
Audience participation in museums: Game Design as Learning Activity

Nikoleta Yiannoutsou
HCI Group
University of Patras, Greece
nyannoutsou@upatras.gr

Nikolaos Avouris
HCI Group
University of Patras, Greece
avouris@upatras.gr

Christos Sintoris
HCI Group
University of Patras, Greece
sintoris@ece.upatras.gr

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Abstract

We discuss game design as an example of museum audience participatory activity and we identify its learning dimensions. In particular, we elaborate on the role of technology in providing a scaffold that can help museum audience to construct games which can function as “public artifacts” and can be added to the museum’s assets, enhancing audience engagement and community building. It is claimed that the emerging trend invites visitors to participate in the process of culture creation.

Author Keywords

museum learning, game based learning, museum audience participation

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

This paper builds on previous work about the use of technologies for learning in cultural institutions [1, 16] where an analysis of selected cases revealed that technology mainly functioned as a medium for information delivery. This use of technology treats culture as something that can be “transferred” from the “knowledge holding” museum to the visitor. In this

context, museum experience is structured around the consumption metaphor: the museum produces “information” in digital or other form, for the visitor to consume. Studies evaluating the learning experience of the information consumption metaphor highlighted visitor limited ability to remember, digest and utilize the information offered [2]. Furthermore, various studies report decrease in the audience of museums and cultural institutions [3]. Technology has been employed in various ways by museums to support their reconnection with the public where we identify two main trends with respect to the learning experience pursued. One, more established one, focuses on refining the information and the way it is delivered to the visitor. The second, more recent one, redefines the role of the visitor and her relationship with the museum in the process of culture creation. In this paper we briefly refer to and give examples of learning experience based on visitor participation in culture creation, in particular, based on game creation.

Participation as a context for learning

Participation-based cultural experience is based on the assumption that culture is generated dynamically through the dialectic relationship between the museum and the visitor [3]. Proctor [4] used the metaphor “From Parthenon to Agora” to illustrate the shift from the perception of cultural experience as something that the museum holds and the visitors see but don’t touch, to something that can be discussed, shared and negotiated. Apparently, the role of the visitor in this context changes to collaborator and partner [3]. Furthermore participatory cultural experiences imply a new relationship between the visitor and the museum which is not restricted to one off or first time visits. Instead, participation aims also at building an enduring

relationship with existing audiences and communities (museum friends, volunteers, etc.) related to the museum [5]. Building an enduring relationship between the visitor and the museum through active participation of the visitor enhances the cultural experience for the visitor and enriches the content and the impact of the museum also on first time or one off visitors (ibid). In the wide spectrum of participatory activities we identified two types of activities relevant to our analysis. The first type of activity reserves for the visitor a role similar to the documentation process performed by the museum. The proliferation of mobile technologies and social media has supported the creation of user generated content using various crowd-sourcing practices [6]. The second type of activity aims at resuming or approaching cultural experience through engaging visitors in the creations of “meta-artefacts” – i.e games or stories based on compositions of elements of cultural content - which are supposed to have a public status. The idea of involving visitors in creating computer-based public artefacts that make use of cultural content is new. It builds on a theoretical background that acknowledges the gap in the communication between the museum and the visitor and calls for active participation of visitors in the dialogue with the museums [7,3]. Three examples of this kind are: (a) The British museum organized a 2-hour family workshop on game design. Participants were invited to build their own games, that can be uploaded on the web, inspired by the collections and stories of British museum (after visit experience). (b) In Tate Gallery young visitors (6-12 years) create games for Galleries [8] and films for pieces of art. (c) An activity involving remixing museum content for the creation of a visitor generated narrative [9].

These examples build on the idea of “objectified cultural capital” [10], which explains that cultural experience is not just an issue of access but it is also an issue of background knowledge that supports the person to appreciate and understand the value of a piece of art. Museums and cultural institutions offer in the process of culture creation not only the objects-exhibits but also the background knowledge about the exhibits. In our view the key in this process is how we integrate and combine exhibits and background knowledge in the cultural learning experience. For example, museum knowledge does not have to be presented as an axiom to the visitor but in any case it needs to come into his/her attention as material to be negotiated, discussed, shared and used for the construction of something new. We argue that technology can play a crucial role in this approach and we further illustrate this presenting the example of game design as a context for learning in cultural institutions.

Game design as learning activity in cultural institutions

Game play is not a new practice for museums, as play is an important element in our culture and society [15]. Whereas there is an extensive analysis on game play, research in cultural heritage sites have not addressed yet the idea of game design as an end user activity. Interestingly, research in the field of technology enhanced learning has already highlighted the learning potential not only of game play but also of game design and development [11].

Game creation in cultural institutions as participatory learning activity should be integrated in activities that will give the chance to visitors to interact with museum staff and discuss, negotiate, and integrate in their games different aspects of cultural content. Game

creation can be supported by technological scaffolds (such as game templates) and personalization techniques that present the museum view in order for the audience constructions to meet their standards and become a public artifact that can be used by other visitors, can be shared, revisited, discussed, changed and expanded.

When it comes to technology based scaffolds for game design there is a question we need to address: Do we need to design game-creation platforms to support learning in museums or we can use existing solutions such as KODU, storybricks, Game Star Mechanic, Game maker, the Games Factory, etc. (for a critical review of technologies for game design see [12]). The answer here is that the technologies used for game design are configured to support not only the creation of games but also to facilitate the other objectives related and integrated in game design (e.g. the different types of learning, or in our case the cultural experience). Thus when game design is employed for purposes other than game creation then the design tools consist of elements and support practices related to the purpose for which game design is employed. So, for example in the case where the learning objective involves spatial concepts then the tool focuses on bringing into the foreground the issues related to orientation, map alignment, use of systems of reference and how these will be integrated in the game (for a detailed description see [13]). It becomes apparent then that if we want to employ game design in the cultural experience we need to create a platform that engages users with what is considered crucial for the cultural experience. In the case of cultural experience the game design platforms could focus on the connections the visitor can make between the different cultural artefacts and with overarching concepts, beliefs and narratives [14,6].

Example: the Linking games template

In this section, we discuss three of our own recent projects that are based on the idea of a template for linking games for visitors of cultural heritage sites that allow for audience generated content.

The first project, **MuseumScrabble**¹(2007-2009), is typical of the first phase of location-specific games. The rules of the game allowed for competing teams of players (typically visiting school classes) to make connections between exhibits and more abstract topics. The more meaningful the connections, the more points a team get. The players moved in the museum with a hand-held device and scanned the exhibits they deemed as important to the game. The museum administrators could alter the game content by introducing new topics that can be meaningfully connected to exhibits.



Figure 1. CityScrabble: (A) topic selection, (B) link topic to object, (C) objects on the map

CityScrabble (www.cityscrabble.gr) is the implementation of the same idea for open spaces. It is a multi-player mobile (Android) game where players are competing individually or in small teams in order to locate objects in the real world and connect them with "keys" using their mobile devices. They can be any place or object that is tagged with a QR tag in the area and are activated when a player scans the tag with the device or when she gets within range, using the GPS to prove that she has correctly identified it. The game is independent of the location, and the content can be modified and adapted to different sites.

A variation of this idea, **BenakiMuseumScrabble** (hci.ece.upatras.gr/bms), is a current project for a major historical museum in Athens, Greece. Visitors use mobile devices and explore the museum trying to connect the exhibited items with content that is not part of the current exhibition. The rules of the game allow the visitors to construct "paths" that link the exhibited items in possibly unexpected narratives. Each such path consists of a link between an item that is exhibited and hidden content.

Related to the above is the **Game Content Editor** is an ongoing project that aims at involving the audience in the creation of content, including game rules adaptation. It uses the Google+ Hangouts API to provide a publicly accessible interface. The current iteration of the GCE supports the CityScrabble game. Users can connect and create content for any suitable location (e.g. a city center, an archaeological park etc). The combination of the public editor and a game that can be installed by anyone allows for audience-generated visitor experiences.

¹ hci.ece.upatras.gr/museumscrabble

Concluding Remarks

In this paper we discussed the use of technology as a medium for learning in cultural institutions with focus on visitor participation in the process of culture creation. Our analysis shows that participatory activities such as game design when scaffolded by technology and integrated in museum activities can offer rich learning experiences which reserve for the visitor the role of collaborator and partner and entail the creation of an enduring relationship with the museum. This rather new approach needs to be further investigated and supported through specific game-design tools and empirical studies.

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