
Transitioning to Independent Living with Complex Communication Needs

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Abstract

In this extended abstract, we describe previous research on a system designed to help children with autism develop peer social interaction skills, my current design goals to support independent living for adolescents with autism, and what we hope to contribute to and gain from a workshop on supporting children with complex communication needs.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

Our research investigates the design and implementation of social technologies to build innovative technology tools for diverse individuals, including children with complex communication needs. For example, a previous project focused on children with autism and technology that supports interaction with their peers. More recently we have become interested in how complex communication needs affect adolescents as they transition to independent living. In this abstract, we provide a brief overview of these projects, and then describe why we want to participate in the Workshop on Supporting Children with Complex Communication Needs, using the projects as motivation.

Previous Work

The social communication difficulties of children with autism and related disorders make peer interactions difficult, and limit access to learning opportunities from peers. To support children's access to peer social interactions, we designed a technology tool called an Authorable Virtual Peer (AVP), a life-sized, interactive virtual child, and developed a group social skills intervention program that incorporated the AVP as a key component of the intervention. We conducted an evaluation that suggests that children's appropriate use of social skills during interactions with a peer increases if children use the AVP system prior to the interaction with their peer [3]. While using the AVP, children: (1) engage in face-to-face storytelling with the virtual peer, using speech and gestures; (2) build new social behaviors for the virtual peer using authoring tools for recording speech and selecting gestures; and (3) select behaviors for the virtual peer to perform while it interacts with another person (in the manner of a puppet). Our research suggests that the tasks of building new social behaviors for the virtual peer and selecting behaviors for the virtual peer while it interacts with another person enable children to plan and construct storytelling interactions, monitor the limitations of the behaviors they created while controlling the virtual peer during a social interaction, and revise behaviors for the virtual peer [3]. We believe it is this process of planning, monitoring and revising social behaviors that helps children develop appropriate use of social skills.

Current Research

More recently, we have become interested in applying the theories underlying AVPs for children with autism to support adolescents with autism transitioning to

independent living. This could involve going to college, finding their own apartment, or getting a job. Despite recent focus on research on autism, studies addressing the needs of children far out-number those investigating the needs of adolescents. For example, in their review of social skills interventions for individuals with autism, Reichow and Volkmar [2] found 35 studies involving preschool children, 28 studies for school-aged children, and just 3 studies for adolescents and adults with autism. As the rising number of individuals diagnosed with autism ages, more research on how to support this population is needed. Indeed, Bishop-Fitzpatrick et al. [1] argue that the challenges individuals with autism encounter as they transition to adulthood are "not being sufficiently met by the current available treatments and services" (p. 692).

One of the challenges individuals with autism face transitioning to independent living is the critical role interviews play in obtaining employment or education (i.e., college admissions and scholarship interviews) and the direct effects that the social communication difficulties of autism can have on their performance during interviews. Currently, we are exploring how AVP technology might apply to the design of a mock interview system. We are: (1) developing models of the social interactions that occur during an interview to inform the design of our system; (2) examining what context for virtual mock interviews best models the experience of face-to-face interviews, a virtual environment where the user is represented as a character in a virtual world or a shared reality where a virtual agent is projected on a screen in the user's world; and (3) designing authoring tools for building and controlling social behaviors for a virtual agent. We will then evaluate if these tools can support individuals

in developing interview skills. Our hypothesis is that the same practices of planning, monitoring and revising social behaviors will help individuals develop these skills.

Why I want to participate in the workshop

Our experiences with designing and evaluating a technological intervention in a social-group context can offer a number of insights that may be relevant to other participant's projects. Similarly, other workshop participants may have valuable insights on our current research and similar interests that could lead to collaborations.

What I can contribute to the workshop

The design of the AVP system involved an iterative design process working with children with and without autism. Prior to the evaluation study, we conducted a study with children with autism to better understand the behaviors we wanted to target in the intervention, a study with typically-developing children to devise an initial design of the authoring tools, and a 9-month iterative design study with 7 children with autism. We can offer insights into working with children with autism, how to proceed over the course of the design study, and how to characterize participants for evaluation. Furthermore, the social-group evaluation study led to a review of the use of technology in social-group settings [4]. We can contribute rationale and tips for conducting interventions and studies in a social-group setting.

What I hope to get out of the workshop

Our goal in designing systems for adolescents with autism is to support them as they develop happy and productive lives. Therefore, the voice of those

individuals is critical to the design of our systems. We are interested in discussing what other researchers' requirements analyses with individuals with autism, rather than their parents, has uncovered so far about their needs, and how we might contribute further to this area. We hope to establish new collaborations with workshops participants interested the needs of adolescents with autism, and receive feedback on the current direction of our work.

Acknowledgements

We would like to thank Justine Cassell, Graham Ignizio, Jennifer Lira, Valeria Nanclares-Nogués, Corina Ratz, Carol Rolland, Autism Speaks, the Pediatric Developmental Center at Advocate Illinois Masonic Medical Center, the Spencer Foundation and the Northwestern University Alumnae Association.

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