY AND NEXT STEPS

- Slightly less than 60% of the visitors paid much attention to the stage cam image.
- Of the visitors who looked at the stage cam image, a slight majority was confused or did not know what they were looking at.
- The stage cam did not seem to help visitors better make the connection between the microscope and the image. Many visitors were already able to make that connection for the Zebrafish specimen without the stage cam.

The stage cam did not help, but instead was sometimes ignored or caused confusion. Therefore, we recommend that we not use the stage cam with the standalone Axiovert exhibit.

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APPENDIX A: Setup

Equipment used for stand-alone

Axiovert200M

MCU28

Display

- Optronics DEI750D camera
- HP L1800 LCD Monitor – 18inch

Metamorph version 5.0

Game pad control: joystick2002_11_21_limits_scaled

Interactive Media (on touch screen) : z-fish (rev.2) Projector

Settings

Magnification 5x

Search Area = 4000r microns

APPENDIX B: Interview Questions

1. How interesting would you say that was? Would you say that exhibit was ...
- | | | | | |
|---------------|---------------------------|---------|-------------------------|-------------|
| Uninteresting | Somewhat
Uninteresting | Neutral | Somewhat
Interesting | Interesting |
| 1 | 2 | 3 | 4 | 5 |
2. What made it _____ for you?
3. Did you have any trouble using the exhibit? What?
4. Do you have any questions about what you saw? What would you like to know about what you saw at that exhibit?
5. When you were playing with this exhibit, did you think that what you saw on the large monitor was live or pre-recorded (for example, from a video tape)?
- LIVE* *PRE-RECORDED*
6. [Only if they said it's LIVE] Where do you think the living things that you saw are?
7. Did you look behind the glass / *point to area behind glass in the picture* /? YES NO
8. Did you look at this /*pt to small monitor in picture*/? YES NO
9. Do you believe there is any relationship between these things, this /*point to media monitor, monitor, small monitor* /? [For example, does this have anything to do with that in any way?]
- YES NO
10. How do you think they are related?
11. Can you make a guess? What do you think this /*Show picture and point to scope*/, is?
12. Can you make a guess? What do you think this /*Show picture and point to small video cam monitor*/ is showing?