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An Online Community for Teachers of Children with Autism to Support, Observe, and Evaluate Communication Enabled with Smartphones

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Abstract

We are developing an online community for teachers of children diagnosed with autism spectrum disorder that will provide tools to share, analyze, and evaluate assisted communication. The data will be collected from software on smartphones that allows children to communicate with teachers using images. Since this is the first approach towards systematic data collection for children with ASD, we expect a significant impact on current teaching methods.

Introduction

Autism spectrum disorder (ASD) is one of the most prevalent neurodevelopment disorders and its incidence continues to grow. It currently affects 1 in every 150 American children¹. Because of its prevalence and increased attention in the media, many organizations provide information, conduct or fund research on autism, and offer training for families of children with ASD. Even so, systematic, controlled studies of interventions are rare.

Children with autism have difficulty communicating. A common approach to teach communication is to use cardboard pictures which are combined into a message. We have developed software for smartphones that can be used to assist with image-based communication². The software allows children to form messages in the same manner as the paper-based approaches. Our software has the additional, unique feature that it can track how many images were chosen, when they were chosen, how often, and how they were combined. Teachers and therapists will be able to use the software to systematically track and evaluate children's progress. However, a support environment is needed to leverage this data.

Methodology

Teachers and therapists play a vital role in the communication skill development of autistic children. Unfortunately, resources to teach the children are often minimal. Moreover, many teachers are not trained to do so and have little experience integrating autistic children into their classrooms. We are developing an online community that will help teachers in their daily activities: it will allow them to share ideas, advice, data, and images. Our final goal

is to support and encourage the community integration of autistic children. More specifically, the online community will provide the following services for teachers and therapists: 1) access to relevant, up-to-date information on teaching approaches, 2) sharing of copyright-free images for use with the smartphone software (which will be available as open source software), 3) discussion of teaching styles, and 4) evaluation of usage logs from the smartphone communication software, which provides systematic feedback.

Up to fifty special education teachers will be invited to participate in the design and testing of the online community. This development phase entails: 1) requirement gathering—understand and specify the context of use, 2) requirements specification—identify technical requirements and user goals that must be met for the product to be successful, 3) design—design and staged prototyping, and 4) evaluation—assess the system through testing with actual users. Once functional, others will be able to join and we hope to create a sustainable, online community (www.CommunicationAutism.org).

Conclusion

We believe that the online community will have a significant impact on the use of communication technology and teaching methodologies. Existing teaching styles can be validated while new ones can be developed and tested. As such, we hope to contribute to an improved quality of life and better community integration of children with severe autism and their families.

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