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Introduction

Advances in School-Based Interventions for Students With Autism Spectrum Disorder: Introduction to the Special Issue

Cynthia M. Anderson¹, Tristram Smith², and Susan M. Wilczynski³

Abstract
As the diagnosis of autism spectrum disorder has increased, so too has research on interventions to address core and associated features of autism. Although many methodologically rigorous studies on interventions have been reported, their relevance to educators is somewhat unclear. For example, only about 32% of evidence-based strategies identified in these reviews were conducted in k-12 settings. Current literature also is limited in that, although many studies show that interventions can improve the communication and social interaction skills of individuals with autism, most of this work has been conducted with pre-school children; questions remain about the generality of these findings to school-aged children. Further, there are relatively few studies demonstrating effective interventions for restricted and repetitive behavior and much of this work was conducted in clinical settings. There is a need for studies documenting effective interventions that are feasible in school settings. The purpose of this special issue is two-fold. First, to highlight the need for school-based research with students with autism and

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second to highlight recent work delineating intervention strategies found to be effective in school settings.

**Keywords**

autism spectrum disorder, school, intervention, applied behavior analysis

Autism spectrum disorder (ASD) is characterized by deficits in social interaction and communication and by a restricted range of interests, behaviors, or activities. The presentation of ASD varies greatly across individuals. Some individuals appear only mildly affected whereas others exhibit behavioral deficits and excesses that significantly affect their ability to function. One child with ASD may communicate fluently but struggle to interpret subtle social cues such as eye gaze. Another student may be unable to use words to communicate wants and needs to others. Some children with ASD emit repetitive behaviors such as jumping up and down or stomping. Others might engage in ritualistic behaviors, such as tapping a doorway in a certain pattern each time they enter or leave a room. Although ASD once was considered rare, prevalence estimates have increased dramatically and the Centers for Disease Control and Prevention (CDC) estimates that approximately one in 68 children in the United States meets criteria for ASD today (Center for Disease Control and Prevention, 2016).

The increased diagnosis of ASD means that virtually all teachers will be asked to support a student with ASD in their classroom. Unfortunately, most teachers, in both special and general education, report feeling ill-prepared to address the myriad needs that a student with autism may present with (Kasari & Smith, 2013; Stahmer, 2007). There is thus a significant need for research documenting effective interventions for students with ASD.

Although many methodologically rigorous studies on interventions for children with ASD have been reported, their relevance to teachers is somewhat unclear. To illustrate, several recent reviews of the literature have examined the evidence base for existing interventions for ASD, focusing on either young children (Smith & Iadarola, 2015; Wong et al., 2015) or people from birth to age 22 (Wong et al., 2015) or older (National Autism Center, 2009). These reviews have identified as many as 27 intervention strategies that met their evidence criteria (Wong et al., 2015). However, in a follow-up analysis, Anderson, Martin, and Haynes (2017) found that only 32% of all studies that were included in the review by Wong and colleagues (2015) had been conducted in K-12 school settings; the rest took place in clinical settings or
homes. Hence, research is needed on interventions that are feasible and effective in K-12 public school settings, with the varying resources available in those settings. In addition, although many studies show that interventions can improve social communication and interaction (e.g., Taylor et al., 2012; Yoder & Lieberman, 2010), most of this work has been conducted with preschool-age children. As a result, relatively little is known about interventions for social communication and interaction in school-age children and youth. Finally, few studies are available on interventions for restricted or repetitive behaviors. Additional research is required to identify effective interventions for these behaviors, which are a core feature of ASD.

The articles in this special issue illustrate the breadth of research applicable to school settings. Three articles provide some of the first empirical support for school-based interventions to address restricted and repetitive behaviors. Koegel, Oliver, and Koegel (2018) worked with two boys with ASD who exhibited intense interests in specific activities (a television character and transportation vehicles and signage). They demonstrated that including these intense interests increased peer social interaction during activities that had a positive history for the participants but did not have this effect during activities with a more negative history.

Edwards, Landa, Frampton, and Schillingsburg (2018) targeted leisure skills exhibited by three children with ASD. For all children, they targeted multistep leisure activities such as assembling toy train tracks and then moving a train along the track. Using backward chaining procedures combined with differential reinforcement and blocking the occurrence of stereotypy, the authors increased functional leisure skills of all participants and two of the three demonstrated reductions in stereotypical behavior.

Giles, Swain, Quinn, and Weifenbach (2018) trained novice teaching assistants in classrooms to implement an intervention that was developed in specialized treatment centers, response interruption and redirection. They found that all three teaching assistants learned to carry out the intervention with high fidelity and that this led to reductions in repetitive behavior for two of the three students with ASD in the study.

As highlighted in the Giles et al.’s (2018) study, one of the greatest limitations of existing ASD treatment research is the limited application of intervention methods by individuals who do not specialize in ASD intervention and who apply the treatment under real-world conditions. The translation of research to practice cannot be assumed because achieving a high degree of fidelity under less controlled and predictable conditions when interventionists are often required to fulfill multiple professional responsibilities (instead of merely adhering to a treatment protocol) is challenging. Kodak et al. (2018) expand our understanding of barriers to translating research into practice by
surveying 64 special education teachers about their perceptions of teaching strategies and then observing the teachers to see how consistently they used the strategies they considered most effective. Although teachers generally rated empirically supported strategies as the most effective, they did not consistently use these strategies with their students with ASD.

Iadarola et al. (2018) not only extend our knowledge of school-based applications, but they have demonstrated the utility of implementing a manualized intervention in underresourced schools. Manualized treatments are highly useful because they fully describe the intervention activities and the sequence in which treatments should be implemented. Manualization likely contributed to teachers’ ability to increase their level of treatment fidelity over time. Some dependent measures (e.g., teacher report regarding student challenging behavior) showed improvement in student outcomes as well. Although additional research is necessary to replicate their findings and to demonstrate the capacity of the Schedules, Tools, and Activities for Transitions (STAT) program to sustain improvements over time, this article significantly improves our understanding that school-based behavior interventions can be accurately implemented by teachers and yield improvements for students.

Intervention effectiveness in real-world settings is not only dependent on situational features than can enhance or undermine treatment fidelity. Instead, the extent to which a treatment is likely to produce favorable outcomes may also be dependent on characteristics of the student. Stichter, Hierzo, Kilgus, & Schemann (2017) examined whether or not IQ serves as a moderator for treatment outcomes when the Social Competence Intervention for Adolescents is implemented. Cognitive abilities have served as a moderator for treatment outcomes in other studies and, generally, higher IQ is associated with better intervention results. Stichter et al. (2017) remind us that high IQs may not be associated with better treatment outcomes for all dependent measures, however. This article not only describes a social competence intervention for school-age students but also provides new insights about the role of cognitive abilities as a moderator for social competence treatment outcomes for this population.

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Note

1. Criteria in the Wong et al. (2015) review were based on published definitions of evidence-based. Interventions were designated as evidence-based when (a) they had documented efficacy as demonstrated by at least two peer-reviewed publications with studies that were experimental or quasi-experimental in nature and that had been conducted by two different research groups, (b) they were supported by at least five peer-reviewed publications documenting high-quality single-subject design studies conducted by at least three distinct research groups with at least 20 participants across those studies, or (c) studies supporting the intervention included at least one high-quality experimental/quasi-experimental design and three high-quality single-case designs conducted by more than one research group. “High quality” was defined based on published definitions for each type of experiment (see Wong et al., 2015, for definitions).

References


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