

Creating Online Learning Environments for Museums

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Abstract

In recent years, a growing emphasis on communication approaches has changed the face of museum education from a dominating position to a more inclusive profile that increasingly embraces public viewpoints. This development is amplified and further advanced due to the wide prevalence of the Internet, in particular the World Wide Web, making the dialogues between museums and their visitors even more interactive and collaborative. Since the web has changed the online environment for museums, allowing unprecedented participation by virtual visitors, it is time to consider what kind of role should the web play in museum education and how should it develop in the future? This study presents some observations of practical examples from museums around the world, with a focus on their web strategies adopted to offer a plurality of learning experiences, create dialogues for exchanging ideas, and cultivate interactive relationships with their visitors. The author discusses and analyzes the benefits, opportunities, and challenges faced by museums in practice. A balanced approach is proposed in the conclusion that, in order to remain relevant in the outside world while not diminishing their role as credible arbiters of knowledge, museums should try to give appropriate weight to both the benefits of authoritative control and the productive power of content generated by users across the web.

Keywords: museum education, Internet strategy, museum website, virtual community, Web2.0

Introduction

For decades, museums have been playing the role of knowledge arbiters in many societies. Museum education has long grasped the one-way delivery model and top-down teaching approach, since the interpretation of museum collections has been controlled by authoritative curators and subject specialists. In recent years, a growing emphasis on communicative approaches and visitor-oriented services has contributed to developments in museum education, as well as exhibitions, marketing strategies, and outreach programs. Museum education therefore sets out to change its public face with its idiosyncrasy being broadened from 'prepared monologue' to 'spontaneous dialogue' (Howes, 2007: 77). This gradually engages people's participation with their personal ideas, experiences, and stories, and hence the negotiation between museums and their visitors.

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The interactive relationship between museums and their visitors is further pushed forward to multiple-way communications due to the wide prevalence of the web. With the engagement and participation of online visitors from dispersed geographic regions, museums no longer exist just as ‘repositories for objects’, but also ‘gathering places for people’ (Finkelstein, 2007: 87). In order to help museums to attract more constituents, many forward thinkers and practitioners have experimented and proposed diverse online strategies, social technologies, and communicative methods for museums to deploy their resources effectively on the web, extending their educational function to untapped areas.

At the moment, the resulting relationship between museums and their web presence is one of the greatest concerns for many museum professionals. What kind of role should museums’ virtual counterparts play in their respectful territory that is full of tangible and authentic evidence? If the web has facilitated the changing landscape of online learning environments, where shall museums let it continue to lead them? Apparently few people would argue that viewing a representation of an object on a museum website can act as a satisfactory substitute for the experience in a real museum (Marty, 2007; MacArthur, 2007). Nevertheless, it is also undoubtedly the case that the web can support a plurality of information and open up possibilities for further exploration. As it stands to reason that museums’ web resources should be well developed to serve the increasing online population, a complementary role that can support online learning while supplementing museum education in the real world has become a consensus nowadays (Cooper, 2006; Howes, 2007).

With the above-mentioned tendency in mind, one may ponder over the following: what types of online approaches should museums adopt to engage users’ participation with personal narratives, offer a plurality of learning experiences, create dialogues between people, and cultivate interactive relationships with their visitors? What are the benefits, opportunities, and challenges for museums when trying to respond to the call for openness? This paper seeks to answer the above questions through the methodology of multiple case study, in which the author organizes and analyzes some observations and practical examples from museums around the world. It especially focuses on providing some suggestions about how museums can develop their collection materials to create effective online learning environments from which they can engage and empower their potential audience in ways that they may have not been able to do in the past.

Creating online learning environments through museum websites

The first thing a museum attempts to do on the web, typically, is to establish an official website with professionally-created online collections, exhibitions and the related virtual facilities. As the limitations in physical exhibitions largely originate from the predetermined objects in permanently fixed spaces that confines the opportunities for visitors to make sense of the collections and create personal narratives, a museum website can eliminate these limitations by offering multiple-entry learning paths, user-directed constructive experiences,

and participatory community involvement (Cooper, 2006). This paper considers the following five patterns of learning environments, which are preferably featured in a museum website's framework.

1. Interpretive collection

A collection of objects is the fundamental reason for which the majority of museums exist and lies at the heart of its activities. Without collections, museums cannot develop related research work, exhibition projects, and educational programs. Similarly, a museum website only starts to be really meaningful (more than “brochureware”) when its collections information becomes accessible online. A problem that can be found in many museum websites is that their online collections remain as raw data, rather than interpretive information that is easily digestible by the user. This is because museums' collection management systems have been mainly designed for the purpose of administering museum assets rather than making the collections explanatory (Peacock, et al., 2004).

The web has the potential to provide user-directed exploration for museum online collections. Multiple layers of curatorial information with various paths and entries can be created to allow users to construct meanings around collection items. A museum website can contextualize the collection items in a variety of ways that will enable users to manipulate the interpretive collection and gain more personal experiences that is not easily achieved in physical museums. An example of an interpretive collection is to be found on the US National Museum of American History's website. In its “Collections” section, 28 subject categories are created using terms that are meaningful to ordinary people (figure 1).



Figure 1. A snapshot of the “Collections” page in National Museum of American History²

² Source: <http://americanhistory.si.edu/collections/>

Each subject page features about ten representative collection items with a link to the complete collections related to that subject. A search tool by subject is available in this interpretive collection section.

2. Themed exhibition

Exhibitions are normally the centre of attention when people come to visit a museum. Many museums invest considerable money, workforce, time, etc., in creating attractive exhibitions with related educational programs. Nevertheless, exhibitions in physical museums are normally confined to a certain period of time (which can be measured in months for temporary exhibitions) and have great limitation in reaching visitors for geographically reasons. This is why museums should ideally establish a companion online exhibition on their website by leveraging existing resources and broadening the uses of developed digital content. An online themed exhibition as a corresponding site to the one in museums' physical space is able to not only preserve a permanent record of the event, but also expand museums' ability to reach a great many online users, offering a plurality of learning opportunities.

Given the unique capabilities of the web, an online exhibition should go beyond the predetermined pathways employed in the physical exhibition space and take different approaches to enable users' self-directed and in-depth learning. Instead of offering fixed content that cannot be re-contextualized by visitors, an online themed exhibition can adopt divergent rationales to frame disparate objects into various narratives, create multiple tracks and links that allow cross-referencing to other objects that are related to the objects in a particular narrative. An example that excellently embodies these concepts is the "History Wired" website launched by the US National Museum of American History (figure 2). This site presents a selection of museum objects, organizing them into discrete and overlapping categories and subcategories on a grid. As the user moves the mouse over the grid, they see the images and descriptions about the objects on the box to the left, which can be enlarged. The museum attempts to make users explore and uncover relationships between objects in different themes through this online exhibition. The idea of translating all the various dimensions of a museum object into a two-dimensional web interface in this website may intrigue many online users.

3. Searchable database

Increasingly, web users access online materials by using an aggregated search rather than browsing through dispersed interlinked pages. It is not enough just to produce more digitized collection items online; a museum website should go further to design substantial search tools for users to gain access and make use of them in personally preferred ways. Peacock et al. (2004) point out that many keyword searching facilities from traditional collection management systems result in catalogued records with little description. To maximize the interactive ability of the web, a collection database in a museum website



Figure 2. A snapshot of the “History Wired” website of National Museum of American History ³

should not only be searchable, but also present object information in the form of networked associations that provide multiple tracks through interconnected relationships embedded in the meanings of collection items.

A user-centered searchable database can encourage further searching by allowing users to manipulate the search results based on personal queries, to re-contextualize, and synthesize them for further purposes, such as teaching or in-depth learning. There are always some contextual relationships centering around a collection of objects, such as times, places, events, topics, people, genres, object types, etc., which all can be presented as their own categories to identify groups of collection items for users to reconstruct their personal meanings. If all the related categories can be combined as a holistic search mechanism in a museum’s online database, users will be allowed to experiment with various concepts in a more socially, historically, and geographically interweaving sense. An example of this can be found in the “National Repository of Cultural Heritage” in Taiwan, in which online users can search around the categories of arts, music, drama, dance, architecture, classical photographs, etc., and achieve a self-directed learning experience that would not be possible in a physical environment (figure 3). This portal site provides a focused and comprehensive exploration of various art forms that are all related in a larger cultural heritage context.

4. Participatory virtual gallery

Another approach that is based on the principle of personalization in a museum website is to create a participatory virtual gallery. The rationale behind this type of online

³ Source: <http://historywired.si.edu>



Figure 3. A snapshot of the “National Repository of Cultural Heritage” in Taiwan ⁴

mechanism is that in a physical museum one can only be allowed to walk through the predetermined finite pathways and the visitor does not have much freedom to decide and arrange the ways that objects are exhibited and elaborated. The complementary role that a museum website can play is to offer users such opportunities of self-directed learning on the website rather than to duplicate a substitute for a real visit. A participatory virtual gallery is a place where online museum members can curate their own exhibitions from the collections of a museum website. It normally allows users to act like a virtual curator designing their small online exhibitions with self-defined themes, accompanying introduction, and commentary on each object that is selected by the user.

This type of online approach is normally adopted by art museums, since works of art usually hold a greater possibility for different points of view and their nature is less authoritative compared with many historical objects and scientific collections. As people often feel motivated for participating in an activity when their contributions are publicly recognized, a participatory virtual gallery can be worthwhile for museums to devote some resources with the aim of engaging online users. An example is “myVirtualGallery” (figure 4), launched by the Art Gallery of New South Wales in 2005, in which the museum features an approval process to ensure the quality of their user-generated content, some highlighted notable exhibitions, and past exhibitions that are retrievable through searching and browsing (Cooper, 2006). By providing these facilities, the web can help to extend the users’ museum experience from the physical exhibit to online, facilitate the dialogues of exchanging ideas between museums and visitors, and increase overall community involvement.

⁴ Source: <http://nrch.cca.gov.tw/ccahome/index.jsp>

5. Interactive activities

One of the greatest strengths of the web is its flexibility, which is ideal for creating opportunities to support online interactive activities and meeting the divergent needs of many facets in human intelligence. In a museum website, one can read the narration of a collection item, rotate the image of an object in space, associate the concepts of an artwork in relation to other items, and otherwise experiment with combining different senses of an object into contexts via timelines, maps, events, and various dimensions that can be created online. All these mechanisms have considerable benefits in providing visitors with alternative learning experiences, compared to viewing an object in real museums.

A special approach that can create a stimulating approach for interactive learning is to design a game delving into a museum's online collections. Games as a means of conveying meanings have always been appealing to many people, especially younger audiences. They can help with presenting information in an attractive but structured method that boosts engagement, turning museums' content into exciting opportunity through which museums can cultivate new visitors. It is the case that most museum website contents seem mainly to serve the needs of existing museum patrons, which tends to create a barrier to young and new audience. Applying interactive games in a museum website can not only increase exposure, but also create an initial bond to start developing younger visitors for them to build a lifelong relationship with the museum.

Apart from engaging a specific target audience of the youth, games also have the capability to attract the general public by fostering their intrinsic motivation (Edwards &



Figure 4. A snapshot of “myVirtualGallery” in Art Gallery NSW ⁵

⁵ Source:<http://www.artgallery.nsw.gov.au/ed/myvirtualgallery>

Schaller, 2007: 100, Falk & Dierking, 2000). One example is the Games section on the McCord Museum of Canadian History website, which has a number of history-related quizzes, observation games, association games, role-playing games, and tagging games. These normally require a deeper level of involvement from players, and also inherently inform users about the museum's collection, which helps the participants to immerse themselves into the learning scenarios. Another example of adult-targeted games employs an even more special strategy of inviting museum visitors to participate in both online and live events in the real world. The "Ghosts of a chance", launched by the Smithsonian American Art Museum in 2008, was billed as the first ARG (alternate reality game) in the museum world (figure 5). The museum invited players to create real artifacts and share the stories behind them with others using their online platform. At the same time, when the game was interactively played online by more than 6,000 people, the participants were encouraged to submit the created objects to the museum for a one-day exhibition. As a result, more than 240 visitors gathered in the museum's physical space on October 25, played a series of scavenger hunts in which they accumulated clues by "waltzing with a ghost, tracking down a mysterious jacket and answering a ringing cell phone hidden in its pocket, following a treasure map, and unlocking an umbrella to find clues taped inside" as described in the museum's blog (Bath, 2008). After the event, the museum has continued to develop games that can be played by school children on a recurring basis.

The above-mentioned online interactive activities created by museums have gone beyond the traditional notion of games, making them able to foster a community between museums and visitors both online and in reality. Edwards and Schaller (2007) point out that when museums design learning games, a virtual community can be used to collect players'



Figure 5. A snapshot of "Ghosts of a chance" in Smithsonian American Art Museum ⁶

⁶ Source: <http://ghostsofchance.com>

qualitative feedback about the game. They state, “Community sites are also ideal avenues for connecting the game world with the real world, pointing players toward extension activities that will continue and deepen their learning.” (Edwards & Schaller, 2007: 104) The next section addresses the issue of using virtual communities to create online learning environments for museums on the web.

Creating online learning environments through virtual communities

The majority of museums hold a mission to serve the public by providing broader access to museums’ collections and educating a wider diversity of audiences. Since the online population has been overwhelmingly increasing in the last few years, museums should consider ways of connecting with more and more people rather than simply waiting for them to come and see exhibitions, whether physical or in cyberspace. Only if museums reach out into the world to the places where people are gathering together can museums participate in their conversations and make them aware of and interested in what museums have to offer. This is especially true when the web landscape has been transformed into a next-generation Web 2.0 environment where viewers become creators and the web pages becomes virtual venues for events and meetings (Parry & Pratty, 2008). For today’s museums, it is no longer enough to just have an official website; a proactive online outreach to popular destinations will help to constitute a more effective web presence (Howes, 2007).

1. Blogging, e-newsletters and podcasting

Among the Web 2.0 community-driven social media, the blog, e-newsletter, and podcast are three that are widely used for content, community topics, and the direction of conversations, and which are mainly created, facilitated, and moderated by museums, rather than by the community. Notwithstanding visitor-centered advocacy, people still hold museums in high regard and trust the authoritative account of credible knowledge. These types of virtual communities are especially valuable in providing a basis of museum expertise on which online visitors can reflect their own thoughts. Although these online environments do not always generate two-way dialogues and collaboration, the conversational tone is likely have a greater impact on the visitors’ life in the long run compared to an official and more static museum website.

One benefit that the blog, e-newsletter, and podcast offer both museums and users is that they normally have the ability of allowing online subscription. This function enables museum content to be pushed out to users regularly without relying on them to check for new information actively by returning to museums’ websites on a regular basis. Another advantage of these tools is that they ease the procedure of collecting audience feedback for museums, helping to ensure that the design of exhibitions or any collection-related concepts are constructed to form a visitor-oriented museum experience. In terms of the use of blogs, this approach has been adopted by a growing number of museums. Some institutions take a

more proactive approach (such as the “Science Buzz”, a blog created by the Minnesota Science Museum, see figure 6), while others prefer to keep a more conservative presence (such as the “Eye Levels”, a blog created by the Smithsonian American Art Museum). They are both worthwhile approaches, as long as the methods help to achieve the museums’ educational goals.

An e-newsletter engages email systems as its communication channel rather than using a content management platform. This is even more prevalently embraced by the museum world since email is the most convenient way that makes most visitors feel comfortable when reading at leisure. Featuring museum exhibitions and related events through e-newsletters can offer users a learning opportunity where they can proceed at their own pace and therefore helps to cultivate potential patrons and establish long-term relationships between museums and their visitors.

The use of podcasts can help support a plurality of approaches in creating online learning environments for museums. Any museum content that can be sent in an audio format may be considered as potential material for producing podcasts. In practice, museums use podcasts to create programs that feature highlights of exhibitions, talks by curators or subject experts, selected past programs and historical records, etc., to provide an alternative means of access to written material in online archives. In terms of fostering two-way dialogues, podcasting is not necessarily a very effective web tool since most users tend to be listeners rather than composers. Nevertheless, using podcasts increases access to a wider audience, who may not have much time to stay on the web, while still wishing to learn from museums.



Figure 6. A snapshot of “Science Buzz” in Minnesota Science Museum ⁷

⁷ Source: <http://www.smm.org/buzz/blog>

One example is from the Peggy Notebaert Nature Museum. The museum launched a weekly educational podcast named “The Little Green People Show – Sound Advice on Green Living in the Big City” at the beginning of 2008 (figure 7). Dedicated to inspiring the public to care for the environment, this podcast program carefully selects topics based on the seasons, the current issues in the local places, the festivals that people are celebrating, etc., to engage users in learning about the museum’s content. Accompanying each post of the podcasts, the museum also gives users playful tidbits using blog-style written information about the audio content. Comments from users are encouraged through written feedback on the webpage.

2. Wikis and tagging

Compared with the above-mentioned community approaches, users in a museum wiki or tagging project usually play a more active role in contributing personal knowledge to museum online learning environments. These web features have the capacity to help museums with the fulfillment of visitor-centered advocacy by inviting users actually to work with museums on collaborative projects associated with museum content. While being a traditional knowledge monopoly, museums do not always know everything. Allowing people to contribute personal anecdote can sometimes help to complete the picture around certain collection items. It is usually the stories or real experiences that exist around a museum object that bring it to life. To engage visitors in a joint wiki or a collective tagging



Figure 7. A snapshot of “The Little Green People Show” in Peggy Notebaert Nature Museum ⁸

⁸ Source: <http://www.lgpshow.org/podcast/>

project will not only provide a good chance of accumulating valuable additional material within a museum's repository, but also enrich the users' experience and cultivate them as potential loyal visitors.

The use of a wiki by a museum can be either publicly accessible for educational purposes or only available internally within the museum depending on the target users (Bowen, 2008). A good successful example of a publicly collaborative wiki is the MN150 Wiki, launched by the Minnesota History Center in 2007 (figure 8). This museum wiki is operated as part of the museum's MN150 exhibit project. The museum gathered more than 2,700 nominations for topics about Minnesota to be considered as the exhibit components and made the final list of 150 most compelling cases. On this museum wiki, users are encouraged to share personal memories on each topic, post comments, and create their own list of people, places and events that helped change Minnesota. While in the gallery space there were only the selected 150 cases that could be physically displayed, all the 2,700+ nominated topics are covered in the MN150 Wiki with excerpts from each nominator's argument. This museum online community involves a high degree of public participation ranging from real-world citizens to cyberspace visitors and, most importantly, all the participators are publicly acknowledged their contributions, which is a great incentive for museum learners.

Compared with wikis and some other virtual communities, tagging is a relatively easy and playful way to gain users' personal knowledge as a benefit to a museum's collections, as well as helping to accomplish the museum's educational mission. The rationale is to apply keywords to an image to aid with online searches. More specifically, a museum object with



Figure 8. A snapshot of “MN150 Wiki” in Minnesota History Center ⁹

⁹ Source: <http://discovery.mnhs.org/MN150/>

tags from users will be more easily found by other users and hence increase its chance to be used in their learning.

One example of museum tagging is the “Tag! You’re It!” community site launched by the Brooklyn Museum in New York (figure 9). On this site, the museum’s entire digital collection is integrated into their tagging system for users to “play” by adding tags and comments with other community members. Once some tags are added; users are able to find which of their tags match with those of other members, which automatically congregates like-minded users into groups. This type of engagement enables people to look at museum collections in new ways, describe in their own words, create a personal relationship with museum content, and exchange ideas with others. It helps users not only with personal meaning construction but also in allowing a community to tap into a collective consciousness, with the advantage of enriching the museum collections at the same time. By acknowledging users’ contributions publicly on the museum’s website, it is an even more empowering experience that fosters deeper relationships with museum visitors.

3. Social networking

From the above-mentioned examples, it is demonstrable that a social component is an increasingly important part of museums’ online presence (Russo & Peacock, 2009). The face of museums has changed from a dominating persona to one that invites more and more public participation, and accordingly, the museum profile can become less dominant and even play a secondary role in some online spaces. Social networking sites, such as Facebook, Flickr, YouTube, Twitter, etc., provide free tools for either individuals or



Figure 9. A snapshot of “Tag! You’re It!” in Brooklyn Museum ¹⁰

¹⁰ Source: http://www.brooklynmuseum.org/opencollection/tag_game/

institutions to host their own social networks, which is entirely hosted by a third party as opposed to being part of a museum's own authoritative territory. Despite being contrary to some long-established traditions in the museum sphere, an increasing number of museums have responded to this call by joining as members of these virtual communities.

One of the reasons that social networking sites are considered as a possible online presence is that they can help museums to find the appropriate voice to create a community that encourages wider participation. On most of these sites, members can establish a set of contacts and exchange information with them, initiate discussion on current events, and invite other users to share content such as photographs, videos, comments, etc. Despite the fact that most events on these sites tend to be more like connections for networking rather than education, a deeper level of interaction can be cultivated and developed afterwards through these types of online social activities.

Shelley Bernstein (2008) points out that “It is fundamental to being part of a community”. These online applications will be effective in an influential way only if museums engage users in a social and friendly manner (Bernstein, 2008). When doing so, the development of two-way conversation will be supported and people will become more willing to offer up their content where relevant subjects are being discussed.

Take Twitter as an example, which has expanded exponentially in 2008 and is embraced as a major social media tool by a growing population (Aune, 2008). A number of museums (such as the US Getty Museum, Holocaust Museum, the Women's Museum, etc.) are already users of Twitter, trying to reach a broader audience by adopting technology utilized by their visitors and potential visitors (figure 10). As a member of the Twitter



Figure 10. A snapshot of “The Women’s Museum” on Twitter¹¹

¹¹ Source: <http://twitter.com/TheWomensMuseum>

community, everyone has to keep their message succinct and to the point (like a multi-recipient text message) so the conversations evolve fluidly and efficiently. A great advantage is that museums can approach the audience through ways the users prefer to access the web, whether it is via cellular phone, Instant Messenger, Short Message Services, email, or the Twitter website. This method to some degree transforms the relationship between museums and the audience to be like friends as they can respond to each other in a spontaneous manner. To invite people to be involved in a museum starting with these kinds of conversations can be a very encouraging way to motivate users in further engagement with the museum (e.g., providing links to the museum website). Most importantly, museum content will possibly be brought into people's life in a firsthand, real-time fashion through this continuously flowing form of communication.

4. Real-time collaborative environments

Just as the earlier attempt to build interactive activities in museum websites set the tone of social interaction for their later approach of virtual communities, museums that hope to further diminish the distance between them and their worldwide visitors have also started to consider some experiments using real-time collaborative environments such as interactive live webcast, online virtual classrooms, multiuser 3D virtual worlds, etc. An underlying significance of the real-time collaboration is the inherent "shared presence" that is desired by a great many to be connected and to interact within an informal and memorable environment (Finkelstein, 2007: 87).

Jonathan Finkelstein (2007) contends that these types of online settings not only provide context for geographically dispersed people to congregate at the same time, but also engender "a sense of place" and "a feeling of proximity" for the participants (Finkelstein, 2007: 82). The example of the webcasts program developed by London Science Museum's Dana Centre is an excellent indicator of the above notion, in which the museum hosts live events with a group of real visitors, while broadcasting the event using video, simultaneously on the web and incorporating a real-time interactive component for online participants (figure 11).



Figure 11. A snapshot of the event video in Dana Centre ¹²

¹² Source: <http://www.danacentre.org.uk/events/webcasts>

Another example of using real-time platforms to foster meaningful dialogue is the online teacher workshop conducted by the Metropolitan Museum of Art in New York since 2007. The museum deploys a live virtual classroom (Elluminate Live) as part of their workshop curriculum to enable real-time collaborative conversations with teacher participants from around the world. The capacity of recording the live events and posting these on the web further adds a valuable archival component for the evolving online learning community.

This web-based synchronous communication shows even greater promise than the previously-mentioned virtual community efforts for how museums become collaborative partners with their audience in a true conversational setting. Apart from live webcasts and virtual classrooms, another type of museum-based online community launched in the 3D virtual worlds, namely Second Life (SL), offers experiences that participants can transcend reality by having ‘face-to-face’ interaction with other human-looking representations (or “avatars”) in 3D spaces (Rothfarb & Doherty, 2007). Museums such as the Exploratorium in San Francisco, the Louvre Museum in Paris, the United States Holocaust Memorial Museum in Washington DC, and the International Spaceflight Museum, which is a purely virtual museum created by a group of volunteers sharing the same interest (ISM Corporation, 2007), have all deployed their resources on the SL world in a diversity of ways.

Notwithstanding the technical barriers, the educational merits seem countless in such kinds of virtual communities. Some museums have initiated mixed-reality comprehensive events that combine a live video stream with the virtual world. The event of “Crisis in Darfur, Live from Second Life” held by United States Holocaust Memorial Museum’s Committee on Conscience serves as an example, where a scheduled panel presentation, the virtual representations of each speaker, and the avatars of SL participants, congregated to discuss genocide prevention for people in the Darfur region (figure 12).

The above example reveals, as Richard Urban et al. (2007) suggest, a great opportunity for museums to facilitate social interaction, as well as conversations around certain topics in the real-time virtual world. This can be done through the provision of virtual “areas”, such as cafes, souvenirs shops, event venues like conference rooms, etc., where participants can gather. This does not imply that museums creating a real-time presence in SL can do no more than mirroring their real-world events. Some SL museums such as the ‘Splo, invented by the Exploratorium in San Francisco, has demonstrated that many of the constraints both in reality and on the 2D web can be creatively removed in this space. These include the unique learning opportunities of letting users virtually manipulate museum objects, change their scale, move through interactive points of view, create dynamic personal content, experience situations that are impossible in reality, and most significantly, collaborate with the virtual representations of museum staff and other participants in a social networking context (Rothfarb & Doherty, 2007).



Figure 12. A snapshot of “Crisis in Darfur, Live from Second Life”¹³

Evidences of effective online learning

The above two sections illustrate the types of online approaches museums can adopt to offer web users a plurality of learning experiences and create dialogues that will potentially enable people to exchange ideas either with the museum staff or with other virtual visitors. However, in understanding the educational opportunities of these online applications, one may also ponder: how do the museums make sure whether these online tools reliably reinforce visitors’ meaning making and where does the effective online learning actually take place?

Museum visitors and online users come from all walks of life with widely divergent backgrounds. As a result, their museum experiences are by and large gained through a constructive process or mediation between what they already know and the knowledge they are provided by the museum. This kind of learning experience unavoidably involves a certain degree of disagreement with the authoritative interpretations, which requires some negotiations to reach consensus on certain topics. As Lisa C. Roberts (1997) asserts, “It is this moment of conflict that is the business of education, because out of conflict comes the need to consider the sense in which revised or alternative world versions may be valid” (Roberts, 1997: 133). In an online learning setting, no matter how user-friendly its design, museum visitors still “make their own sense of it according to their own terms” (ibid: 140). Therefore, only when the online environment authored by the museum respectfully recognizes the visitors’ role and empowers users to construct their own narratives can an effective online learning really be ensured.

¹³ Source:<http://www.ushmm.org/conscience/analysis/details.php?content=2007-01-09>

To provide some evidence of effective online learning, this paper found the following two cases, which demonstrate how non-traditional narrative can be adopted to spark visitors' meaning construction by engaging them to evaluate museum interpretation in relation to their own account, making the narrative a collaborative endeavor between the museum and the visitors.

1. Brooklyn Museum's photostream on Flickr

Flickr is an online image hosting website as well as a virtual community where images are organized with user-generated tags (or keywords) and their contributed descriptions. Some museums have already successfully engaged visitors to contribute tags, comments, identify information about a specific place, person or event of which the museum staff may not be aware and making it easier for other people to find and learn from the results. The Brooklyn Museum, in particular, employs Flickr to increase accessibility to their collections, engage in dialogue with its audience, cultivate collaboration and visitor feedback, compare historic views with contemporary landscapes, receive help in identifying unknown buildings, views, and places, tag images in multiple languages, etc.

In an image entitled "World's Columbian Exposition: Statue of the Republic, Chicago, United States, 1983" (figure 13), a member recognized this image posted by the Brooklyn Museum. She found a similar image in her grandfather's picture album and was inspired to learn more. Other members came to her aid, providing information about her grandfather's photograph including information about a replica of the statue that exists today. The conversation between the museum staff and the visitors evidently reveals the visitors' meaning construction when the museum presents messages in a way that is respectful of their narratives:

"I came across this photo when trying to verify the statue behind my grandfather at this photo taken in the 1930s: It must be the same statue, but to me it seems that "my" statue is holding some other things in the hands?" (Visitor A)

"Agreed. Also, your grandfather's car is in front of it and there's water in front of the one at the Columbian Expo. I noticed that someone tagged this "Statue of the Republic" and when I google that, I come to this wiki article¹⁴, but still no explanation for the differences in what it is holding. If you solve this mystery, post back - would love to know how this turns out."?(Museum staff)

"... The original had the left hand holding a lance decorated with laurel leaves and a Phrygian Cap representing the French Revolution. Perhaps because the mid/late 1910's was a time of reaction and fear of communism, anarchism and the Bolsheviks, a staff with a laurel wreath was used...." (Visitor B)

¹⁴ http://en.wikipedia.org/wiki/Statue_of_the_Republic



Figure 13. A snapshot of “Brooklyn Museum’s photostream on Flickr”¹⁵

“Your grandfather may be posing in front of a replica that stands in Chicago’s Jackson park to this day. The original Statue of the Republic was more than 60 feet tall and was destroyed after the fair. A 1/3 replica was placed in Jackson Park in 1918. This is probably the statue your grandfather posed in front of...” (Visitor C)

“Yes that is the replica of the original statue in your grand pa’s photo. I am not certain but it seems that the replica was placed at the opposite end of the reflecting pond to where the original statue was position... I have visited this statue many times,..it is located at the park just south of the Museum of Science and Industry (the remaining original building of the world’s fair of 1893)...” (Visitor D)

2. The Powerhouse Museum’s Photo of the Day blog

The Powerhouse Museum creates the “Photo of the Day” blog, in which they present an array of photographs that may include anything from behind-the-scene shots to historical photographs from the permanent collections. These photographs are also shared on the Commons Project¹⁶, a Flickr database used by museums and cultural institutions to share photographs with the public intended to show how visitors’ input and knowledge can help make the collections even richer. The Powerhouse Museum then ties the Commons Project back to its blog by including Flickr-generated content alongside the content authored by museum staff.

¹⁵ Source:http://www.flickr.com/photos/brooklyn_museum/2785068208/

¹⁶ <http://www.flickr.com/commons>



Figure 14. A snapshot of “The Powerhouse Museum’s Photo of the Day blog”¹⁷

In one photograph, “Two young boys with strap shoes” (figure 14), the museum had little information to provide in its context at the beginning. Flickr members began to raise questions and debate the date of image, location, and whether the shoes were for girls, boys or unisex in the past¹⁸. Alongside the community dialogue, one member provided information about when strap shoes were worn by boys before they became known as girl shoes. Museum staff then picked up the discussion, featured it on their Photo of the Day blog and filled in missing data in collection records.

“The pair of shoes the standing boy is wearing seems to be for girls. Must be unisex during those days.” (Visitor a)

“Wonderful picture. Any clues as to date? I’d say very early 1900s, but not really clear” (Visitor b)

“Thanks We have the date as 1905.” (Museum staff)

“Looks like the same leather summer sandals which we wore in the UK in the 1950’s. You can just see the single metal buckle fastening on the outer side. Apparently this “T-bar” shape gradually became girls-only in the 1970’s - while boys favoured the later enclosed shape more like a shoe.” (Visitor c)

“I think it is about 1895 in Melbourne, and this is Louis Frederick (b1890) and Alexander (b.1893) McCubbin, the sons of Frederick McCubbin, famous Australian artist And, by the way, I too had red leather sandals like those in the early 1960s in England, made

¹⁷ Source:<http://www.powerhousemuseum.com/imageservices/?p=735>

¹⁸ http://www.flickr.com/photos/powerhouse_museum/3283283663/

by Clarks. I hated them then - they did feel 'girly' - yuk!" (Visitor d)

"The boy's shoes look like "Startrite" brand sandals - or a precursor. These were unisex kids shoes with a soft leather upper and crepe rubber sole. As the name implies, they were supposed to have health benefits, letting your foot grow naturally etc etc." (Visitor e)

The above two cases are examples of what Roberts calls "education as empowerment" by which museums not only allows learners to explore specific artifacts and themes of interest to them but also embraces the narratives and vocabularies written by visitors. These types of online learning applications do not really tell people what to think about a museum object, but instead encourage them to articulate what they think and make the museum collection relevant to their own framework of knowledge and experience (ibid: 69). By doing so, museums will enable effective learning to take place among their online visitors.

Pros and cons: museum websites vs. virtual communities

David Weinberger (2007) points out that labeling photographs is becoming a social process embraced by the public. Some museums, such as the two illustrated above, have started to benefit from this collaboration, with community members participating in helping cultural institutions organize information. As a collaborative medium, Web2.0 community-based websites are indeed perfect for the collection of narratives since people are already primed to express themselves and add their opinions to any websites that asks them to do so.

As opposed to museums' official websites, virtual communities seem to be superior in eliciting voices from the grassroots. However, every environment has its pros and cons. One platform does not necessarily empower visitors and support the use of multiple narratives better than the other. It is the manner in which those narratives are collected and shared that is different. In a museum website, people's narratives can also be included and displayed online through different approaches, mostly by gathering them prior to the website design. Media such as photographs with captions, quotes, written stories, video clips, electronic comment books, etc., are all ways that narratives can be shared and learned in a museum website.

There must be compromise when it comes to creating an online learning environment where different types of museum resources need to be considered with respect to how they are to be illustrated and presented. The learning patterns in a museum website's framework, such as the interpretive collection, themed exhibition, searchable database, etc., are suitable platforms for handling scholarly resources since museums are institutions where new knowledge is generated and old knowledge is affirmed or revised, based on the expertise and ongoing research of museum curators. Museums should not necessarily be thought of as the final authority when presenting the findings, but they should continue to serve as places where scholarship can be nurtured and supported. Coming from an academic institution, museum websites mostly serve as a presentation of authoritative knowledge and

supply answers to factual questions such as who, what, and where.

Paul Marty and Michael Twidale (2004: 6-7) point out that, even with fabulous content throughout a museum website, the tremendous efforts of the museum professional frequently result in developing overwhelming collection records and extensive information pages. The deluge of the sheer volume of website content often ends up with confusion to the online users and discourages them from exploring further. It is also undeniable that museum websites, however dynamically designed, user-friendly interfaced, or considered with respect to a multitude of learning styles, generally allow little room for online visitors' expression or participatory communication, making the learning experience more of a passive form of receiving information.

Virtual communities, on the contrary, allow for more lively discussions and multiple voices from the general public. Media such as blogs, Facebook, Twitter, Flickr, etc., are, by nature, easy as well as effective platforms to involve multiple responses and provide an outlet for the visitors. Adopting these types of online tools will help the museum to reach out to a great many of those in online communities, although the content can also become redundant, trite, filled with name-calling or other unproductive forms of speech if not carefully used. There is a line to draw between the educational strategies and the marketing approaches for museums. The experiments on social networking sites can be ways to connect to the large online demographics and the younger generations through the viral techniques and then drive these potential audiences to the museum websites as well as the physical exhibitions, so that museum collections become really accessible to them. However, without putting into place a clear-cut goal, these types of virtual communities can potentially become a drain on museum resources.

Challenges

While the potential the web can offer is enormous, a number of challenges may occur when the following issues are tackled by museums in practice.

1. Time and resources

As we push forward through the information age, the relationship between museums and their visitors are changing. The examples illustrated throughout this paper imply that the emerging online social technologies are bringing further upheaval to the museum world, which has already undergone an immense transformation of authority. Knowledge itself and its organization is becoming "a social act", as Weinberger (2007: 132) indicates, in which the general public are now collaboratively in charge of how knowledge is structured, spread, and presented. People are no longer waiting for permission in order to find material, they are becoming active learners who take control of organizing the information they browse and blend for themselves. Certainly, museums and other cultural institutions, may still wish to

establish their knowledge authority by giving the official interpretations a prominent presence throughout their websites, but that is no longer the only content available on the web (ibid: 105 -106).

Under such circumstances, the challenge concerning museum resources here is not about searching for financial support or outside contractors so as to develop professional websites. Rather, it has more to do with the growing input from the virtual visitors that may potentially cause problems and require additional staff time and efforts to tackle satisfactorily. There are drawbacks related to situations in which online visitors create a narrative entirely on their own. Without appropriate guidance from the museum, an open discussion may end up with a cacophony of voices or even narratives that validate an untruth or falsity, which would diminish the educational value of empowering experiences. A close monitoring, with possible warnings concerning off-topic conversations and clarification of facts, will certainly help maintain a more productive dialogue, but again, that can be rather time-consuming for museum staff to handle if the site has a substantial amount of traffic.

2. The changing roles of museum professionals

Roberts (1997) states that museums have witnessed an exceptional shift in authority, which holds momentous implications for the future of museums. This has much to do with what we call “empowerment”, by which, she emphasizes, authority was passed from the curator to the educator, and then to the visitor, altering not only how knowledge can be produced but also the intrinsic quality of “legitimate knowledge” (ibid: 45). Certainly curators’ scholarship is still at the heart of every museum, but education would not be possible without the specialized skills of educators as well as webmasters whose jobs are to locate museum interpretations associated with the collections on the web platforms so that visitors can learn and contribute their personal knowledge back to the museum (Liu, 2008). All this process of empowering the visitor to create a quality narrative requires shifting roles for museum professionals, with which they need to guide the multiple narratives whose experiences in relation to each other should be interwoven in a harmonious way.

That is to say, the roles of museum professionals have expanded to encourage ongoing conversations with their visitors and bring unified meanings to the narratives so that visitors can not only enjoy having input into the community, but also gain constructive learning experiences with the museum. This implies that a new field of professional position is emerging, one that is in charge of managing virtual communities associated with the museum. This position may need expertise in a number of areas, embracing different skills of creating and cultivating online communities. As Marty (2007) suggests, purely technological skills such as understanding HTML code and server languages, designing user-friendly navigation and executing usability tests are no longer going to be enough to be a competent museum webmaster. Such professionals will need to continue to evolve their skills to utilize the changing web tools and stay in tune with the demands of their online

visitors.

It will be of great importance for those working in creating online learning environments to have excellent communication skills and the ability to engage people. They may need to be the initial “champion” of the user community (Bowen, 2008), performing the role as an advocate for different types of users and understanding the nature of online learning. The ability to engage, motivate, and inspire people to become active community members, and serve as a mediator to negotiate the different ideas of online users and to generate unified solutions towards a coherent goal, will be increasingly important. They will also need to be facilitators, creating the sense of community while maintaining a commitment to the museum collections, as well as knowing when to step back and take on the role of an anonymous community member. All these skills encompass multiple disciplines and therefore will be a great challenge for museums to address in the coming future.

3. Authority vs. openness

Museums are inherently discreet and conservative institutions, often with a long history. At the core of what ensures that museums are held in high regard in a society is always their authority over certain knowledge domains. The call for openness and transparency with the public, while bringing benefits, casts a great challenge of making the meanings of museum collections become explicitly contestable and negotiable (Parry & Pratty, 2008). To reach a consensus within the museum departments on whether it is appropriate to move from a culture in which the curatorial knowledge is authoritative to one where the expert opinions are open for discussion is a major hurdle to be overcome.

It is definitely not advisable to just release control of museum content, empower visitors to make use of this, and accept the value of their views, without any sophisticated preparation and organization. Nevertheless, the issue of being open and conversational with the public must be addressed if museums are to remain relevant and not left behind in this increasingly participatory world. A more flexible approach is proposed by Brian Kelly et al. (2008), where museums must respond to the call to embrace the open culture, provided the visitor input can help to produce continuously evolving content. They should also be cautious if the potential risks are perceived to outweigh conceivable benefits.

4. User-generated content vs. legal responsibilities

What kind of risks will be entailed when museums embrace the open culture and build participatory communities on the web? The notion of user-generated content (UGC) has worried museum professionals because of potential problems in relation to it. The issues often center on how to counteract the effects of inappropriate notes, misleading comments, irrelevant inputs, offending statements, spamming, etc., and most thorny, copyright infringements. All these issues, which originate from a museum’s devotion to the open

culture through empowering visitors to assert themselves, may result in undefined legal responsibilities. Should museums take the responsibility for the poor-quality content that is generated by a user in association with museum collection? It is hard to tell whether a piece of UGC, which may be produced in a third-party social networking site, will eventually result in making museum content more accessible or, undesirably, reflect on the museum's reputation badly.

With all the concerns, museums have often opted for relatively conservative but safe approaches to tackle the potential problems, such as using strategies of copyright protection to deter users from abusing object images, or deploying a moderation system, which requires a formal checking process before any user content is approved and published online (Kelly et al., 2008). It is certainly crucial to adopt some methods to protect a museum's intellectual property and educate users to consider a museum's services with respect. On the other hand, James Boyle (2006), a board member of Creative Commons¹⁹, makes a refreshing argument to disprove some of the long-established beliefs in copyright protection. He claims that people tend to overestimate the importance of protecting intellectual property since our experience with tangible objects often becomes a persuasion that any resource will be depleted once used. For digital content that can potentially add even more value by being widely used, and thus more well-known and desirable, the benefits of opening up its access are still far less recognized.

Conclusion

It is often the case that the debate over openness results in outspoken views (Numerico & Bowen, 2005). At one extreme is a vision in which control is the norm and all the authoritative content must be protected. At the other extreme is a vision in which boundless creativity is encouraged but legal responsibilities are unclear. Under such circumstances, museums do not have to be left vulnerable to users' exploitation through free sharing and immoderate discussion, but it is worth trying to find a balance between the extremes and give appropriate weight to both the benefits of authoritative control and the productive power of user-generated content.

Weinberger (2007: 10) affirms that, in order to take full advantage of digital technologies, institutions have to discard the idea that there is "a best way of organizing the world". Although the approach of making online learning environments more "behind the scenes" will let in a breath of the miscellaneous, providing a well-balanced learning experience that makes sense for both the institution and the public is really the key to the

¹⁹ Creative Commons is a Massachusetts-chartered charitable corporation. Their mission is to formulate a range of possibilities between full copyright and the public domain. Their licenses engender a "some rights reserved" copyright, which helps people and institutions to maintain copyright while encouraging certain uses by the public. (Source: <http://creativecommons.org/about/>, accessed 2008/12/10)

success of museum education. Even ignorant comments from the visitor add something to the constructive dialogue, because often, immediately following the ignorant comment, is a comment from another member, taking the first to task. Whether the museum's online learning environment finally provides a true consensus, an illusion of consensus, tells a story from multiple perspectives, presents different or even opposite narratives, and encourages everyone to have their own say, each approach has its own benefits and can potentially result in meaningful online learning experiences.

Therefore, the conclusion of this paper is that a balanced approach is preferable, by which museum's authoritative content and user-generated narratives will complement each other through locating the educational roles of museum websites and virtual communities in a hand-in-hand manner. The diagram below illustrates this approach (figure 15). It is as Roberts (1997: 145) contends when she states: "The result is a relation of shared authority, as both visitors and museums engage in constructive activities that give rise to the possible meanings of things. This is the essence of education." It is also hoped that, by doing so, our knowledge as a society will continue to increase and evolve. The knowledge of museums, as it would be in any other scholarly forums, academic journals, or research laboratories, should be subject to peer-review, public scrutiny, consensus, or contraction by the larger society. Part of this process involves making the methods of scholarship transparent and allowing the majority of people to understand how particular knowledge is obtained. To achieve this, museums need not only to maintain the accuracy of factual truths, but also to endeavor to collect different viewpoints and unique narratives from the outside world on a recurring basis.

The web can be seen as a breeding ground for open culture where museums can fulfill their educational missions by bringing people together virtually, engaging them in exchanges of ideas, and fostering a plurality of learning experiences through increasingly

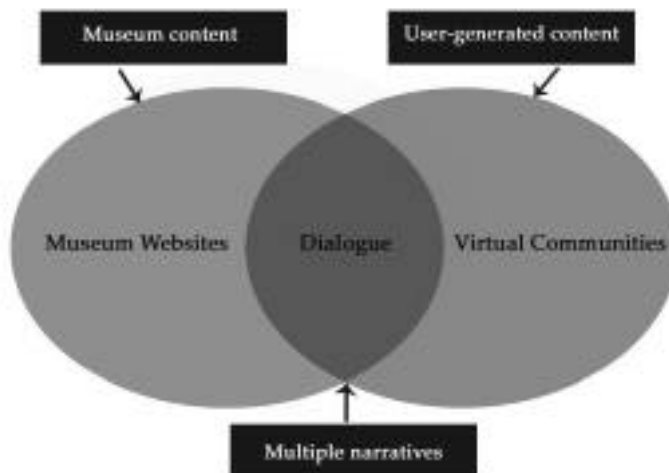


Figure 15. Creating online learning environments for museums

social and spontaneous styles of interaction. While it is vital for museums to be a credible authority in a society, becoming part of the virtual communities embraced by the public is also fundamental to remaining relevant in the outside world and bringing museum content into everyday life. It will definitely involve relinquishing some control; however, as Matthew MacArthur (2007: 64) states, “deeper levels of trust and collaboration with users could not only improve learning and increase audience engagement, but [will] also enhance knowledge and stimulate creativity across the board.”

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創造一個賦權式的博物館線上學習環境

劉襄儀⁴

摘要

近年來強調溝通為取向的博物館學思潮，已促使博物館教育的面貌從權威性的主導角色，日益朝向接納與包容多元的公眾觀點。網路的普及進一步加速了此種發展趨勢，協助博物館納入廣大的線上訪客之參與，創造出更為雙向互動的對話。顯然，博物館教育的地景已正面臨轉變，特別是當線上參與者以前所未有的姿態踏入這塊疆域，模糊且擴大了我們向來所理解的博物館經驗。此轉變於是乎，也正召喚著我們去思考：應該讓網路扮演什麼樣的角色，方能真正有利於實現博物館教育的願景？本文剖析世界各地的博物館實務，聚焦於其如何透過線上策略來為廣泛大眾提供多元的學習經驗、創造對等交流的溝通、培育博物館與訪客之間的夥伴關係。針對網路所帶來的機會、潛能與挑戰，作者提出一些平衡性的觀點，建議博物館應該要在不減損其作為可信的知識仲裁者之餘，設法賦權予線上訪客之內容共造，方能融入在地思考、與外在世界建立關聯。

關鍵詞：博物館教育、博物館網站、線上社群、網路學習環境、賦權式線上學習

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