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## Editorial

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**Biographical notes:** Narcís Parés holds a PhD in Audiovisual Communication, specialising in Virtual Reality; an MSc in Image Processing and Artificial Intelligence and a BSc in Computer Engineering. His research interests centre around interactive communication, interaction models, interactive playgrounds and full-body and embodied interaction, primarily for children and persons with special needs. He is an Assistant Professor in the ICT Department of Universitat Pompeu Fabra (Barcelona, Spain) and is a co-creator and coordinator of the Interdisciplinary Master in Cognitive Systems and Interactive Media.

Tom Moher holds a PhD and SB in Computer Science, and serves as an Associate Professor of Computer Science, Learning Sciences and Education at the University of Illinois, Chicago, where is co-director of the Learning Technologies Group, a collaborative research laboratory in Human-Computer Interaction and Learning Sciences. His research focuses on the technologies to support collocated activities, with a particular emphasis on supporting embodied science enquiry learning and teaching in classroom settings.

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The International Conference on Interaction Design and Children held its ninth meeting this year, IDC 2010, in Barcelona, Spain. The conference approaches its tenth anniversary as the nexus of a maturing community of researchers focusing on the ways that technology is transforming childhood and that children are transforming technology.

Why the focus is on children as a distinctive user community? Children can be spontaneous, funny, cruel, mobile, imaginative, sincere, but above all, they are individuals who are remarkably open to innovation, unbiased by prior conceptions of how technology is 'supposed' to be used, and in many ways more 'interaction literate' than adults. Studying the ways that children work with technologies can give us the insight into new interaction modalities for users of all ages, and the ways that interactive media evolve will be determined to a large extent by the preferences and experiences of a generation born with and within an era of ubiquitous technology.

The present collection of selected papers from IDC 2010 offers a sample of contemporary research into the ways that children impact interactive media, and how interactive media can impact children's lives and ways of understanding our world. From projects for children with autism to applications that transform education, moving through experiences that motivate children's exploration of their heritage or change their view of play, these papers reflect the opportunities and challenges that we face in our quest to understand how to better design interactive media for the younger segment of our society.

Working for children with special needs, the focus of two of the papers in this collection, is especially rewarding, offering support for social interaction and learning that can improve quality of life and broaden opportunities for people with disabilities to contribute to the society. For example, designing interactive experiences to help children acquire abilities in social interaction can be vital for some children that unfortunately cannot learn these by themselves. William Farr, Nicola Yuill and Steve Hinske describe an augmented play set that has been especially conceived for children with autism, presenting some encouraging results showing how the use of interactive technology enhances their ability to engage in cooperative play. In their work describing a hybrid interaction technique, combining the affordances of conventional paper-based representations, tangible artefacts and multimedia resources, Franca Garzotto and Manuel Bordogna offer a novel platform designed to support learners across a broad spectrum of disabilities. Their evaluation of the system in an 'inclusive' classroom offers evidence for the effectiveness of the system both as a learning tool and as a boundary artefact, promoting social interaction among children with and without disabilities.

Tangibles currently represent one of the most promising and active research areas in interaction and the field of interaction for children is no exception. However, correctly adapting tangible systems for children demands physical adequacy in scale and organisation, as well as finding a set of design methods that address their specific intellectual and developmental needs. In their paper, Javier Marco, Eva Cerezo and Sandra Baldassarri provide a very interesting tangible interaction table configuration, and show how it can become a very useful platform to serve as a test-bed for several interaction design approaches.

Two papers in this collection present strategies to allow children learn through interactive technologies. Peta Wyeth and Ian MacColl present a tool to make children reflect upon an important property of the physical world – sound – by using a mobile-based system. The use of low-tech prototypes mixed with physical material provides an insight on what future technology must provide to become a successful tool. Stelios Kourakis, Çakir Aker and Narcis Pares describe the design of an experience intended to make children become more aware and more appreciative of their cultural heritage through playful interaction. The paper also contributes a tentative method to measure and assess the impact of this experience in the knowledge acquired by its users.

According to several studies by the World Health Organization interactive media for home use – such as the internet, video games, handhelds, etc. – are causing serious physical growth issues in current generations of children by inducing them to adopt sedentary behaviours. Moderating these outcomes is important not only for health and well-being of children today, but also for their future adult lives. Countering these issues through the use of interactive media is especially interesting because of their appeal to children. Hisakazu Ouchi, Yoshifumi Nishida, Ilwoong Kim, Mikiko Inoue, Yoichi Motomura and Hiroshi Mizoguchi describe a very interesting system that allows children

to climb a computer-controlled rock wall. The paper presents an analysis designed to support users in learning which are the best ways to climb and fall from this platform, and how the system can incorporate this knowledge to make it a fun yet safe system.

It is difficult to overstate the importance of collaborative storytelling in the lives of young children; stories serve both as a critical mechanism for the development of sociality through collaborative play and as a foundation for cognitive development. Two of the papers in this collection describe approaches to utilising technology to scaffold storytelling for children in networked, collocated contexts. Jerry Alan Fails, Allison Druin and Mona Leigh Guha explore design parameters surrounding the utilisation of individual handheld devices as platforms for collaborative reading and creation of stories. In their paper, they describe the impacts of alternative strategies for ‘sharing’ the visual content of stories between users, and how those impacts vary depending on whether reading or composition is the goal of the activity. Nicoletta Di Blas, Paolo Paolini and Amalia Georgiana Sabiescu describe technology and pedagogical designs intended to scaffold story construction not by individuals or small groups, but instead by entire classrooms of children, reporting teachers’ perceptions of the effectiveness of the system within the context a national trial of the system in Italy.

Children act differently when adults are present. This is especially problematic in research with children, when the presence of a researcher who is prompting or assisting a child might have a confounding influence on the evaluation of technology designs. Sjeff Fransen and Panos Markopoulos offer here a study that explores how the degree of intervention and emotive effect impact the effectiveness of a stationary social robot serving as replacement to the human researcher. In the paper, the authors present the results of an empirical study comparing the robot to the conventional human intervention.

Children need not be only consumers of technological products; they may also serve to directly make design contributions. In a paper enlisting children as co-designers of handheld musical instruments, Emanuela Mazzone, Ruut Tikkanen, Janet C. Read, Netta Ilvari and Russell Beale chronicle the ways in which children’s ideas and work products were utilised during the design process. In their analysis, they symmetrically consider both how children served design as well as how the design process served the children, and offer design guidelines for the effective engagement of children in the development of their own technologies.

We invite you to enjoy these papers from IDC 2010, and we will be looking forward to your contributions and participation next year at the tenth meeting of the conference, IDC 2011, to be held at University of Michigan in Ann Arbor, Michigan, USA.