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Learning and Change: from macro to micro

Why do some ideas that are seemingly identical feel generative and interesting in one setting and more superficial and narrow in another? Why do some science centers feel more alive and intellectually rich than others regardless of their size?

This talk takes the point of view that the heart, soul and life of science centers is that the ideas themselves are not static, but continually change and these changes can increase the effectiveness of the idea and thus the effectiveness of an institution.

This talk is about change based on learning and learning based on change. And this is different from change just for change sake. We've all seen far too many examples of science centers and museums that have a rotating set of exhibitions that have little coherence or connection with the museum, or have any rationale for being there except to try to draw more people. The change I am focusing on is change based on learning – learning how to do an idea better based on trying it out, as well as the learning that can happen when developing a new idea

I imagine that all of us here would say were for change, but it doesn't just happen and has to be deliberately addressed in the way exhibits and programs are developed and designed and the attitudes of staff

I will discuss a few examples of this form of change based on my 25 years with the Exploratorium working with the international science center community.

First off:

The opening is the beginning

One of the best things that happened to Frank Oppenheimer in his initial planning of the Exploratorium is that he didn't have enough money to carry out all of the big plans he had and thus had to open unfinished – thank god

in the wonderful open building there was
lots of empty space to fill –
if Frank had had enough money he would have created a
horribly dysfunctional design of substructures to fill the place

In opening unfinished Frank learned the value of having a flexible
open space that could be changed over time as ideas evolved.

Frank did have a solid core concept of themes or topics for starting
– however he probably would also have developed a number of
not so good, mediocre exhibits as well as good – the exhibit ideas
on the themes **evolved** as he and his staff got smarter about
design and content and as grant funds were received to develop
the ideas

Advice Frank started telling other museum people was to “never
finish” -

to regard new exhibit areas as well as existing areas as subject to
change

- change should be expected and designed for
- key factors besides money, staff attitude, develop process and
design itself

Staff Attitude

The staff need to be skilled but also, equally important, staff
needed to have an attitude that whatever they're doing/developing
is something that is modifiable/changeable if they or someone
else comes up with a way to do it even better

Process of Design for change in new exhibits

Having the attitude needs to be combined with a development
process for exhibits and programs that allows for change –
getting a working prototyped built as soon as possible to show to
other staff and to the public
to not spend a lot on materials and time before trying it out

Design itself of Existing Exhibits

design to enable change, from text panels to the exhibit itself
sometimes years later we will see a better way to build something
for example,

Exploratorium “classics” also changed/improved over time

In addition to individual exhibits,

sections have changed/evolved

perception into cognition, recognizing the change in the field; vision into seeing

Attitude on change goes for programs as well

the willingness of staff to try another way, challenge their assumptions

final idea I want to end with is that

Change is not necessarily growth

there is a common confusion that change means growth

Once an institution is established it must learn to change without necessarily growing in size, rather growing in depth of ideas –
growing a culture of learning
– growing a capacity to learn, change and adapt.

Exploratorium is not growing in terms of overall number of exhibits on the floor – in fact it is shrinking

In new efforts to better learn from our visitors a change we have made is to make our themes more explicit

Having few walls to encourage flexibility and conceptual interconnections between areas of the Exploratorium can also increase confusion – we have begun to focus on ways to make themes more apparent

Visitor research has led to a new collaboration to study informal learning, to better understand the interactions and motivations on the floor, what counts as learning, and how to improve our effectiveness on the floor and in programs and apply to the classroom

CILS – Center for Informal Learning and Schools
(www.exploratorium.edu/cils) – understanding the learning in informal science centres to help science teaching and learning in formal sector.

although Frank Oppenheimer always wanted stronger affiliations with universities this kind of program came about long after an infrastructure was in place

As it can be with any idea that is in the public domain, there can be a wonderful alchemy created in the transformation of known exhibit and program ideas. The new forms bring new ways of thinking to the museum community which then creates a generative cycle of ideas.

The heart, soul and life of science centers is that the ideas themselves are not static, but continually change and these changes can increase the effectiveness of the idea and thus the effectiveness of an institution.

Frank Oppenheimer's 'never finish' idea changed, evolved, into Goéry Delacôte's culture of learning – Goéry Delacôte's 'learning' is the point between one question and the next