Bridging formal and informal learning using mobile digital museum trails

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Abstract
This paper looks at a project that developed and tested trails for Higher Education (HE) Design students to access using mobile devices in the museum. It details findings about the needs of HE Design students in the museum and the ability of mobile learning to play a part in supporting learners’ needs. Evaluation of such technology raises interesting methodological questions about how to take learners’ life worlds into account. Pedagogical issues raised by the project include balancing direction and free choice in museum visits, designing generic learning materials for HE, and collaborating with a wide range of contributors. Technological issues raised by the project include ambivalent responses from students to the devices and suitability of this tool as a learning device for HE students in museums.

1. Introduction
Museums are acknowledged to be an important part of Higher Education students’ learning, yet museums and universities are not collaborating as much as they could be. Museums are often seen as a place of ‘leisure learning’ (Hooper-Greenhill, 1999) but play a very different role for HE students. Current approaches to museum learning acknowledge the different and individual stories that make up learners’ life worlds. This includes individuals’ prior experience, interest and beliefs as well as choice and motivation.

2. The iGuides from StreetAccess project
The ‘iGuides from StreetAccess’ project involved the creation of 20 web-based gallery trails for design students to access on Personal Digital Assistants (PDAs) at the V&A using StreetAccess software (see Figure 1). Students could access the learning resources designed for them as well as input their own information in the form of voice recordings, photographs and text. They could access their ‘personalised’ trail on the web afterwards.
Trails were evaluated as part of a formal strategy designed to elicit attitudinal responses to trail content and the technology. The aim of the evaluation was to look at evidence of meaning making from students’ dialogue and activity in context. It addressed this through methods including accompanied visits, interviews, focus groups and analysis of the data uploaded by the students. The project was analysed using a methodology adapted from Falk & Dierking’s (2000) Contextual Model for museum learning, Laurillard’s (2002) Conversational Framework, and Activity Theory (Kaptelinin & Nardi, 2006).

3. Findings

Baseline research conducted as part of the Centre for Excellence in Teaching and Learning through Design (CETLD) at the V&A provided useful insights into the ‘life worlds’ of Design students. Designers are drawn to concrete, sensory experiences, learning in a hands-on way by trial and error and by testing concepts in new situations. In the museum, Design students need help with learning to look at and from objects, and they are likely to continue object-based study after their visit. Trails were designed to accommodate Design students’ learning styles and to be used on unaccompanied visits to the museum (see Figure 2). In the trials, students conducted the trails in pairs, with one PDA per pair. This arrangement seems to have stimulated dialogue between the students.
Responses to the trail content were broadly positive. Students appreciate information presented to them in different modes such as images and audio, and they valued the inclusion of multiple perspectives from outside as well as inside the museum — particularly those of tutors and other students. The trails encouraged students to investigate objects they would have otherwise overlooked, and to spend longer looking at and examining objects in close detail.

We experimented with different trail types and structures, some for example comparing display strategies in the galleries and the museum shop; others prompting students to undertake behaviour and activities not common in museums, as a way of drawing attention to museum social conventions. The technology mediated students’ experience of the trails by prompting and enabling the collection of multimodal data, which was then carried across contexts via the Internet. At the same time, technological breakdowns brought to the fore issues of mobility and network access, device usability and the relative notion of portability.

Students’ captured trail data is not a validated form of assessment, but tutors agreed that mobile learning implementations of this type can serve a valuable purpose in supporting students’ learning in between assessments, since at HE level assessments are fewer and further between than in schools. They also agreed that the technology can play an important role in informal learning since the time tutors can spend with students has been steadily falling. Based on our findings, successful interventions should include and support multimodality and multivocality, and treat the technology as a bridge between different learning contexts, linking not only physical locations but the personal and social connections between students, artefacts, history and use.

References