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Robot-Based Gestural Intervention Prevents Delay in the Production of Intransitive Gestures in Preschoolers with Autism Spectrum Disorder

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Abstract

Children with autism have impairments in communication and social interactions. Past studies have shown that robotbased interventions are effective in improving their gestural use. The present study asked whether or not children with autism could meet the level of gestural production found in age-matched children with typical development after intervention. Four- to six-year-old children with autism in the intervention group ($N = 15$) took four training sessions in which they imitated the gestures demonstrated by a social robot in various narratives. Age-matched children with autism in the wait-list control group ($N = 15$) and children with typical development ($N = 15$) received the training after the completion of the research. Children with autism in the intervention condition produced gestures more accurately in the training and novel stories than those in the wait-list control group in the posttests. Even more promising, the level of gestural production accuracy in children with autism in the delayed posttest of novel stories was comparable to that in children with typical development, suggesting that children with autism could catch up to the level of gestural production found in children with typical development.