

BAR-ILAN UNIVERSITY

**Computer-Mediated Intervention to Foster Pro-Social
Language Abilities among Children with Autism**

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Abstract

This study addresses one of the most significant difficulties children with autism (Autism Spectrum Disorder - ASD) face, social interaction, focusing on pro-social language. The study compares preschool children with high-functioning ASD (HFASD) and children 'at risk' of developing Specific Learning Disability (SLD), in order to examine whether pro-social language can be promoted through a computer-mediated intervention program versus a non-computer-mediated intervention program. We hypothesized that the pro-social language abilities of children with HFASD and children at risk of SLD would be similar prior to the intervention program, after which children with HFASD would show higher improvement compared to children at risk of SLD. We also hypothesized that the pro-social language of children with HFASD and children at risk of SLD who experienced computer-mediated intervention would improve more compared to children with non-computer-mediated intervention. The study involved 57 preschool children aged 4-7 ($M = 5.51$; $SD = 0.53$), half with HFASD (27) and half at risk for SLD (30), who had been randomly divided into two groups: (1) computer-mediated intervention and (2) non-computer-mediated intervention. The intervention program was administered over for 11 weeks and was based on the Cognitive-Behavioral Therapy (CBT) model, in which children learned in pairs how to solve social problems. Before and after the intervention, the following tools were presented: pro-social language abilities (social words; verbal and non-verbal expressions), and general verbal ability (vocabulary index). The results showed that before the intervention, in most measures, no significant difference was found between children with HFASD and children at risk of SLD. However, in two out of the ten social words (*spilled*; *afraid*), and in one out of three verbal and non-verbal expressions (*pain*), the scores were significantly higher among children with HFASD. Moreover, both groups had low general verbal ability compared to typically developed children (2 to 3 years gap). A pattern of improvement was found after the intervention in almost all measures among both populations; however, there was a significant effect on the general language ability, and on the social word *to comfort*. The HFASD group's score was higher compared to the risk of SLD group in the social word *happy*, and in the summarized measure *all the words*. Regarding the comparison between the two interventions, children with HFASD who experienced computer-mediated intervention showed a pattern of higher scores in most measures compared

to non-computer-mediated intervention, however significant interaction was found only for the social word *play*. This study contributes to the limited literature on pro-social language among children with HFASD and children at risk of SLD. As far as we know, this is the first study in this field, and it has a potential in reducing the pro-social language gap between typically developing children and children with HFASD and SLD at such a young age.