



Empowering for change

Interdisciplinary researching and improving museum learning

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While the museum field is advancing, writers of Museum-ID have been musing about issues of inclusiveness and authority and about new methods of interpretation, especially the use of digital technology and the Internet, participation and storytelling. Less is written about the effects of these issues and developments on the learning experience of museum visitors, or what their significance is for our future.

January 21 saw the launch of the Learning Research Agenda that was collaboratively developed by the Natural History Museum London, King's College London, the University of Bristol and other UK and overseas contributors. The agenda is not about STEM learning, it is not about 21st century skills. It is about how visitors can learn from museums to cope with global challenges, such as biodiversity loss, depletion of resources, climate change or sustainability. These challenges are also called wicked problems.

The agenda calls for continuous collaboration between practitioners and learning researchers. It has significance for other natural history museums as well as for other places of learning, such as science centres. I attended the launch delegated by NorthernLight, a creative agency specialized in development and design of exhibitions and experiences in the field of art, culture, natural history, science and technology. Because I think the view of designers in such research projects is under-exposed and an under-used capital, I would like to share our ideas on developing exhibitions that help visitors respond to the consequences of wicked problems.

Team up with designers

Exhibition design agencies aren't often included in studies on the role of exhibitions, probably because of fear of commercial conflict of interest, perhaps because of unfamiliarity with our role. To illustrate: we are not allowed to take part in the "Reading Club" of the VSC (the Dutch association of science centres), and notwithstanding that it was an interdisciplinary project, the Learning Research Agenda project didn't involve designers. This is remarkable, because in the end exhibitions are often made-up and designed by external design agencies like NorthernLight. The innovative solutions and attempts to improve exhibitions are predominantly driven by the creative forces within design companies.

One of the example research questions of the agenda asks which design principles can be used to engage audiences with conservation. As designers, we are naturally familiar with working with design principles. Although we don't believe creative work can be done from a straightjacket of design principles, there are some recurring features of our work. And despite the fact that they aren't necessarily grounded in learning research, according to us, they contribute to designing "platforms for lifelong learning." These principles combine our beliefs about exhibition goals and planning, display methods, and content development. From these recurring features, we see five principles that could especially empower visitors to cope with wicked problems.



1. Spark inspiration

Learning is more than acquiring new knowledge. It is the lifelong process of transforming information and experience into knowledge, skills, behaviors, and attitudes. At NorthernLight we aim to address all of these dimensions in the experiences we design. We believe that especially the affective, social and behavioral dimensions of learning move visitors to act. Skills and attitudes that contribute to nurture resilient citizens are curiosity, creativity, critical and holistic thinking, communication and collaboration, adaptability and perseverance. We don't like to overuse fear appeals; instead we focus on the beauty of Earth, its nature, phenomena and the people on it. Because we believe that fascination and love are more powerful to move people to act. Not all explanations on how things work need to be told; rather, how things can be improved (by the visitor!) should be promoted. In the end, the goal of what we do is to create vivid visitor experiences that spark inspiration.

2. Get together

Science and technology enabled the green revolution, eradicated smallpox and improved sanitation. But it takes more than scientific ability to tackle the world's most pressing concerns: it takes social justice and a deep respect of the humanity of others. Getting people together, collaboration and communication is not only the essence of working on wicked problems, it should also be the core of a science center experience. Exhibits can easily be designed for a single visitor; however, this pitfall neglects the fact that most people visit a museum in a group, whether with friends, family, or schoolmates. Social interaction is an important contributor to learning, it does not only help understanding the contents on display of a science center or a museum, but also trains communication and collaboration skills, raises awareness of other people's perspectives and builds trust and empathy.

3. Share uncertainty

At many traditional science centre exhibits, the truth is only one push button away. The typical hands-on exhibits and the sci-tech heritage objects in science museums demonstrate the trophies of technology, and well-established scientific principles and phenomena. Communicating uncertainties and the iterative, on-going nature of scientific research and innovation has been explored more successfully in live formats such as science cafés, festivals, and public debates. But, why should we not put effort in exhibiting this at the core of the science centre institution, its exhibition? For example, for the Kayseri Science Centre we are developing a stand-alone exhibit in which visitors discuss ethical, social and natural impacts of scientific and technological developments on a local and global level. At introductory stations visitors can view short pitches by scientists on emerging technologies. Visitors can choose what research they find most promising or most desirable and in the central dome projection their potential future is discussed. If ignorance and uncertainty come to be understood as preconditions for rather than barriers to research, visitors may be better encouraged to go out on the adventure of research for themselves. Moreover, they will understand that the future is uncertain, and that mitigation of the consequences of wicked problems is not an easy or quick process.

4. Co-creativity

Besides asking visitors to help you test and develop exhibition designs, their creativity can also be employed inside the final exhibition. Science centres are ideal institutions to get citizens involved in world changing projects. Take "The Ocean Cleanup" project as an example. The people behind "The Ocean Cleanup" are developing world's first feasible method to rid the oceans of plastic. If science centres would give a stage to such projects, visitors could cooperate and share their ideas on solutions and innovations. Facilitating user-



generated content and letting visitors contribute to research can give visitors ownership of their experience, increases self-efficacy, and activates them to contribute to change.

5. Storytelling

Everyone loves a good story. Storytelling is a powerful tool for learning, especially for learning about the relationship between earth and humans. Our brains are hard-wired to think in terms of a beginning (setting the stage), middle (the challenge) and ending (new reality). The appeal of a good story depends, amongst others, on the recognizability, usefulness and relevance to its audience. For example, in the exhibition *Our Fragile World* that we have designed for the Hong Kong Science Museum the visitor travels to the first Chinese Antarctic research station. Here, they interactively explore the story of adventurer Rebecca Lee. Being able to identify oneself with the characters of a story stimulates empathy and thinking along with the story about possible solutions. Moreover, the construct of narratives enables us to cope with richness and complexity. Stories make people care, fuelling the desire for change.

Concluding

Writing these principles down is easier done than putting them into practice. But within our exhibitions we try to incorporate the above strategies and researching their presumed effects for learning about wicked problems could benefit our designs. The Learning Research Agenda proves that collaborations between practitioners and researchers are valuable. We need to get exhibition designers into this mix and look at best design practices and designers' preconceptions. These could fuel new research directions and design-based research. At creative agency NorthernLight we are eager to learn about the research resulting from the agenda, but even more eager to take on an active role in this uncertain, but exciting future.

About the Learning Research Agenda

'A Learning Research Agenda for Natural History Institutions' is the culmination of a two-year series of seminars. It all began with the following key people:

- **Jen Dewitt**, research fellow at King's College London
- **Justin Dillon**, then affiliated to King's, now professor of science and environmental education and head of the Graduate School of Education at the University of Bristol
- **Emma Pegram**, Learning Research and Evaluation Manager at the Natural History Museum London
- **Brad Irwin**, Senior Learning Engagement Manager at the Natural History Museum London

They brought together around **seventy museum learning practitioners and academic researchers** to explore the complexities of learning in natural history environments, looking at different aspects including barriers, value, facilitation, authenticity and visitors.

The agenda explores how collections, content, expertise and facilitation contribute to natural history learning. Considering my personal background, I have only discussed the significance of the agenda for learning through exhibitions (which is one part of facilitation).

The Learning Research Agenda and more information on the project and the conference at which the agenda was launched can be found here: <http://www.nhm.ac.uk/about-us/visitor-research-evaluation/learning-research-seminars.html>

Reference

Dillon, J., DeWitt, J., Pegram, E., Irwin, B., Crowley, K., Haydon, R., King, H. Knutson, K., Veall, D. and Xanthoudaki, M. (2016). A Learning Research Agenda for Natural History Institutions. London: Natural History Museum.



Images:

- Collaboration at Sotra Kystby City Model in science centre Vilvite Sotra, Norway.
- Design of the Future Theatre exhibit for the Kayseri Science Centre, Turkey.
- Co-designing the new exhibitions for science centre Experimenta, Heilbronn with researchers and museum practitioners.
- Polar Research Station exhibit from Our Fragile World, Science Museum Hong Kong.
- Justin Dillon at the launch of the Learning Research Agenda.