

The Museum Impact and Evaluation Study: How Visitors Relate to Science and Technology Museums

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The Museum Impact and Evaluation Study (MIES) was a two-and-a-half-year research collaborative involving nine museums from around the United States. Originated by the Museum of Science and Industry (MSI) in Chicago, it was funded by the Joyce Foundation of Chicago. The project began in January 1990 and was completed in 1992.

Participating museums and their respective representatives were:

Museum of Science and Industry, Chicago— Peter Anderson (Project Director), Deborah Perry (Project Manager);

Buhl Science Center (now Carnegie Science Center), Pittsburgh— Al DeSena;

Chicago Academy of Sciences— Carol Fialkowski, Janice Siska;

Children's Museum, Indianapolis— Karol Bartlett;

Discovery Place, Charlotte— Beverly Sanford;

Field Museum, Chicago— Carolyn Blackmon, Alexia Trzyna;

Franklin Institute, Philadelphia— Minda Borun;

New York Hall of Science, Corona Park— Ted Ansbacher;

Reuben Fleet Science Center, San Diego— Elsa Feher.

This project was initiated at MSI when the staff became interested in the latent learning that occurs in science centers as an outcome of people's visits. As they observed and talked with visitors over time, they were struck by the multitude of things that appear to be important aspects of the museum visit. It was noted that people engaged in animated conversations, they seemed to be enjoying themselves, they waited in long lines to see certain special exhibits, and they kept returning to see exhibits they had seen year after year. Questions began to arise about the intense relationships that appear to develop over time between visitors and museums. What are these relationships? How do they develop? Are they as powerful as they appear to be? Why are visitors willing to wait in line for such long periods of time just to spend a few minutes with certain exhibits? Why do visitors get so upset when we say we are going to change or remove an "old favorite?"

The Museum Impact and Evaluation Study was an exploration of those relationships that develop over time, and was intended to help staff members understand how they develop, what characterizes them, and how they are maintained. Each of the institutions in the collaborative worked on issues of particular interest to them, with the common theme of how visitors relate to museums and museum exhibits.

Due to space limitations, and because this information is published elsewhere, a detailed description of the study will not be offered in this paper. For those interested in more details about MIES, copies of one-page summaries from each of the sites are available from the author. An overview of MIES is presented in the *Proceedings of the 1991 Visitor Studies Conference* (Perry, 1991a) and another is published in the *ILVS Review* (Perry, 1991b). In addition, a three-volume research report is available from the Museum of Science and Industry (Anderson, 1993). The emphasis of this paper will be to highlight a few of the more interesting findings of the MIES project. However, these are not all of the important findings, and perhaps not even the most powerful ones.

The Relationship Visitors Form with Science Centers

There seems to be a growing debate among the museum community about the societal role of science centers (is it a place for learning or a place for fun?), and the relationship between this role and visitors' expectations. Not long ago the annual ASTC conference took on the Education vs. Entertainment issue. We seem to be continually wrestling with what our visitors are looking for when they enter our doors.

Not surprisingly, the visitors surveyed for this study did not characterize their museum visits as either more education than entertainment, or the reverse. They stated that both were important, and they often described their visit to be as much a family-centered, social, or recreational opportunity as an educational or entertainment experience. The implication here is not that any one of these is more or less important for our visitors than any other, but that science centers are seen as environments that provide a range of experiences, all of which are important. The data from this study indicate that the way we can best serve our visitors is to concentrate on the many roles the museum plays in peoples' lives—the many experiences visitors expect and appreciate.

In addition to filling educational, entertainment, social, and recreational niches, many visitors in this study saw the museum as a good place to visit, to share with others, and particularly to share with children. The data indicated that these visitors held the view that museums are inherently good and a worthy way to spend their time. There was also some indication that within science centers, certain favorite exhibits and certain areas such as resource centers were deemed particularly virtuous.

The Relationship Visitors Form with Exhibits

When visitors described the things they liked about exhibits, interactivity and learning something new were high on the list. For children in the 6- to 10-year-old range, there was also an indication that exhibits which (a) involved the whole body, such as walking on a giant lever to get weighed, or (b) immersed them in the exhibit, such as walking through a heart or cave, were particularly powerful. It is important to note that this was an indication of which exhibits these children liked the most, and not necessarily the ones at which they learned the most. This corresponds with research on the importance of concrete experiences for children. It may also indicate why certain exhibits such as the *Coal Mine* or *U-505 Submarine* at Science and Industry in Chicago become icons of the museum. These kinds of experiences tend to become very memorable for children.

Another interesting finding was that when given the opportunity to share with us how they categorize and think about exhibits, visitors used a number of different classification schemes. The three most prevalent with visitors were (a) where it was located, e.g. "these are all in the east wing and these are in the hall over there;" (b) the medium it used, e.g. "these are all computer exhibits, and these have lots of text;" and (c) the topic it presented, e.g. "these are all about ships, these are about flying and these have to do with health." Other responses were (a) that it had a personal connection, e.g. "these are things I have fond memories of;" and (b) the particular audience for whom it was appropriate, e.g. "kids would like these." When asked to tell about an exhibit, many children described what they had done there: "Oh, this is where I tried to do the computer program and then Sally tried to shove me out of the way."

The implication of these classification schemes is that when visitors store their memories of the museum visit, they categorize them into manageable chunks that may be very different from one visitor to another. We may think that the message of the exhibit is the important element that visitors are taking away with them, but there is some indication that they are just as likely to think in terms of the type of exhibit it is, or where it is located. The importance of location as a classification scheme points to the importance of properly orienting visitors so they don't feel lost when they are visiting the museum.

The Relationship Visitors Form with Icon Exhibits

Two of the institutions in this study (the Museum of Science and Industry and the Buhl Science Center) concentrated on the relationship visitors develop with icon exhibits. For the purposes of the study we defined an icon as an exhibit that:

- a. has a following of people who have formed an attachment to it or affection for it;
- b. is symbolic of the institution; and
- c. is recognized or familiar to a large number of people.

Three selected exhibits appeared to satisfy the criteria of being icons: the *Miniature Railroad and Village* (MRAV) at Buhl, and *Christmas Around the World* (CATW) and the *Coal Mine* (CM) at MSI. MRAV and CATW were holiday icons in that they are on display only during the Christmas season. The *Coal Mine* is on display year round.

We found that people's relationships to these icons had at least three aspects: an educational component, a personal component and a social component. We found that in general, all three components were important to the visitors regardless of the particular icon. Examples of the educational component included: liking to look at the details, getting a sense of history, and liking to see how things work. Examples of the personal component included: having fun at the icon, wanting to come back, getting a warm and comforting feeling, and experiencing the excitement. Examples of the social component included: liking to share the experience with others, feeling that it is important for kids to experience it, and getting a sense of family unity.

One interesting finding about this icon study was that there was some indication that all icon relationships (i.e. the relationship that develops between a visitor and an icon) have all three components, educational, personal, and social, regardless of the particular icon exhibit. Our hunch going in was that personal and social factors would be far more important components of an icon relationship than education. However, this was found not to be the case, as all three components were very important for each of the three icons.

On the other hand, there was a strong indication that these three components are more or less important depending on the particular icon. For example, all visitors' relationships with the three icons had educational, personal, and social aspects to them. However, the educational aspects were more important to the *Coal Mine* visitors than to the visitors to the holiday icons.

Another interesting finding regarded levels of engagement with icons. For this study, engagement was inferred from visitors' ability to agree with statements indicating whether they cared about, were interested in, or felt strongly about an exhibit. Three levels of engagement were identified. The study indicated that visitors felt far more strongly about icons than had been anticipated. Approximately 90% of respondents indicated a moderate or greater level of engagement with these exhibits. Only 10% had minor levels of engagement. Although this study examined visitor relationships to three specific icons, there is some indication that this may be

characteristic of people's attachments to icons in general. Further research is needed to assess levels of visitor engagement with non-icon exhibits.

Motivation to Visit

The motivation for coming to the museum was suspected to be the strong attachment that visitors felt towards icon exhibits and other old favorites. Visitors said that this was not the case. They repeatedly said that they came to the museum to attend a class or to see a special exhibit—not to visit an exhibit they had already seen. The exception to this was with the *Miniature Railroad and Village* at the Buhl Science Center, which was only open seasonally. However, even though these old favorites did not provide the impetus for a museum visit, they were a very important part of the visit—an essential part of the package called “doing the museum.” In the development of long-term attachments to museums, it appears that icon exhibits play an important role because they are familiar and comforting, but must be coupled with other experiences that are new and exciting.

Data Collection Techniques

One of the purposes of this study was to look at a variety of data-collection methods. One that was particularly interesting was the use of the Polaroid camera as an aid to interviewing.

At the Children's Museum in Indianapolis, it was very important to include children's perspectives in the study. Unfortunately, it is often difficult, if not impossible, to get kids to open up and be reflective and articulate their experiences. At the Children's Museum, 6- to 10-year-old visitors were given cameras as they walked in the door, and told to take pictures of exhibits they wanted to discuss later. This technique proved to be extremely useful in encouraging children to talk about their museum experience in a way that was meaningful for the study. Children seemed to experience a real sense of ownership toward their pictures, and they enthusiastically shared that with the interviewer. It was not unusual to have interviews last as long as 30 or 40 minutes.

Another use of the Polaroid technique was investigated at the Franklin Institute Science Museum. Visitors were selected at the end of their visit and asked to accompany an interviewer to their favorite exhibits and to photograph them. Again this process of photographing seemed to greatly enhance the interview process. The photographs were later used in a sorting activity with a different set of visitors. Subjects were asked to sort the pictures into any number of categories of their own choosing. The purpose of this exercise was to understand better the way visitors think about and remember exhibits. This technique also proved to be very useful for getting visitors to verbalize concepts and perspectives that otherwise remain hidden.

Conclusions

The material presented here is a brief highlight of some of the findings of the Museum Impact and Evaluation Study. The final research report includes a detailed description of the research, including all the results. Although it was not part of the study design, perhaps the most powerful outcome of this enterprise was the act of participating in a research collaborative for two and a half years. As a result of their research, participants learned about their institutions and visitors, and grew professionally. All in all, in spite of confusing times and hard work (or maybe because of it!) it was a rewarding and useful experience and is highly recommended to other institutions wanting to find out how to serve their audiences more fully.

References

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