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Research Paper

Social skills plus relaxation training with a child with ASD in the schools

Margaret T. Floress[a,*], Kim Zoder-Martell[b], Rachel Schaub[c]

[a] Eastern Illinois University, 600 Lincoln Avenue, Charleston, IL 61920, USA
[b] Ball State University
[c] Eastern Illinois University

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ABSTRACT

A social skills plus relaxation training (SSRT) program was developed using direct training, relaxation training, and reinforcement principles. The aim was to examine the effectiveness of SSRT on increasing the frequency of three target behaviors for one 8-year-old, student classified with autism spectrum disorder (ASD). A multiple-baseline across behaviors design was used to evaluate the effects of SSRT. During baseline, intervention, and maintenance sessions the student's responses were videotaped and then subsequently viewed and coded after the session. During intervention, the student's correct responses for the targeted social skills increased and were maintained 17 weeks after SSRT ended. This study adds support for the use of this SSRT program in a school setting with children who have ASD.

1. Introduction

Autism Spectrum Disorder (ASD) is a disorder characterized by deficits in communication and social skills, and the presence of repetitive behaviors or restricted interests (American Psychiatric Association, 2013). Children with ASD often demonstrate social skill deficits early in life and as they mature social interactions become more challenging. Even children identified as "high functioning" due to fewer cognitive and language impairments, face social difficulties (Allen, Wallace, Renes, Bowen, & Burke, 2010; DeRosier, Swick, Davis, McMillen, & Matthews, 2011).

Common social skills deficits often present in students with ASD include difficulties interpreting others' emotions and poor social pragmatic skills (Bellini, Peters, Benner, & Hopf, 2007; Brooks & Ploog, 2013; Williams-White, Keonig, & Scahill, 2007). For example, a child with ASD may have difficulty interpreting both overt emotions (e.g., someone is in physical pain) and subtle emotions (e.g., someone is sad or frustrated). Additionally, students with ASD often have difficulty greeting others, giving compliments, and listening to others (Bauminger, 2002; DeQuinzio et al., 2007; Kamps et al., 1992; Leaf et al., 2012). For example, a child with ASD may have difficulty listening to others as demonstrated by not orienting their eyes and body toward the speaker. Not listening to others may also be demonstrated by not reciprocating physical mannerisms that communicate paying attention, such as head nodding or vocal agreements (e.g., yes, I see). A child who has difficulty giving compliments may not notice social cues from others that bid for acknowledgment of accomplishments (e.g., drawing a picture), or praise or admire someone else (e.g., I like your shoes) because they have difficulty taking someone else' perspective. These deficits can have detrimental effects for the student including withdrawal and social isolation; peer rejection; an inability to participate in group activities; and difficulties developing lasting friendships (Banda, Hart, & Liu-Gitz, 2010; Bellini et al., 2007). In addition to these deficits of ASD, individuals with ASD often present with anxiety,

* Corresponding author.
E-mail addresses: mfloress@eiu.edu (M.T. Floress), kamartell@bsu.edu (K. Zoder-Martell), schaubr@charleston.k12.il.us (R. Schaub).

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which can interfere with daily living (Reaven, Blakeley-Smith, Culhane-Shelburne, & Hepburn, 2012; Rotherham-Fuller & MacMullen, 2011; Wood et al., 2009).

School-based interventions for students with ASD should target the core symptoms and common deficits including communication, social skills deficits (Wilezynski, Menousek, Hunter, & Mudgal, 2007), and other underlying symptoms related to tension (White et al., 2013). To address social skills deficits, students with ASD may respond well to social skills training (SST). SST may include Social Stories, social skills groups, video modeling, computer-based interventions, behavioral skills training, and peer-mediated interventions (Caballero & Connell, 2010; Reichow & Volkmar, 2010; Walton & Ingersoll, 2013). The school setting is an ideal venue for implementing SST, because many children with ASD will receive intervention services at school (Brookman-Frazee et al., 2009). There are several purported benefits to school-based intervention services including early intervention, the ability to use peer-mediated interventions and social skills groups, and multiple opportunities for students to practice newly learned skills in a naturalistic environment (Bass & Mulick, 2007; Dekker, Nauta, Mulder, Timmerman, & de Bildt, 2014; Reichow & Volkmar, 2010; Williams-White et al., 2007).

Although intervention at school is ideal, school personnel often lack training to select and implement effective interventions to address the complex needs of students with ASD and may benefit from highly structured manualized interventions. Unfortunately, few studies demonstrate the effective implementation of SST within the school setting (Kasari & Smith, 2013), and many of the available studies rely on pre-and-posttest teacher evaluations of student behavior instead of direct observation of behavior. Since children with ASD are likely to exhibit deficits at school and will receive intervention services at school, it is important to develop effective and feasible SST programs that can be implemented in a school setting.

1.1. Social skills training and deep breathing

Quality research focusing on interventions for children with ASD is limited due to methodological concerns and that most SST studies are carried out in clinics or laboratories. Implementing intervention outside of school is often in vain when the goal is to change the child's behavior within the school setting (DeRosier et al., 2011; Kasari & Smith, 2013; Rao, Beidel, & Murray, 2008). The teaching interaction procedure (direct training) is an empirically-supported SST model that includes (a) teaching the skill, (b) explaining its importance and the steps to use the skill, (c) modeling, (d) practicing, and (e) rewarding correct responses (Leaf et al., 2012). This procedure is similar to behavioral skills training (BST) where instructions, modeling, rehearsal, and feedback are used (Miltenberger et al., 2004). Phillips, Phillips, Fixsen, and Wolf (1971) and Phillips, Phillips, Fixsen, and Wolf (1974) first introduced the teaching interaction procedure as part of the Achievement Place Teaching-Family Model and the effectiveness of this procedure has been demonstrated in both individual (e.g., Leaf et al., 2009) and group (e.g., Leaf, Dotson, Oppenheim, Sheldon, & Sherman, 2010) settings. Both BST and the teaching interaction procedure use direct training. Evidence suggests that direct training is more effective than interventions that employ indirect training (e.g., Social Stories). Leaf et al. (2012) found that children who received direct training (i.e., teacher broke the skills down into smaller components, modeled the skill, had children role-play using the skills, and praised children for using the skill correctly) successfully learned 18 skills taught, whereas children who were read a Social Story for 45 min, three to six times a week only learned four of the 18 skills.

Because various studies suggest that children with ASD may experience tension and anxiety symptoms (Reaven et al., 2012; Rotherham-Fuller & MacMullen, 2011; Wood et al., 2009), incorporating a relaxation component (such as deep breathing) within a SST program may help teach children with ASD how to appropriately calm. Deep breathing is an empirically-supported relaxation technique (Silverman, Pina, & Viswesvaran, 2008). Children with ASD are likely to benefit from deep breathing not only because learning to relax is an important adaptive skill, but children with ASD may become increasingly aware of their social deficits, and learning to relax may combat symptoms of tension, anxiety or depression (DeRosier et al., 2011). Wood et al. (2009) demonstrated that children with ASD, aged 7–11 and with verbal IQ scores of 70 or higher, effectively decreased their anxiety symptoms after participating in CBT. Despite the positive findings of Wood et al., CBT is often time and resource intensive and may not be realistic in the school setting. Adding a relaxation strategy (i.e., deep breathing) into existing SST programs may be beneficial for students with ASD. Further research is needed to investigate SST with a relaxation component that is delivered within the school setting.

1.2. Methodological limitations

SST for children with ASD as well as other groups at-risk for social skills deficits has been shown effective (Bellini et al., 2007; Lösel & Beelmann, 2003; McKenna, Flower, & Adamson, 2016). However, the existing literature presents some methodological limitations, which should be addressed. First, many of the existing studies neglected to include direct observation of student behavior following SST. Instead, researchers often rely on behavior rating scales as an outcome measure (Goforth, Rennie, Hammond, & Schoffer Closson, 2016; McKenna et al., 2016). In a review of the literature examining social skills development in children with ASD, Williams-White et al. (2007) found that only 4 of the 14 studies included in the review used direct observation measures. SST interventions are often implemented in group settings, and collecting in-depth data on all participants can be difficult (Goforth et al., 2016); however, direct observation of student behavior is an important consideration.

In addition to the lack of direct observation data, studies examining the effectiveness of various social skills interventions often do not include adequate maintenance and follow-up data (Bellini et al., 2007; Gresham, Sugai, & Horner, 2001; Lösel & Beelmann, 2003; McKenna et al., 2016). Finally, some researchers have found that the existing SST literature lacks adequate treatment fidelity data