Use of touch devices by toddlers and preschoolers: Observations and findings from a single-case study

Naresh Kumar Agarwal

Graduate School of Library and Information Science, Simmons College

300 The Fenway, Boston MA 02115

T +1 617 521 2836 F +1 617 521 3192 agarwal@simmons.edu

Most studies on information seeking behavior have focused on adults, largely in task-based environments (e.g. Agarwal, Xu and Poo, 2011; see Case, 2007 and Agarwal, Xu and Poo, 2009 for a review), and also everyday life information seeking (Savolainen, 1995).

There have not been as many studies in the information seeking behavior of children. Bilal and Sarangthem (2008) review prior models relating to the information behavior of children. They suggest a model in Bilal, Sarangthem and Bachir (2008). Graves (2007) provides a bibliography of studies relating to the information seeking behavior of children between 1998 and 2007. Lingnau, Ruthven, and Landoni (2011) suggest a system-design solution for children between the ages of 6 and 9. Spink, Danby, Mallan and Butler (2010) study young children's web searching in the preparatory year classroom context (including children between 5 and 6 years of age). Based on a qualitative analysis of video-recorded web search and audio-recorded verbal data, Spink *et al.* found that children engaged in complex web search behaviors. They cite this as the first study of young children's interaction with a web search engine. Spink and Heinstrom (2011) discuss information behavior development in early childhood and the connection between general cognitive development and information behavior. See Marsh et *al.* (2005) and Rideout and Hamel (2006) for prior research on young children's use of popular culture, electronic media and technologies. Toddlers and pre-schoolers are in need of greater study, especially relating to their interaction with the recent touch-based devices such as iphones and iPads which only became popular in the last 2-3 years, and children born from 2008 onwards are growing up with a natural propensity to using them.

Through a case study of the use of iphone and iPad by a child between her age from 2 to 4, this paper will present the observations on use, the interaction process, the features of the devices that help and those that hinder in a child's use of these devices. The study will seek to present changes to these devices to make them safer and more effective for the development of toddlers and preschoolers.

Insight gained from the study will shed light on the information seeking behavior of very young children and help in the understanding of a relatively new phoenomenon. Future studies will compare this case with a larger sample of toddlers and preschoolers and compare the findings.

Keywords. Information seeking behavior, toddlers, preschoolers, iPad, iPhone, touch devices

References.

Agarwal, N.K., Xu, Y. (C.), Poo, D.C.C. (2011). A Context-based Investigation into Source Use by Information Seekers. *Journal of the American Society for Information Science and Technology*, 62(6), 1087-1104.

Agarwal, N.K., Xu, Y.(C.) and Poo, D.C.C. (2009). Delineating the boundary of 'Context' in Information Behavior: Towards a Contextual Identity Framework. *ASIS&T 2009 Annual Meeting* (Vancouver, B.C., Canada, Nov 6-11) http://www.asis.org/Conferences/AM09/open-proceedings/papers/52.xml

Bilal, D. and Sarangthem, S. (2008). Task-based models of children's information-seeking behavior in digital libraries. In *Proceedings of the International Association of School Librarians (IASL) Conference* (Berkeley, CA, August 3-7).

Bilal, D., Sarangthem, S. and Bachir, I. (2008). Toward a model of children's information seeking behavior in using digital libraries. *Proceedings of IIiX '08 - the second international symposium on Information interaction in context*, New York, NY: ACM.

Case, D.O. (2007). Looking for information: *A Survey of Research on Information Seeking, Needs and Behavior (Second Edition)*. Oxford, UK: Academic Press.

Graves, A. (2007). *Children's Information-Seeking Behavior: A Bibliography*. Retrieved May 31, 2012 from http://www.pages.drexel.edu/~aeg46/bib.html

Lingnau, A., Ruthven, I. and Landoni, M. (2011). Show and Tell: Supporting Children's Search by Interactively Creating Stories. SIGIR Workshop on 'entertain me: Supporting Complex Search Tasks' (Beijing, China, July 28).

Marsh, J., Brooks, G., Hughes, J., Ritchie, L., Roberts, S. and Wright, K. (2005). Digital Beginnings: Young Children's Use of Popular Culture, Media and New Technologies. Literacy Research Centre, University of Sheffield.

Rideout, V. and Hamel, E. (2006). The Media Family: Electronic Media in the Lives of Infants, Toddlers Preschoolers and their Parents. California.

Savolainen, R. (Summer 1995). Everyday life information seeking: Approaching information seeking in the context of "way of life". *Library & Information Science Research*, 17(3), 259-294.

Spink, A. and Heinstrom, J. (2011), Chapter 10 Information Behaviour Development in Early Childhood. In A. Spink and J. Heinstrom (Eds.) New Directions in Information Behaviour (Library and Information Science, Volume 1), Emerald Group Publishing Limited, 245-256.

Spink, A. Danby, S., Mallan, K. and Butler, C. (2010) Exploring young children's web searching and technoliteracy. *Journal of Documentation*, 66(2), 191 – 206.

About the author

Naresh Kumar Agarwal is an Assistant Professor at the Graduate School of Library and Information Science, Simmons College, Boston. Naresh earned his PhD from the National University of Singapore's Department of Information Systems, School of Computing. His primary research interests are information behavior, context and source choice – synthesizing and bridging the gap between the empirical and the theoretical, and between the user and the systems perspective. He is also interested in knowledge management, health informatics and happiness. He has published in many of these areas. His teaching interests are evaluation of information services, technology for information professionals and knowledge management. He currently serves as the Chair of the Special Interest Group on Education for Information Science (SIG ED) at the American Society for Information Science & Technology.