

Avalanche

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THIS IS NOT A DEFINITIVE FINAL REPORT

FORMATIVE evaluation studies like this one often:

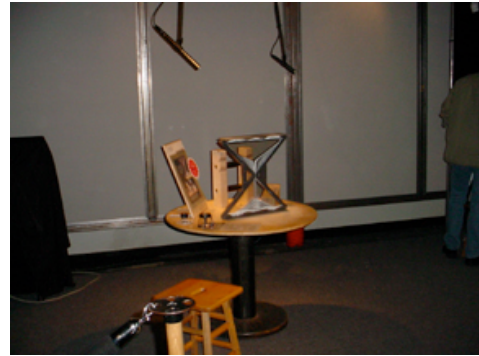
- **are conducted quickly**, which may mean
 - small sample sizes
 - expedited analyses
 - brief reports

- **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

Avalanche
Formative Evaluation Report
January 2003
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Avalanche with video



Avalanche

Goals

- To find out if visitors use the video to help them understand the exhibit.
- To find out if the video enhances or detracts visitors from using the hourglass.
- Determine the number of groups making audible observations and generating audible explanations.
- Determine holding time for video and no-video set up.

Methods

On November 23, 2002, four hours of videotape were recorded, with the video accompaniment alternating every half-hour of taping. A total of 116 visitor groups were observed using Avalanche, of which 59 were comprised of more than one English-speaking visitor, providing us the opportunity to overhear audible observations and explanations; 30 qualified groups visited the exhibit while the video was available; 29 qualified groups had no video accompaniment. (No English=7, single visitors=49, crossover video/ no video=1).

Results

Holding Time:

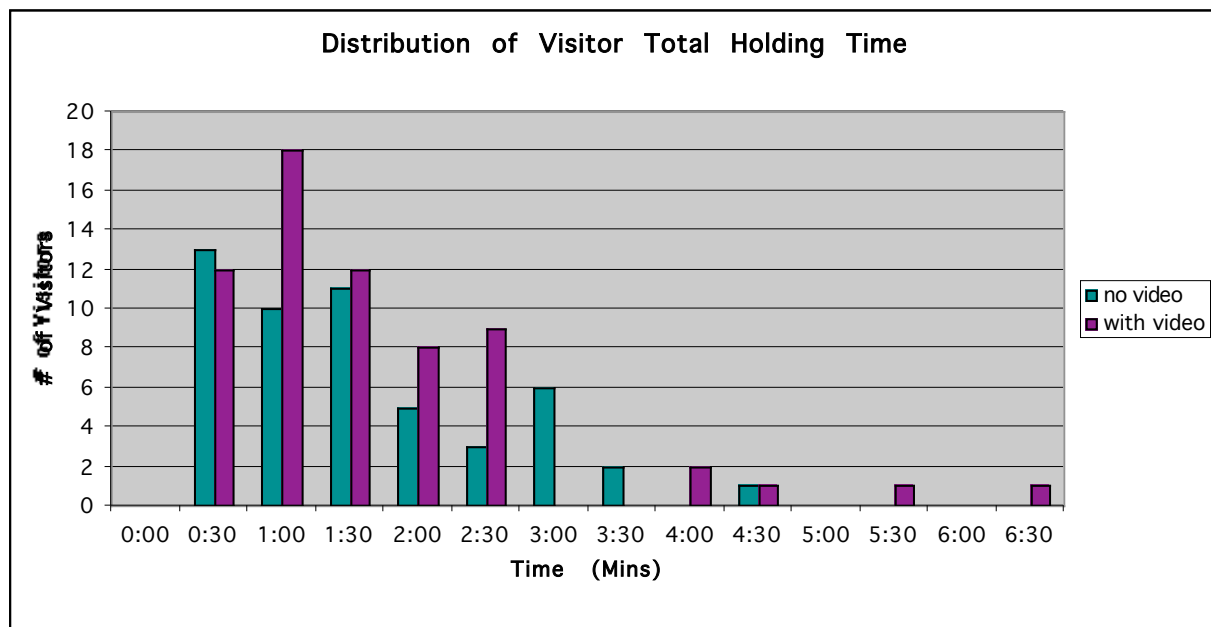
There is no statistical difference in the holding time between groups who had the video and those which did not.

Median holding time, with no video: 1:11

Median holding time, with video: 1:04

Mean holding time, with no video: 1:20

Mean holding time, with video: 1:22



Audible conversation about what was going on in the hourglass:

- With the video: 17 of 30 (57%) qualified visitor groups had an audible conversation (any observations by groups were counted, so tally is more than number of groups)
 - 7 made observations about layers, mixing, or the colors
 - 3 made observations about the avalanche
 - 4 made observations about size of the grains
 - 2 made observations about angle of repose/shape of grains

- With no video: 13 of 29 (45%) qualified visitor groups had an audible conversation (any observations by groups were counted, so tally is more than number of groups)
 - 9 made observations about layers, mixing, or the colors
 - 2 made observations about the avalanche
 - 4 made observations about the size of the grains
 - 1 made observations about the angle of the hourglass
 - 2 made observations about the angle of repose/ shape of grains

Audible conversation about the hourglass and sand using the video as an aid:

- 6 of 29 (21%) of qualified visitor groups made audible comments about what was going on in the video. Other groups had conversations about how to use the video but did not comment about any of the sand or hourglass behaviors.

The following an example of how one group used the video:

B: Daddy what is this?

Dad[reading]: Take a closer look at the sand's motion. [Dad is looking at the video]

B: Is this doing that? [Pointing back and forth]

Dad: Well it's saying this is what the sand does- it layers. They videotaped that and you're controlling how quick this goes.

Boy: but I'm not doing anything

Dad: No no no the videotape, it's like a movie but you control the movie.

B: Like you can reverse it?

Dad: Yes, see how it made layers? First black, then white comes down. [Points from video to hourglass]

Number of flips:

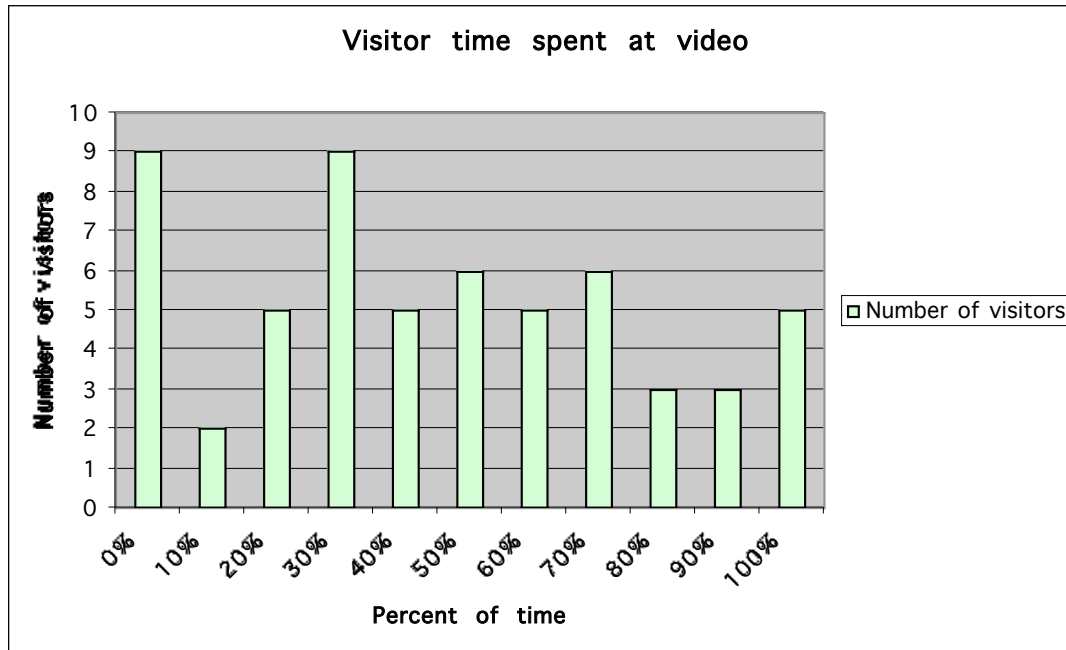
There was no significant statistical difference between the number of flips of the hourglass by visitors who had the video available or did not.

(Includes non-English and single visitors)

| Count | Flip upright | | Flip to short edge | | Flip to long edge | | Total flips | |
|-------|--------------|-------|--------------------|-------|-------------------|-------|-------------|-------|
| | no video | video | no video | video | no video | video | no video | video |
| 1 | 19 | 25 | 7 | 4 | 15 | 10 | 41 | 39 |
| 2 | 5 | 6 | 0 | 0 | 6 | 1 | 11 | 7 |
| 3+ | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 |

How much of their total time did visitors spend at the video?

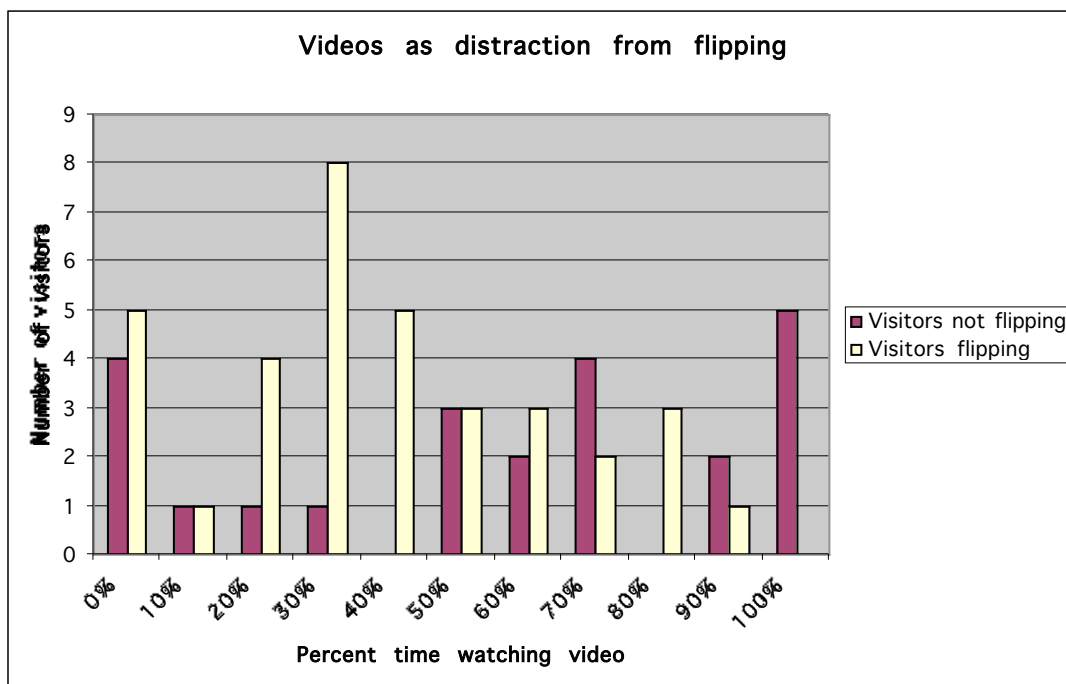
Visitor groups were mixed in the amount of time they spent with the video, with most spending at least some time watching it.



Were visitors distracted from using the hourglass if they used the video?

Visitors who watched the video more than 50% of their total time flipped the hourglass significantly fewer times than visitors who did not spend as much time watching the video ($p=.003$)

Conclusions



There is no statistical difference between visitor groups with the video and without the video in their total holding time, the number of times visitors flip, or in the amount or type of visitor conversation, so it seems that visitor interaction with the exhibit is not affected by the presence of the video.

Acknowledgements

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