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► **To cite this version:**

Sumita Sharma, Juhani Linna, Biju Thankachan, Markku Turunen, Heli Väätäjä, et al.. Parental Perspectives Towards Education Technology in Low-Income Urban Households. 16th IFIP Conference on Human-Computer Interaction (INTERACT), Sep 2017, Bombay, India. pp.501-503, 10.1007/978-3-319-68059-0_60 . hal-01679775

HAL Id: hal-01679775

<https://inria.hal.science/hal-01679775>

Submitted on 10 Jan 2018

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Parental Perspectives Towards Education Technology in Low-Income Urban households

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Abstract.

Government and NGO schools catering to children from low-income urban environments are increasingly introducing technology in the Indian classroom. However, one of the challenges is convincing low-literate parents the potential benefits of technology in education. In this study, we aim to uncover the concerns and expectations of low-income low-literate parents towards educational technology for their children, through semi-structured interviews. This is an extension of our ongoing work in designing sustainable educational technology models for low-literate urban populations.

Keywords: Sustainable EdTech, Low-income urban population.

1 Research Agenda

The aim of the INCEPT project at the University of Tampere is to define a sustainable model for educational technology acceptance and adoption in low-income urban households. As a first step in this process we focused on the micro-level context of a child's learning environment, namely, the people they interact with every day as defined by Bronfenbrenner's Ecological Systems Model [1]. This includes parents, children, teachers, and volunteers (especially in the case of NGO schools). These different stakeholders have individualistic motivations towards technology acceptance and adoption. For instance, most schools charge extra tuition for computer courses, or additional 'maintenance' charges for purchasing smart boards, which parents should feel worthwhile to pay for. Moreover, there is fear of technology influencing children negatively, and making them easy prey for people with malicious intent.

Studies with rural Indian parents shed light on the challenges in technology adoption and acceptance in low-literate communities [1]. However, we have found that the challenges faced by low-income low-literate *rural* parents are different from those faced by low-income low-literate *urban* parents. This is because parents in urban areas are more exposed to technology (smart phones, tablets, computers) in their environment. Thus, what works for one group, may not work for the other. Currently (low-income low-

literate urban) parental perspectives towards educational technology is largely under studied. To bridge this research gap, we conducted semi-structured interviews with several (low and middle income) parents in Delhi, and now extend our work to Mumbai.

The one-day field work will consist of semi-structured interviews with the parents of children in grades 5-8th studying in the local schools. About 5-10 parents will be interviewed. The interview questions are based on parental perspectives and insights towards educational technology – including **economic** (disposable assets, monthly budgets), **socio-cultural** (social practices, technology aspirations, positive aspects and expectations, and inhibitions), **organizational / political** (regulations and organizational practices e.g. syllabus, chain of commands) and **environmental** (e.g. current state of technology usage in the school, infrastructure) **perspectives**. Children, if present during the interviews, will be asked their ambitions in life, their favorite games (computer/mobile), about technology in their school and technology they wish their school/home had. Additionally, background information of the participants will be collected, along with short videos and pictures of the interview environment, and if possible, one of the schools. Parents will not be asked to try any technology or artifact. With this work, we aim to understand how these perspective can potentially influence the use and adoption of educational technology. Furthermore, we draw parallels between low income low literate parents living in two of India's largest cities: Delhi and Mumbai.

2 Team

The team consists of *Prof. Markku Turunen*, Head of the Masters Programme in Human-Technology Interaction, the Pervasive Interaction research group and the India Network at the University of Tampere. He is also the principal research investigator for the INCEPT India project.

Postdoctoral Researcher Heli Väättäjä, who is participating in the INCEPT India project from the Tampere University of Technology, with a strong research experience in mobile system use and field studies, and has published on mobile mathematics learning in South Africa.

Researcher Juhani Linna, who focuses on novel interaction methods in varying industry and societal contexts, from a sustainable business perspective.

Doctoral Candidate Biju Thankachan, whose focus is on developing text-free user interfaces for low-literate users, for societal impact.

Researcher Sumita Sharma, whose doctoral thesis work on designing novel interactive educational application for under-served Indian children aligns with the study.

Researcher Pekka Kallioniemi, whose doctoral thesis work is concentrating on way-finding on virtual environments. He has also been involved in several ICT4D related projects, including Rural Voice where mobile applications for farmers in rural Karnataka were developed.

Prof Janet C Read, whose research group (ChiCi) has been looking at the design of serious games for children with an emphasis being on the design of serious games for children in developing countries.

Dr. Gavin Sim, who is an expert in usability and user experience evaluation with children, and is working with the ChiCI Group, at the University of Central Lancashire, UK. His research interests include the design and evaluation of technology for children, with a focus on the evaluation of educational games and technology.

References

1. Bronfenbrenner, U. (1994). Ecological models of human development. *Readings on the development of children*, 2(1), 37-43.
2. Pal, J., Lakshmanan, M., & Toyama, K. (2009). My child will be respected: Parental perspectives on computers and education in Rural India. *Information Systems Frontiers*, 11(2), 129-144.