

Chapter X

Revolutionizing Information Architectures within Learning-Focused Web Sites

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Abstract

This chapter points to the potential new information architectures hold in the design of virtual science centers. Science centers are treated as education-focused institutions and the argument is made that that extending the power of the science center as an educational platform warrants an answer to the question of how to share knowledge across the community of visitors without physical co-assembly. Two approaches toward information design are discussed: community-driven ontologies and social information filtering agents. These approaches are introduced within the context of two pieces of previous research and hold great potential when applied to the Web environment of the science center.

Introduction

Virtual environments have begun to proliferate as complements to physical centers of learning and exhibition. The presence of these spaces has profoundly impacted the ability of an individual to learn, reflect, comment, and engage with the cultural, artistic, scientific, or educational material these institutions offer without physically visiting them. Literature abounds discussing the implications of the Internet on art museums and classrooms, and less so with non-formal science centers interested in finding ways to make science more understandable to the public.

The museum setting is more observational, and reflective, but not integrally related to the experience of learning in the way of the science center. However, they are connected by the important discussion between designers, curators and technologists. The question these parties together are focused on is how to bring new information technologies to the museum or science center and vice versa.

Already, work is underway to create and design new technological devices for these institutions, embedded within the “brick and mortar” of the building, or made portable for a visitor to wear. Fascinatingly, the museum or science center visitor can no longer be defined as the person who walks into the door of the building, but instead could be he or she who accesses the appropriate Web site.

The key question surrounding all these issues is one of interaction design: how can interactive technology be deployed to facilitate dialogue between Web visitors and physical visitors, curators and visitors, lecturers across the world with both types of visitors, and etcetera. Dialogue, learning, observation, reflection – in union these terms point to a new paradigm that is not individualistic, but instead community-focused. Thus, my design research has focused on the mechanisms by which technology can enable and sustain community, and how distance can be bridged to create community around the objects of the museum or science center without the need for physical co-presence. Hence, the term **virtual** science center or **virtual** museum emerges.

There are lessons to be learnt from the classroom and museum that can be applied to the science center, but there are also fundamental differences. The experience of interacting with a science center is integrally learning-based, though within an environment of observation that suggests the typology of a museum. One does not “learn” a painting or sculpture with the same pedagogical process as he or she does about electricity or Einstein. This chapter is focused on mechanisms by which the design of virtual science centers can advance the experience of learning. Learning can be understood as a construction, a shared activity of discovery and dialogue between the individual participants (Papert, 1980). Thus, rather than understanding content as created by a single source, extending the power of the science center as an educational platform warrants an answer to the question of how to share knowledge across the community of visitors without physical co-assembly.

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