

M-Starr - Multi-Sensory Transmission of Alerts, Reminders & Rewards

A Research in Motion Limited & Children's Hospital Boston Collaboration

Purpose: To explore the feasibility of using BlackBerry® devices to deliver timely information alerts, instructions, and reminders to persons on the autism spectrum in visual (i.e., text, images, signs), auditory (i.e., voice, tones), and tactile (i.e., vibrations) forms.

Persons on the autism spectrum are known to have strong visual processing skills despite poor ability to process or understand spoken language. The result of this discrepancy is the widespread clinical use of visual supports for both language comprehension and expression, in the form of photographs, pictures, line drawings and text. Graphical content has also had a profound effect on the organization of daily events in the form of visual schedules. Finally, even when persons on the autism spectrum know what they are supposed to do, they do not readily initiate the behavior on their own – often needing to be prompted. This prompting/reminding responsibility typically falls to parents/aides who must be available continually to monitor and provide ‘just-in-time’ supports. Visual supports often fail to affect behavior for three fundamental reasons: (1) the workload required to create successful visual supports; (2) their availability when needed, and (3) pervasive monitoring needed to intervene when needed (which can interfere with independence). *M-STARR* aims to ease the burden of both creating the visual alerts, reminders and rewards, and delivering them to the person ‘just-in-time’.

To date we have created a simulation prototype of an “ideal” service, and tested it with a small sample of students with moderate to severe autism. Results were encouraging showing that these students could successfully:

1. Recognize visual symbols (e.g., photos, pictures, line drawings, text) that were displayed on a BlackBerry
2. Comprehend the meaning of symbols similarly to when those symbols are presented in other contexts
3. Recognize an alert presented by a BlackBerry
4. Attend to the information delivered by the BlackBerry following the delivery of an alert
5. Operate some basic BlackBerry functionality on current user interface. However, this pilot work revealed that the existing user interface would require further customization to enable persons with ASD to independently access the full set of functionality needed to support *M-STARR*.

Future work includes: (1) using as much of the BlackBerry's existing functionality as possible to create a working BlackBerry application; and (2) creating a customized user interface for this population.

For further information about the project, please contact Howard Shane at Children's Hospital Boston: Howard.Shane@childrens.harvard.edu