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### **Sociocultural Theory in Museums: Insights and Suggestions**

Sue Allen

As an educational researcher and evaluator at the Exploratorium, I am often grappling with what learning is, and how to measure it. In response to the article by Leinhardt, Shauble and Martin, I asked myself: "How would these ideas apply to my own work?" Some of my thoughts are as follows:

1) *The article emphasizes the "processes of learning, rather than simply its outcomes."* For me, this means paying attention to the direct, moment-by-moment interactions of visitors with each other and with objects, rather than relying on summary interviews at the end of an exhibit or exhibit element. One of the appealing things about this is that it invites me to study learning when and where it happens, in all its full complexity. I can watch a real blend of teaching and learning, affect and cognition, individual and social activity, without having to filter it with a series of specific questions to an individual.

Perhaps we can take this as encouragement to be professional people-watchers, both more often and in more sophisticated ways. For example, we can "zoom in" on visitors' learning processes by looking at their words, expressions and gestures in great detail, or we can "zoom out" to get a more holistic view by following their activity patterns through an entire visit.

2) *The research agenda focuses on learning as "meaning-making," rather than in terms of behavior.* This seems to me like an important distinction. Unfortunately, since meaning is very personal, it is almost impossible to know what meaning is being constructed just by watching people's movements. If we embrace the central role of meaning-making in learning, then I think we must question the use of tracking and timing data in isolation, because such data show where people spent their time, and not what their experiences meant to them.

As an example from my own experience, there is an exhibit at the Exploratorium called "suspense." It was designed to show feedback operating in an electromagnetic system, and it features a metal ball held suspended by a magnet. Observations of visitor behaviors were quite positive: visitors manipulated the ball and magnet successfully, stayed at the exhibit for extended periods, and showed signs of excitement and pleasure. However, when we asked visitors what they thought the exhibit showed, many replied that it was a model of the solar system with the ball representing the earth. Without the opportunity

to hear visitors' own interpretations of their experience, we would never have realized the exhibit's tendency to generate spurious meanings!

By presenting learning in terms of both process and meaning-making, this article brings home to me the value of doing two things in tandem: watching the detailed activities of visitors in museums, and listening to their interpretations of those activities.

3) *The article characterizes museums as "places of dialogues," including implicit dialogues where our exhibits and objects speak for us.* To begin with, I take this as a sobering reminder to keep our museum floors in excellent condition, because a neglected or poorly functioning exhibit tell visitors about us just as clearly as a working exhibit does. More broadly, though, it raises questions in my mind about how we present ourselves to visitors while we are implicitly "conversing" with them throughout their museum visit. Do we intend to come across as an all-knowing, objective authority? Would we rather take on multiple, diverse voices in our dialogue with visitors? I would like to study the effect of adding a new component to some of our exhibits, where we let the individual developer speak more explicitly to visitors about his or her intent, through a written piece or a video clip.

4) *The article proposes that researchers and practitioners engage in real collaboration, "pursuing an agenda together."* This seems particularly important if we decide, as they suggest, to attempt studies that are iterative "design experiments." Large-scale, iterative design is not a single-person endeavor. So I wonder: how could I encourage my colleagues to join in this kind of collaborative research agenda? I think the great majority of museum practitioners already have a personal commitment to visitor learning. However, there are many factors driving the development of exhibits, and research on learning is only one of them.

I believe that researchers and practitioners might come together around a common wish for a practical vision of what learning looks like, and a common language for talking about it. Most of us are good at recognizing gross failures in our exhibits (such as no holding power, or catastrophic failures in usability), but the subtleties of learning are much more difficult to recognize. As a way to start, I would like to invite interested museum colleagues to meet on a weekly basis to look at videotapes of visitors in the museum, at a range of exhibits. Video discussions are a powerful and under-used technology for learning to "see" transient and subtle things in real-life settings. The group could be led (at least initially) by a professional researcher skilled in recognizing the nuances of learning in real situations, and different members of the group could talk about what they see as successful learning experiences on the museum floor. As well as being an interesting activity, this would help us to clarify what it is we value in our museum, and to start to build a useful vocabulary of things we could recognize as aspects of learning. For example, could we learn to recognize when visitors are explaining, asking, guiding, watching, recounting, experimenting, collaborating, reinterpreting, exploring, making connections, or drawing analogies? Could we see how aspects of our exhibits helped or hindered them as they did these things? If we started with the types of learning we really

want visitors to engage in, then surely it would be worth our time to learn to recognize evidence for them.

5) *Finally, the article discusses the power of narrative, and encourages us to explore the impact of stories on visitors' interest and motivation.* I think this is a fascinating direction of study, and one that could also bring together researchers and museum practitioners.

For example, we could encourage visitors to tell stories of their own, based on their relationship with the museum. We might ask visitors to make a short video of what they remember from their first visit, or what they expected before they came, or what happened during their current visit. Visitors might find it inspirational or comforting to hear someone else's account of how he or she experienced the museum. Also, such narratives could be used in learning research, both as data in themselves, and in terms of their impact on listeners. Visitors' stories might be an excellent arena for bringing together the ideas of learning-as-process and learning-as-meaning-making.

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Sue Allen received her Ph.D. in science and mathematics education from the University of California, Berkeley, in 1994. Since then, she has been working as an educational research and project evaluator at the Exploratorium in San Francisco. As an evaluator, she works to identify barriers to visitors' understanding or appreciation of exhibits under development. As a researcher, she looks at visitors' experiences from a more theoretical perspective. By working in both worlds, she hopes to contribute to a closer collaboration between educational researchers and museum professionals.