

# Designing for Children's Mobile Storytelling

*Sonia Franckel, University of Maryland & Google, USA*

*Elizabeth Bonsignore, University of Maryland, USA*

*Allison Druin, University of Maryland, USA*

---

## ABSTRACT

*Mobile technologies offer novel opportunities for children to express themselves in-context, seamlessly, without disrupting the flow of their formal learning activities or informal play. Most contemporary mobile devices are equipped with multimedia support that can be used to create multimodal stories that represent the rich life narratives children experience, imagine, and want to share. The authors investigated these issues over a 9-month series of participatory design sessions in the Human Computer Interaction Lab (HCIL) at the University of Maryland. In this article, the authors describe their work with children in designing mobile tools for story creation and collaboration. Throughout this work, they asked the following questions: What stories do children want to tell, and how do they want to convey them in a mobile context? The findings suggest the need for mobile technology-based applications that support children's unique storytelling habits, particularly interruptability and multimodality.*

**Keywords:** *Children, Co-Design, Collaboration, Constructivism, Cooperative Inquiry, Multimodal, Smart Phones, Storytelling*

---

## INTRODUCTION

Over the past several years, there has been a growing convergence of two phenomena that signal demand for increased innovation in mobile technologies to support participatory learning and global literacy goals:

1. *From a technologies perspective:* Mobile technologies offer increasingly sophisticated communications features, and are increasingly available to even the most

under-developed countries. By the end of 2008, over three-quarters of the world's population lived within range of cellular networks, with over two-thirds of the world's mobile subscriptions in developing countries (Shuler, 2009). In 2008 alone, the U.S. subscriber base for feature-rich smartphones increased by over 80 percent (Shuler, 2009). Costa (2009) challenges that mobile devices are more appropriate and available in the developing world than laptop programs such as the work done by the One Laptop Per Child Foundation. Instead, he argues, "Globally, the mobile

DOI: 10.4018/jmhci.2010040102

phone is now the primary communication tool. This shift has a stunning impact on developing nations, the wireless industry, and even the Internet itself.”

2. *From a people perspective:* Children from pre-school years through young adult view information & communications technologies (ICTs) – particularly mobile applications – as integrated, key components of their daily lives (Druin, 2009). Shuler (2009) cited survey statistics predicting that over half of American 8-12 year olds will have cell phones within the next 3 years, with over 10 percent of 4- and 5-year olds already using them today. As Oblinger and Oblinger found in their 2005 survey of American youth, “Information technology is woven throughout [their lives], but [they] probably don’t think of it as technology”.

Yet a disconnect exists between the statistics confirming the influence of mobile devices worldwide, versus the amount of research being done to optimize their positive impact on children’s education and global awareness. While isolated pockets of research exist, many of the experts involved have called for greater visibility and funding (Shuler, 2009). The emphasis, they argue, is no longer on whether and what to design, but how to improve existing applications to fit the lives of children everywhere, whether at school or at play (Druin, 2009). The design case study described here adds to the small, but growing body of research that seeks to improve mobile applications for children. Further, it aims to address the even smaller body of research (to date) that has investigated children’s perspectives when creating stories with mobile devices.

This article details our 9-month design work in developing children’s mobile storytelling, with 8 children as our design partners. First, we provide a review of the research landscape, drawing parallels between children’s developmental needs to compose stories with a variety of media, and the multimedia affordances

available in emergent mobile technologies. Next, we detail our research methodology and design sessions with our children design partners. Finally, we summarize our initial findings and their implications for designers of mobile technologies and educators.

## CHILDREN’S STORYTELLING HABITS AND MOBILE PHONES: MADE FOR EACH OTHER

Storytelling is an essential part of human communication and sense-making, and has been studied in many diverse fields of research, from literary criticism and linguistics to education and cultural studies (Hartnell-Young & Vetere, 2008; Klerfelt, 2006). As Barthes (1975) summarized, “[N]arrative starts with the very history of mankind...Like life itself, it is there, international, transhistorical, transcultural” (p. 237). Stories offer children a means for self-expression and sense-making about the world around them (Decortis & Rizzo, 2002). Storytelling is a fundamental way for children to learn about their own culture and to explore others (Cassell & Ryokai, 2001; Decortis & Rizzo, 2002; Hartnell-Young, 2008; Wolf, 1998).

Despite a breadth of research on storytelling, few studies have investigated the use of mobile technologies to support story creation or collaboration for children. Early efforts to integrate technology into children’s storytelling activities merely extended linear print-based models to the screen, enabling image creation and some text, but not accounting for the ways in which children integrate imaginary worlds with physical objects during pretend play (Cassell & Ryokai, 2001; Decortis & Rizzo, 2002). Others would “tell” stories via animation and audio, but did not invite children to extend existing tales or create new ones (Cassell & Ryokai, 2001). Many remained bound within the classroom, neglecting opportunities to connect between formal and informal learning (Speaker et al., 2004; Wolf, 1998). Several aspects of storytelling research, however, highlight potential affordances that mobile phones can offer children:

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/article/designing-children-mobile-storytelling/43005](http://www.igi-global.com/article/designing-children-mobile-storytelling/43005)

## Related Content

---

### User-Centered Evaluation of Personalized Web Sites: What's Unique?

Sherman R. Alpert and John G. Vergo (2009). *Human Computer Interaction: Concepts, Methodologies, Tools, and Applications* (pp. 177-191).

[www.irma-international.org/chapter/user-centered-evaluation-personalized-web/22248/](http://www.irma-international.org/chapter/user-centered-evaluation-personalized-web/22248/)

### Successes and Failures of SAP Implementation: A Learning Perspective

Tanya Bondarouk and Maarten van Riemsdijk (2009). *Human Computer Interaction: Concepts, Methodologies, Tools, and Applications* (pp. 2214-2234).

[www.irma-international.org/chapter/successes-failures-sap-implementation/22379/](http://www.irma-international.org/chapter/successes-failures-sap-implementation/22379/)

### Building a Paperless Service: Making the Internship Connection

Theresa M. Vitolo and Aaron J. Sparks (2006). *Cases on the Human Side of Information Technology* (pp. 247-261).

[www.irma-international.org/chapter/building-paperless-service/6489/](http://www.irma-international.org/chapter/building-paperless-service/6489/)

### Impacts of Behavior Modeling in Online Asynchronous Learning Environments

Charlie C. Chen, Albert L. Harris and Lorne Olfman (2007). *Issues and Trends in Technology and Human Interaction* (pp. 128-151).

[www.irma-international.org/chapter/impacts-behavior-modeling-online-asynchronous/24716/](http://www.irma-international.org/chapter/impacts-behavior-modeling-online-asynchronous/24716/)

### Enlivening the Promise of Education: Building Collaborative Learning Communities Through Online Discussion

K. Kaur (2007). *Enhancing Learning Through Human Computer Interaction* (pp. 132-153).

[www.irma-international.org/chapter/enlivening-promise-education/18339/](http://www.irma-international.org/chapter/enlivening-promise-education/18339/)