

# Families and mobile devices in museums: designing for integrated experiences

S. RENNICK-EGGLESTONE, P. BRUNDELL, B. KOLEVA, S. BENFORD University of Nottingham

M. ROUSSOU University of Athens

C. CHAFFARDON Cité de l'Espace

---

This paper presents an observational study of eight families engaging with a bespoke tablet experience produced for a space science centre. It documents the various ways in which family members orientate themselves to the usage of technology in this environment, with a particular focus on the work done to manage the tablet and facilitate the engagement of younger children with the narrative of the experience. These findings are considered in the broader context of the need to design experiences that cater for engagement by families as a whole. We conclude by motivating the need for technologies that support the coordination of digital experiences across multiple devices, and which provide functionality to directly support facilitation work.

---

• **Human-Centred Computing** → **User studies**

Additional Key Words and Phrases: Mobile experience design, museum studies, facilitation work

---

## 1. INTRODUCTION

Family groups are an essential element of the visitor base of many museums [Cone and Kendall 1978, Ellenbogen 2002], and as mobile devices and other digital technologies become increasingly integrated into the visiting experience, the needs of families will be an important consideration for technology design. Whilst many existing mobile visitor experiences target usage by individual visitors, members of a family group will often explore a museum together [Falk and Dierking 2009]; prior work has considered the value of designing experiences that coherently integrate interactions by multiple members of a family [Asai, Sugimoto and Billingham 2010], and also motivated the design of experiences for usage by “intact social groups” [Simon 2010]. How best to design for integrated family experiences is an open question, and might be informed by studies of how families behave in museums [e.g. see Tolmie et al 2013], and of how family members orientate themselves to the usage of technology in this environment. This paper engages with the latter by presenting a study of a technology deployment in Cité de l'Espace (CITE), a science education center in Toulouse, France. This deployment made use of a bespoke tablet app produced specifically for CITE as part of CHES (Cultural Heritage Experiences through Socio-personal Interactions and Storytelling), a collaboration between technology researchers and museum practitioners. To understand how recruited families orientated themselves around a tablet, we conducted a naturalistic observational study of family interactions with the app, which took place during the course of a day-long visit to the site.

---

Permission to make digital or hardcopies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies show this notice on the first page or initial screen of a display along with the full citation. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credits permitted. To copy otherwise, to republish, to post on servers, to redistribute to lists, or to use any component of this work in other works requires prior specific permission and/or a fee. Permissions may be requested from Publications Dept., ACM, Inc., 2 Penn Plaza, Suite 701, New York, NY 10121-0701 USA, fax +1 (212) 869-0481, or [permissions@acm.org](mailto:permissions@acm.org).

© 2010 ACM 1544-3558/2010/05-ART1 \$15.00