Chapter 16:
Visitor-Tested Exhibits

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The Science Museum of Virginia has been using formative evaluation to develop its exhibits for nearly ten years. During this period, the Museum has experimented with different ways to integrate evaluation into a more traditional exhibit development process. As a result, the staff has learned quite a bit about how to use evaluation more efficiently. Since this medium (i.e., the printed page) prevents the display of actual prototype exhibits, I've chosen to briefly answer a few of the questions often posed as one contemplates a leap into formative evaluation.

How does one begin the process of formative evaluation?

There are at least two ways to interpret this question:

- How does one begin doing formative evaluation the first time?
- How does one begin the process with a particular exhibit?

It's probably best to consult someone with evaluation expertise when beginning one's very first project. Pick an exhibit project which seems straightforward (at least on the face of it). Be out with real visitors as soon as possible. The tendency always seems to be to postpone that as long as possible, but it can be very motivating.

When beginning that and each subsequent project, the usual course of events is:

- Discuss and define objectives, ultimately stating them in behavioral/observable terms.
- If time permits, conduct preliminary interviews to establish the visitors' entering knowledge, experience and attitude base.
- Build prototypes as quickly and cheaply as possible.
- Observe and interview visitors.
- Make changes as necessary and continue until visitor outcomes are satisfactory.

Personnel: Who should be involved?

I think it is very helpful to hire a trained evaluator (although certainly not essential):

- Everybody already has a lot to do already, and it is very easy to rationalize assigning evaluation a very low priority.
- Collecting meaningful and useful information does require some expertise and it may be more cost effective (at least initially) to hire that expertise than to develop it. Given the shortage of trained museum-based evaluators and the tight budgets of most museums, two or more museums might consider sharing such expertise. Collaborative ventures among museums might incorporate such skill sharing.

In the long run, it may be most beneficial to either add such expertise to one's own staff or develop it in an existing staff member (and re-assign some or all of his/her existing responsibilities). At my own museum, all of the exhibit project staff participate in the evaluation process in some way, but most of the systematic data collection is done by either myself, my full-time assistant, or other part-time volunteer or paid staff.

Goal setting

Early in an exhibit's development, goals must be stated in terms of observable visitor behavior (see Mager, 1975). The goals are typically stated by the project director (a scientist at my museum), but other team members (educator, designer, evaluator) often participate in the translation from general goals into specific behavior objectives. In practice, I've found it useful to define objectives for a cluster of related displays, rather than for individual components (since I think it unlikely that significant cognitive or affective change will result from experience with only one display). The number of objectives stated will depend on the complexity of the subject matter involved; I do think it's better (although often more difficult) to develop a very limited set, or at least agree on high priority objectives.

Building prototype exhibits

- Initial prototypes should be made as quickly and cheaply as possible (typically, time and money spent on a prototype is inversely related to the scope of changes made during testing – i.e., if you spend a lot, you just re-write labels). A good rule-

of-thumb is no more than one person-week and $100 in materials.

- Mock-ups need not look awful, however. There are materials (e.g., triple thickness cardboard, or Tri-wall[1]) that are reasonably durable, relatively inexpensive, and much easier to work with than plywood and formica. We often recycle old exhibit cabinetry. The goal is not to make ugly exhibits, but to save time and money.
- It is important to include the display's critical features in even initial mock-ups (e.g., size and placement of components, text, pictures, etc.). Other design elements can often be introduced as the mock-up progresses.
- How long should mock-ups remain out on the exhibit floor? First stage prototypes are usually pretty fragile and visitors usually interact with them under the supervision of a project team member (often the project director or scientist involved in the project). Subsequent versions are more sturdy and may remain in public areas for 6-8 weeks (or even longer) as they undergo testing and revision. While an exhibit might never be considered finished, the modification cycles do get longer and longer. Active development may occupy from two weeks to three or four months. Several factors influence how long an exhibit may be tested, including: (1) the complexity of the topic; (2) the team's prior experience with developing similar exhibits; (3) other projects competing for the team's attention and energy; and (4) the level of visitor traffic.

Working with visitors

We test most prototypes in our regular exhibit spaces (very fragile first stage mock-ups are often tested in a classroom or other more protected area). When cued visitor testing is underway (i.e., visitors are invited to interact with an exhibit), the exhibit is cordonned off so that the cued visitor is not interrupted by others. During noncued testing, visitors are free to approach the exhibit and interact as they wish. Visitors are randomly selected for observation and interview, and most visitors are happy to participate. When an exhibit is first introduced, decisions are often made after relatively few visitors have been observed/ interviewed (e.g., 10-15). At that stage, problems are usually very obvious. As an exhibit is improved, larger samples may be gathered. Note that more informal observations and interviews are often done by other members of a project team (the scientist, designer, fabricator, etc.) and that is certainly encouraged.

Using visitor data to make exhibit design decisions

During formative evaluation, one can measure:

• The attractiveness and holding power of an exhibit (i.e., the extent to which the exhibit attracts visitors and keeps their attention).
• The extent to which visitors who stop can successfully operate the exhibit (can they follow the directions, see the spark, turn the dial, etc.).
• The extent to which visitors who interact with the exhibit demonstrate the cognitive and affective changes described by the exhibit's objectives.

Visitor response (or lack of response) to an exhibit often pinpoints problems, but does not always dictate solutions. Our project teams meet weekly, visitor data is shared and possible modifications are discussed.

Visitors vary in their behavior and opinions. We look for patterns in the way visitors use and respond to an exhibit, and rarely make major decisions based on data from only one visitor. Occasionally, one visitor may describe the experience in a way that puts other visitors' behavior into clearer perspective, or make a particularly helpful suggestion.

In order to interpret data from any visitor more sensibly, it is important to collect some information on background and experience, especially any that might be related to the exhibit being tested (e.g., when interviewing visitors about electricity exhibits, we check their education, advanced degrees, experience with any home/hobby electronics and current occupation).

Getting past that first project

Exhibit prototypes are nearly always more popular with visitors than with staff and trustees. While small-scale, "guerrilla" projects can be conducted when no one is looking, long-term adoption of the process is only possible with support from top-level management. Our own director's commitment to the process has also generated trustee endorsement (or at least tolerance).

I have found that the evaluation approach to exhibit development is very much like religion – there's definitely a "leap of faith" involved, and those who don't believe are rarely convinced by any argument. After spending considerable energy on staff conversion (often with only

minimal effect) we now concentrate more on hiring staff whose backgrounds and interests make them more enthusiastic participants in our exhibit development approach from the outset.

References

Mager, Robert F. (1975). Preparing educational objectives. Palo Alto: Fearon Publishers.

Footnote

1 - Packaging Services of Virginia, is a distributor for the Southeast (Phone: 703-234-9292). For information about nationwide distribution, call 914-373-8185.