The Use of Computer-Assisted Instruction as an Instructional Tool to Teach Social Stories to Individuals Who Have Been Diagnosed on the Autism Spectrum

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Abstract
This article discusses the use of computer-assisted instruction (CAI) to teach Social Stories as a method of positively affecting the social understanding and behaviors of learners who have been diagnosed on the autism spectrum. As the diagnosis rate for those with ASD continues to rise along with the practice of including these learners in the general education environment, there is an increasing need to identify evidence-based practices that focus on the acquisition and remediation of social-communication skills, social skills, and social competence. A variety of strategies have been developed and implemented to remediate deficits in these areas. The use of CAI is an approach that has been proven to accommodate both the needs and the visual learning styles of these learners.

Keywords
autism, Social Stories, computer-assisted instruction, video modeling, teacher education, education, social sciences

Social Skills Interventions
Individuals who have been diagnosed on the autism spectrum typically have difficulty with social interactions because of deficits in the area of social skills and social competence. These skills are critical to the successful integration into inclusive environments such as school, the community, and at job placements. According to Wheeler, Mayton, and Carter (2015), there are five categories of intervention that have been shown to be effective and that qualify as evidence-based interventions. These categories include but are not limited to (a) social skills training groups, (b) VM, (c) social narratives, (d) self-management, and (e) naturalistic intervention (Wheeler et al., 2015). Taking into consideration that those diagnosed on the autism spectrum generally demonstrate the ability to process visual stimuli more efficiently than others, it is essential to consider their visual learning strengths when determining which intervention is most appropriate. VM accomplishes this effectively by presenting...
a video recording of a person or themselves carrying out the target behavior, or a visually cued model of instruction.

**VM as an Instructional Tool**

The use of VM and video self-modeling (VSM) as an instructional strategy to improve a learner’s communication, behavior, and academic performance in the classroom has demonstrated significant success (Cihak et al., 2012). According to Sansosti and Powell-Smith (2008), a child learns to memorize and imitate target behaviors when those behaviors are modeled on video and presented in a systematic and discrete manner. In addition, VM is appropriate for use in the school or home and has consistently demonstrated effectiveness for teaching skills to children with ASD and for use as an intervention approach. This success is attributed to the motivation that is created in the learning environment by computer-assisted instruction (CAI; Sansosti & Powell-Smith, 2008). Therefore, because most children with ASD are fascinated with computers and iPads, they are intrinsically motivated to learn. Although the research to support the effectiveness of CAI is limited, schools are increasingly using assistive technology in the classroom with children who have been diagnosed on the autism spectrum. According to King, Thomeczek, Voreis, and Scott (2014), “the advent of the Apple iPad in 2010, in particular, has contributed to this increase in use of CAI with children with ASD” (p. 2). They go on to say that the growth in technology is “outpacing research, education professionals are implementing use of iPads and apps without research-based guidance on how to do so effectively and efficiently” (p. 3).

The techniques of VM and VSM can readily be applied to the use of Social Stories to benefit the academic, behavioral, and social outcomes of students with ASD. A Social Story describes a situation, skill, or concept in terms of relevant social cues, perspectives, and common responses in a specifically defined style and format (Gray, 1994). Generally, the Social Story is presented to the student prior to the situation occurring to help rehearse the scenario. The goal is to share accurate social information in the format of an individualized short story intended to increase appropriate social interactions of children with ASD. Over the past several years, researchers have demonstrated the success of Social Stories when used to remediate a wide variety of problem behaviors (Scattone, Tingstrom, & Wilczynski, 2006). It is for these reasons that teachers are now integrating the use of VM of Social Stories on iPads into their classrooms in order to increase the success rate of those learners who are included into the general education classrooms. This process has led to the addition of the development of Social Stories using an iPad or similar device into the curriculum of pre-service teachers.

The skill of developing personalized video models is essential for pre-service teachers who are currently attending certification programs in either elementary or special education. Research has reported results that personalized video models are more effective than commercially distributed video models (Palechka & MacDonald, 2010) and that there is a “consistent degree of procedural fidelity and consistent levels of reinforcement” with the use of the iPad when implementing instruction in academics or student behavior (Neely, Rispoli, Camargo, Davis, & Boles, 2013, p. 515). Therefore, our challenge in higher education is to ensure that professors in pre-service teaching programs have available to them iPads to instruct their students how to develop and implement programs in the classroom that target appropriate social skills for individuals who have been diagnosed on the autism spectrum.

**Conclusion**

As the diagnosis rate for those with ASD continues to rise along with the practice of including these learners in the general education environment, there is an increasing need to identify evidence-based practices that focus on the acquisition and remediation of social-communication skills, social skills, and social competence. The use of technology is an approach that accommodates the needs and the visual learning styles of these learners. It has been reported that there are potential advantages when using iPads as an intervention delivery system rather than other types of assistive technology (Kagohara et al., 2013). Kagohara et al. (2013) found that iPads “are readily available, relatively inexpensive, and appear to be intuitive to operate” (p. 155). In addition, they are less stigmatizing when used as an instructional aid because they are a socially accepted device. The literature confirms that it is essential to evaluate our pre-service programs and determine within what courses we can include training in the use of assistive technology, more specifically using this technology to implement the strategy of Social Stories.

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**Author Biography**

*Nanette Edeiken-Cooperman* is currently an assistant professor in the Department of Special Education at Saint Joseph’s University in Philadelphia, PA. She received her doctorate in Educational Leadership from Saint Joseph’s University. Her research explored the effectiveness of transition plans for students with low-incidence disabilities and how those plans relate to their post-school life. Her current research involves the transition to post-school life for students who have been diagnosed with intellectual disabilities and/or have been diagnosed with Autism Spectrum Disorders as well as customized employment opportunities for these individuals.