Turntable

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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

Turntable
Formative Evaluation report
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Goals

We had noticed that visitors seemed to interfere with each other at this exhibit; as one person would get a disk rolling, another person would launch a new disk that would crash into the first disk. We wondered whether adding a barrier around the exhibit would reduce the number of visitor groups that used the exhibit simultaneously, thereby allowing visitors more control over the turntable. Would this lead to more activity? Better investigations and discussion about what's happening?

Methods

We compared two versions of the exhibit. See Table 1.

Table 1. Two versions of exhibit tested in this study.

Full Access	Limited Access
N = 128 groups	N = 169 group
	

Results

Effectiveness of Barrier

The netting was not effective at preventing multiple groups from using the exhibit simultaneously. Table 2 shows that the percentage of visitor groups who worked alone in the Full and Limited Access versions was identical at 38%.

Table 2. Percentage of visitor groups working alone in each exhibit version

Exhibit Version	Visitor Access	Barrier method	Visitor groups working alone
1	Full		38%
2	Limited	Netting	38%

Visitor group size

There were no significant differences in the number of children or adults per group across the two versions.

Holding time

An Analysis of Variance (ANOVA) revealed a significant difference in holding time between the versions, with the Full Access version holding visitors longer ($\mathbf{F}_{294} = 4.5$, $\mathbf{p} = .04$). See Table 3.

Table 3. Holding time for each label

Access	Median holding time (minutes)	Mean holding time (minutes)
Full	1.7	2.3
Limited	1.4	1.9

Using the exhibit

The Full Access visitors took marginally more actions with the disks (spinning, rolling or sliding them) than the Limited Access visitors ($\mathbf{F}_{295} = 3.3$, $\mathbf{p} = .07$). Most of the difference was due to Full Access Visitors spinning disks marginally more often than Limited Access visitors ($\mathbf{p} = 12$). See Table 4.

Table 4. Disk actions by visitor groups in two versions

Access	Average number of times visitors...			
	Took any action	**Spun disk(s)**	**Slid disk(s)**	**Rolled disk(s)**
Full	10.3	5.9	2.3	16.9
Limited	7.1	3.1	2.6	17.1
Significant?	Yes	Marginal	No	No

There were no differences between the versions in the number of visitors who had conversations about the spinning or sliding disks.

Conclusions

Adding the netting barrier did not seem effective at helping visitors have investigate the properties of the rolling disks. On the contrary, the barrier seemed to reduce the holding time of the exhibit, and the overall number of disks visitors placed onto the turntable.

Recommendations

Perhaps we should consider redesigning the exhibit into stations where the label focuses on less challenging and more challenging patterns. The objects at each station could be different, from a simple stick and eraser to the more complex loop object (that looks like a magnifying glass without the lens). Perhaps with stations, visitors would get the idea of making more complex patterns in the sand.

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