# Museums and Exploratoriums

December 21, 2006

Original link

---

The San Francisco Exploratorium is widely regarded as one of the finest hands-on museums in the world. There are spinoffs in the San Francisco airport and a Klutz book. Like Richard Feynman, the museum has become something of a touchstone of rightness for the science-minded community.

The Exploratorium is no doubt a fine museum, as far as such things go, but like all museums, it is deeply flawed. Like most media of American education, museums are hugely ineffective edifices.

The museum presents a golden opportunity to teach. You have a crowd that is explicitly seeking out knowledge, coming to you in person, giving you a large chunk of their time, and accompanied by their friends and family. It is hard to imagine a more ideal setting for education. And yet, this golden chance is squandered by boring exhibit designs.

Many museums simply present nominally educational things, like pieces of art or natural specimens of science, with a couple sentences of explanation. It is not clear what one is actually supposed to learn from this and in practice the answer seems to be: not much.

Science museums take things another step by showing actual examples of physical principles, and the Exploratorium goes a step further by letting the kids control them. But in my experience although there were many interesting principles on display, there was little learning. Each exhibit has been regarded as a little toy, to be pushed and prodded until you get bored and move on to something else.

It's not the visitor's fault: the exhibit makes the principle at work less than clear and even if someone was interested in reading the accompanying text, it rarely says much more than the name of the phenomenon; no actual explanation is provided.

Museums have infuriated me on this front since I visited them as a little kid. I remember drawing up plans for a genuinely educational museum, and although I was extremely young at the time, the general principles still seem sound: split people up into groups, have them try to solve real problems, encourage them to sit and engage with something over time instead of flitting from exhibit to exhibit, make it just as rewarding for adults as well as kids. (My more specific ideas from that period, involving floating chairs going down rear-projection tunnels, seem a little sillier.)

But even in the multi-exhibit model used by the Exploratorium there is much that could be improved. The exhibits could use what Tufte calls "small multiples" to give kids a physical intuition about a phenomenon by letting them change the relevant variables, rather than just showing them one case. The descriptions could give the force vectors and equations for each examples instead of just the name. Some of it might go over kids heads, but even just getting them accustomed to such things is a valuable skill.

Museums, like lectures, seem to be one of those things that are simply taken for granted as a necessary part of being cultured. Cities have to have them, citizens have to visit them. Everybody involved feels virtuous about the enterprise and nobody ever asks if anything is being learned.