

SCIENCE BY DESIGN

ASTEN - Fellowship Report

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Background

In August 2013 I received a fellowship from the Australian Science Technology Educators Network (ASTEN) to attend the Creative Exhibition Development workshop in Sydney at the Australian National Maritime Museum.

During the time leading up to the workshop, I was managing a project at the Queensland Museum to investigate the feasibility of redeveloping our Sciencentre and looking to develop concepts for promoting scientific literacy in the context of increasing cross-over between audience-centred commercial culture, cultural tourism and the museum sector.

Creative Exhibition Workshop

The ASTEN workshop explored the possibility of an interactive discovery gallery connected with activities and installations along the harbour-edge connected to the Australian National Maritime Museum (ANMM). Denise King and Claire Pillsbury from the Exploratorium (San Francisco) presented two sessions during the workshop exploring the science by the bay and the approach to scientific exhibition development at the Exploratorium.

Over the course of the two days, the workshop invited attending participants to hear from key staff of the ANMM and use a collaborative design-thinking approach to developing new concepts for the ANMM discovery centre. Each table worked as a team and regularly rotated through a series of activities including site investigations, audience interviews and intercept testing of concepts to determine the feasibility, viability and desirability of new developments to the ANMM building.

Hearing from Claire and Denise introduced an internationally renowned perspective on how serious scientific concepts can be approached in both an accessible, enjoyable way – without compromising on the ‘science’.

Being widely recognized as one of the birth places of ‘interactive’ museum exhibits and showing no signs of retracting their well-known approach to ‘hands-on’ science, hearing from these two leading creative and exhibit designers was immensely valuable and reaffirmed some ideas that I have encountered in other areas of my work at QM.

The intersection of Science and Design

Science is the triumph of experimentation over instinct. Design, on the other hand is the preparation of plans and outlines; the crafting of an idea and distilling of its form and function to suit an intended use, or user. Science and Design, while often considered to be very different disciplines, share a common logical language. In the science lexicon, this process is called *experimentation*; in design, it is *prototyping*

At the Queensland Museum, we recently underwent a major strategic realignment and change management process. During 2012, a new team – Queensland Museum Experiences (QMX) were appointed to act as an internal creative agency for the museum, leading the development of the 5 Year Exhibition and Experience Plan (5EEP). The realignment saw the introduction of Design Thinking as a methodology for the creation of creative concepts that put the audience at the centre of the design process. Through adopting Design Thinking and ‘human-centred’ design principles, QM saw a radical shift in its approach to science communication, exhibition and programming development.

One of the greatest barriers we have faced – however – has been the transfer of design the ‘thinking concept’ to design-prototyping. The big question is ‘how do we take this nice idea about how to think about what our audience wants’ and make it a real thing, on the floor of the museum. Hearing from Denise and Claire, I was encouraged by the extent to which prototyping and very early testing formed a core part of their work. In fact, it made the answer quite clear – you ‘just do it’.

As Claire said in her presentation, working with a combination of the cheapest materials you can find; string, pipecleaners, bluetak and a few more advanced ‘cheap’ things; such as arduino (an electronics prototyping platform), ‘nice ideas’ for an interactive science exhibit can fly through several stages of audience testing and refinement, simply by being developed on the floor.

By developing *in the spotlight* like this, you are forced out of the ‘analysis paralysis’ common to all creative endeavors and into a zone where you must ‘do something – anything!’ Because visitors can see what you’re up to (or not up to!). It doesn’t matter what the something is, and indeed the tolerance for minor failure along the way is much higher, as people have full awareness of the challenges you have faced in developing the interactive – as it was done right in front of them. Granted more complex elements and larger manufacturing may still require workshop time, having the audience involved in the process not only enables immediate feedback (*‘does this make sense, do you know what this means?’*) It also enables the designers and scientists to improve the public literacy of experimentation and iterative accumulation of knowledge.

We have all witnessed, and to some degree participated in what is now referred to as the ‘knowledge economy’. We all know the daunting struggle that we face at the beginning (and throughout) the quest of new knowledge, but this love of knowledge has never been easier to quench – our challenge is to teach people to become more comfortable in the unknown and to create environment in which prototyping and experimentation can be collaboratively learnt in partnership with our guests and scientists.

— WE HAVE A —
**STRATEGIC
PLAN**
— ● —
**IT'S CALLED
★ DOING ★
THINGS.**

What I learnt from the ASTEN workshop is that even in an internationally acclaimed scientific institution such as the Exploratorium, there is no 'magic' formula, there are not even scripts for the explainers (they learn with the visitor, engaging in a normal conversation just like any other visitor). All that is different, is that constant iterative development, slowly tweaking and tinkering is not just only encouraged – it is *modus operandi*.

The Exploratorium has become famous for science learning, because it engages its staff and visitors (on equal terms) in the very same mission.

It learns through doing, and this integration of brand ideals and physical evidence (in people and process) is testament to the strength of its brand.

-Herb Kelleher (Co-founder, Southwest Airlines)

It is thankless to grope in the dark and tempting to rest until the light of understanding shines upon us. But if we are led into this temptation, your kingdom will never come.

Guy Deutscher (Through the Language Glass.