Chapter 21
Benefits of Video and Eye Toy Gaming for Children with Autism

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ABSTRACT
The purpose of this chapter is to illustrate how video games, which incorporate eye toy technology, can be utilized to teach social learning to children with autism directly through video modeling and multimedia social story interventions and indirectly through engaging typically developing students with educational video games that increase their sensitivity, knowledge, and behavioral intentions when interacting socially with children on the spectrum and with other disorders, as well. The popular medium of gaming is designed to enhance the appeal of rote instruction for children and their families as well as to create tools that improve a child’s ability to generalize learned social and adaptive skills. Moreover, these tools will offer richer research methodologies for tracking and understanding important micro-developmental changes in daily and weekly interpersonal skills development among both typical and atypical children.

INTRODUCTION
The purpose of this chapter is to illustrate that video and eye toy gaming can be used to enhance the social learning of children with autism directly through video modeling and multimedia social story interventions and indirectly through engaging typically developing students with educational videos that increase their sensitivity, knowledge, and behavioral intentions when interacting socially with children with autism, and perhaps other disorders as well. We suggest that it is important to develop typical children’s positive attitudes and intentions toward peers with disabilities. Research has shown that this can be accomplished through video which has the power to influence a person’s perception and subsequent behavior in other situations, for instance, in moderating the development and use of stereotypes regarding race (Givens & Monahan, 2005; Ward, Hansbrough, & Walker,
Thinking creatively about the power of gaming to enhance development and social interactions among typical and atypical children, as specifically illustrated here for children with autism, will help bring interventions for atypical children into the 21st century as well as allow the development of much richer research methodologies for tracking and understanding important micro-developmental changes in daily and weekly interpersonal skills development.

Specifically in this chapter we address how video games which involve eye toy gaming, can be used as a teaching tool for children with autism to enhance the appeal of rote instruction for children and their families as well as create tools that can enhance a child’s ability to generalize learned social and adaptive skills. An eye toy refers to a small low resolution camera used in video games to capture “players” and insert them directly into the onscreen game. Eye toy technology could be utilized to employ “video self modeling” (VSM), i.e., giving children with autism the ability to capture their own desirable behaviors on-screen. Additionally, we suggest that using video and eye toy gaming as an educational tool enhances the sensitivity and skills of typically developing children, enabling them to feel more at ease and competent with their atypical peers. These themes of the appeal of the educational tool, of the generalizability of key skills learned through the video tool, and of the sensitivity of others to children with autism are woven throughout the chapter.

The rationale for particularly intervening with children on the autism spectrum will be tackled by delineating the high prevalence of autism today, the characteristic deficits associated with autism, the pervasive effect of autism on the family unit, the stigmatization of behavioral disabilities such as autism in both the school and social environment and the particular affinity children with autism appear to have for computers, mechanical toys and visual mediums. The potential of video modeling, video self modeling, and social stories to overcome limitations and expand current educational tools for autism will then be addressed to show how video games incorporating eye toy gaming can enhance both typical and atypical children’s sensitivity and social skills. Finally, the chapter will close by speculating how a theory pertaining to our bio-evolutionary roots may lend further support to the effectiveness of video and eye toy gaming for teaching generalizable skills and by suggesting further routes towards utilizing video and eye toy technology.

We perceive video games featuring eye toy gaming as transformative instruments in the future education of all children due to its interactive nature which allows ideas and skills to meet each child where he is, and not to demand equal skill levels required for reading, writing, and arithmetic. Promoting and keeping young children with behavioral disabilities more “on track” with individualized but social experiences may be the best educational tool possible for them and the richest education possible for typical children. Thus the specific goals of this chapter are twofold: one, to present a strong case that video games can be successfully used to enhance the social learning of children with autism, and two, to demonstrate that these same techniques can be used to heighten the sensitivity and social skills of typically developing children when they interact with each other and with their atypical peers.

**BACKGROUND**

**Epidemiology of Autism**

*Autism* identified by Kanner in 1943, is a lifelong neuro-developmental disorder which begins in infancy and is characterized by impairments in everyday living skills, social skills, communication, and language, and by the presence of repetitive, obsessive behaviors, and rigid, and focused interests (Silton, 2009; Volkmar & Pauls, 2003). Deficits in everyday living and social skills and communication, language vary along a continuum from mild to severe, thus children receive diagnoses along the autism spectrum.
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