

Usability testing of a mobile technology for children with high-functioning autism spectrum and attention-deficit/hyperactivity disorders

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Children with attention-deficit/hyperactivity disorder (ADHD) and high-functioning autism spectrum disorder (HFASD) have organizational skills deficits. Organizational skills include the ability to manage materials (e.g., belongings, books, homework) and temporal skills such as organizing, planning, and managing tasks to completion. This study was a usability test of a prototype mobile technology designed to improve organizational skills. The prototype was assessed for usability and feasibility for future development.

A field-based mixed methods usability test was conducted. Sixteen children with ADHD and HFASD aged 8 to 12 years and their parents participated. The study was conducted in an 8-week summer treatment program. The usability test lasted 15 days, with data collected via observation, child and parent daily logs, surveys, and focus groups.

During the usability test, children brought the prototype technology to camp 95% of the time and used it to record items to bring to camp 85% of the time. Parents completed a daily log simulating mobile functions 88% of the time. Using the prototype device for homework tracking resulted in three times the likelihood that homework was completed. Establishing a contingency between device game time and homework completion resulted in four times the likelihood that homework was completed. Qualitative results suggested that children valued carrying the device and children were motivated by having game time on the device as a reward. In addition, qualitative results showed that parents valued the device as a contingent reward, desired novelty in the device's games and features, and expressed an urgent need for help with their children's organizational skills.

Children will utilize a mobile technology intended for task tracking with game time having a high reward value. Parents value the concept of using a mobile technology to improve their children's organizational skills. The use of mobile technology for building and sustaining organizational skills via performance rewards is a promising intervention for effective home and school-related task management. The effectiveness of a more fully developed mobile technology needs to be assessed in future research.