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Building Capacity to Support Students with Autism Spectrum Disorder: A Modular Approach to Intervention

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Abstract

There is a large gap between research-based interventions for supporting children with autism spectrum disorder (ASD) and current practices implemented by educators to meet the needs of these children in typical school settings. Myriad reasons for this gap exist including the external validity of existing research, the complexity of ASD, and constraints on service delivery systems. Thus, a systematic approach is needed to adapt research-based interventions for use in typical school settings. One way to address these challenges is a modular intervention framework. In this article, we describe how a modular intervention framework could be implemented in schools. A case study is used to illustrate implementation of the framework.

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The estimated prevalence of autism spectrum disorder (ASD) continues to increase (Autism and Developmental Disabilities Monitoring Network, 2014). Rates of school-aged children (age 6 to 21) receiving an educational classification of ASD have risen in tandem with these prevalence figures, multiplying more than ten-fold from 1995 to 2014 and continuing to grow rapidly (Data Accountability Center [DAC], n.d.). As a result, it is certain that nearly all teachers, including general and special educators, will find students with ASD in their classrooms.

Fortunately, many interventions are available to address difficulties associated with ASD. A recent review of the literature identified 27 evidence-based strategies (Wong et al., 2015). However, a large gap exists between what is considered best practice and what actually occurs in schools (Kasari & Smith, 2013). For example, school psychologists demonstrate some familiarity with diagnostic characteristics of ASD but little knowledge of, or experience with evidence-based interventions (Wilkinson, 2013). In a state-wide survey of 185 teachers in Georgia currently working with at least one student with ASD, fewer than 5% reported using an evidence-based intervention in their work (Hess, Morrier, Heflin, & Ivey, 2008). Other studies indicate that although most teachers endeavor to adopt interventions supported by research (Stahmer & Aarons, 2009; Stahmer, Collings, & Palinkas, 2005), they tend to deploy such interventions inconsistently, with poor fidelity, and alongside untested intervention approaches (Burns & Ysseldyke, 2009; Hendricks, 2011; Stahmer, 2007). Even with individualized, direct training and ongoing consultation, teachers' adherence to recommended intervention procedures is uneven (Mandell et al., 2013). Further, after consultation ends, their use of these procedures often becomes even more sporadic (Zandi et al., 2011).

To help educators identify and implement evidence-based strategies, Iovannone, Dunlap, Huber, and Kincaid (2003) synthesized findings from research into a set of general "best practices" such as systematic instruction related to core and associated features of ASD and use of function-based intervention for behavior problems. The National Autism Center (NAC, 2009, 2015) extended this work by conducting a more comprehensive review than did Iovannone et al. (2003); this review pinpointed more specific evidence-based instructional strategies such as the use of visual schedules and self-management techniques. Most recently, the National Professional Development Center (NPDC; Wong et al., 2015) updated the literature review and identified additional evidence-based strategies. They also created step-by-step guides for setting up and implementing each practice,

along with written materials and video tutorials (NPDC, 2017). Although these resources may increase utilization of evidence-based strategies over time, an important limitation is that they provide little guidance on how to use the strategies in practice (e.g., how to match instructional strategies to the needs of a particular student in the context of a school, how to monitor progress and trouble-shoot as needed; McGrew, Ruble, & Smith, 2016). Thus, it remains uncertain how successful these efforts will be in increasing the implementation of evidence-based strategies (Kasari & Smith, 2013).

The infrequent use of evidence-based strategies that could improve outcomes for students with ASD is worrisome and may at least partially explain why students with ASD receive large amounts of special education services (Brookman-Frazee et al., 2009) yet often continue to require extensive supports as adults (Howlin, Goode, Hutton, & Rutter, 2004). Efforts to bridge the gap between research and practice require an understanding of and appreciation for the formidable barriers that hamper deployment of available evidence-based practices. These barriers involve the external validity of existing research given the constraints on service delivery in educational settings (Kasari & Smith, 2013) and features of ASD itself (Frith & Happé, 1995). In this article, we describe these barriers and then propose an alternative to how evidence-based practices are traditionally introduced into schools. We illustrate the re-design with a case example. Although we do not yet have a published product with data on efficacy, we believe our "work in progress" is of interest, given the urgent need for educators to identify practical, effective ways to serve these students.

Barriers

External validity

The vast majority of studies on evidence-based strategies for students with ASD have been conducted in specialized centers or analog settings such as experimenter-run classrooms, summer camps, or private schools (Kasari & Smith, 2013) that differ from typical school settings in important ways. For example, the resources in specialized settings far surpass what is available in most schools; implementers usually have received extensive training in the intervention and are closely supervised, interventions are often delivered in a one-to-one format, etc. (Stahmer, Suhrheinrich, Reed, & Schreibman, 2012; Strain & Bovey, 2011). Second, interventions delivered by study teams tend

to be time-limited, and not something that can be easily integrated into general practice. Further, interventions target problems such as difficulty with basic discrimination learning that are more prevalent in research samples than in children with ASD in schools (Reed, Stahmer, Suhrheinrich, & Schreibman, 2013). Others are intended to be delivered during unstructured times during the day, but school personnel may give higher priority to allowing the child to take a break during such times (Kasari & Smith, 2013) or may be unavailable because they are required to work with other students or complete other activities.

The realities of most educational settings also need to be considered. Notably, most schools have fiscal constraints that impinge on their capacity to initiate and sustain implementation of evidence-based interventions. Resources available for staffing, training, and delivery of interventions often are limited as is the time to do so. Further, educational staff may not have experience making the complex decisions needed to design an evidence-based, comprehensive, yet individualized program for students with ASD. As a result, all students with ASD within a school may receive a similar intervention irrespective of need or a non-evidence-based intervention chosen simply because it "sounded good" or was recommended by another person. Many schools also simply do not have access to high quality training in evidence-based interventions, choosing instead either no training or workshop-based training. Unfortunately, training delivered via workshops or in-services ("train and hope") generally results in no change in the behavior of those attending the training or in student outcomes (Blank, de las Alas, & Smith, 2008; Farmer & Chapman, 2008; Herschell, Kolko, Baumann, & Davis, 2010). High quality implementation requires attention to systemic features including buy-in from stakeholders, administrative support and involvement, access to ongoing coaching, team-based problem-solving, and data-based decision-making.

Features of ASD

The multi-faceted nature of ASD itself presents challenges to intervention development and implementation. Along with the defining features of ASD (deficits in social communication and excessive repetitive, restricted behavior), children with ASD have other challenges that often interfere with their functioning at school. As shown in numerous studies, these styles include challenges in "theory of mind," which relates to understanding the perspectives of others (Baron-Cohen, 2005); difficulties in planning and organization, often called executive functioning (Ozonoff & Jensen, 1999); and weak central co-

herence, which means difficulty seeing the "big picture" or discerning the overall meaning of an event (Happé & Frith, 2006). Such deficits can contribute to an assortment of problems at school, including neglect by peers, difficulty following the daily routine, low academic achievement, and disruptive behavior. Addressing these problems is likely to require an array of intervention approaches. Furthermore, students with ASD are a heterogeneous group presenting with diverse skillsets and needs such that no single intervention or set of intervention goals will be appropriate for all or even most students. Some mildly affected children with ASD do not qualify for an individualized education plan (IEP) according to the Individuals with Disabilities Education Act (2004) because they demonstrate adequate or even superior academic progress. These students may still require some assistance to succeed, such as help with organizational skills, social interaction, or simply navigating the culture of their school. Severely affected children with ASD often need highly specialized and individualized instruction, usually delivered in self-contained classrooms, to make academic and other gains.

Children with ASD often show inconsistencies across and within domains of development. This pattern, which has been described as "fine cuts along a hidden seam" (Frith & Happé, 1995, p. 116), makes it difficult to pinpoint where to intervene. For example, research on peer interactions often focuses on increasing the rate of initiations with peers using a verbal script (Zhang & Wheeler, 2011). However, children with ASD can be quite good at showing "active sociability" (initiating and responding to social bids) but quite poor at "interactive sociability" (sustaining a back and forth interaction; Frith & Happé, 1995, p. 118). Most research on reading focuses on sight-reading (Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006), but children with ASD tend to be good at this skill even without specialized instruction, and it is only one of many skills required for literacy. Related to their difficulties with social communication and interaction, children with ASD are far more likely to have difficulty with reading comprehension and expository writing (Brown & Klein, 2011). Given the complexity and subtlety of ASD, providers need not only a set of evidence-based strategies to be effective, but also tools for identifying priorities and intervening accordingly.

Proposed Solution

Given the complexity of ASD and the limited external validity of intervention research, it is unsurprising that, despite the availabil-

ity of evidence-based strategies for intervening effectively for children with ASD, a successful system for transferring these strategies to typical school settings is missing. To address this gap, there are two seemingly contradictory requirements: (1) a comprehensive intervention and (2) a service-delivery system that is feasible, flexible, durable, and effective. In the remainder of this article, we propose a re-design that includes two key features: (1) a systems-focused framework to guide intervention implementation and (2) the use of modules to match specific intervention components and student need. A systems-focused framework emphasizes the development of effective and durable strategies for building and maintaining capacity to meet the needs of all students. A component-focused, modular approach (Weisz & Chorpita, 2012) enables educators to choose evidence-based components that match the need of a given child, rather than attempting to master a broad, multi-intervention strategy approach (Kasari & Smith, 2013). Each module comprises a small, targeted set of strategies aimed at a particular problem, with decision rules or assessment procedures for selecting which modules to implement and under what circumstances. In this approach, the systems-focused framework emphasizes shared decision-making among a team of school providers supported by an expert "coach," while the modular approach is designed to focus intervention on core and associated features of ASD that are identified as a priority by the school team. This thus allows for going beyond *evidence-based strategies* (i.e., techniques such as reinforcement systems and visual schedules that have been shown to change behavior) to *evidence-based practice*, which is the process of selecting and implementing intervention strategies with a particular student. Evidence-based practice incorporates (a) intervention strategies supported by the best available evidence, (b) professional input, (c) the specific needs of students, and (d) information about available resources and the implementation context.

Systems-Focused Framework

Outside the ASD literature, successful initiatives to build and sustain school capacity include School-Wide Positive Behavior Intervention and Support (Horner, Sugai, & Anderson, 2010; McIntosh, Filter, Bennett, Ryan, & Sugai, 2010), Intensive Positive Behavior Support (Anderson & Borgmeier, 2010; Anderson, Tuturo, & Parry, 2013), Response to Intervention (Burns & Gibbons, 2012; Greenwood & Kim, 2012.), and Prevent-Teach-Reinforce (Iovannone, et al., 2009). These initiatives, as well as other literature on scaling and sustainability (e.g., Fixsen, Blase, Duda, Naoom, & Van Dyke, 2010; Payne, 2009), highlight two key strategies for increasing school capacity: (1) fostering collab-

orative teams among school personnel and (2) establishing an alliance between an expert "coach" and educators.

Collaborative teams. Our model includes two types of teams, a school-level team and a student-focused team. The school-level[1] team is charged with guiding overall implementation of the model across the school and overseeing implementation for specific students with ASD at the school who have been identified as needing individualized supports. The composition of the school-level team should represent the entire school, thus including one or more members from general education, special education, administration, and specialist areas (e.g., school psychology, occupational therapy). The team also may include one or more parent members and, if the team desires, a student. Because the team is focused on supporting all students with ASD, it is important that everyone on the team be familiar with core features of ASD and with how interventions for ASD have been determined to be evidence-based (see recent reviews of the literature by Wong et al., 2015 and the National Autism Center, 2015). Our intervention includes a module that describes defining features of ASD (deficits in social communication and interaction; restricted, repetitive behaviors) and associated features that are present in many but not all students with this classification (cognitive and adaptive difficulties, behavior problems). This module also ensures members understand the importance of selecting and implementing only those interventions that are supported by the literature.

Once the school-level team is formed they have several responsibilities including (a) ensuring that others in the school working with students with ASD are familiar with autism and with evidence-based approaches, (b) identifying students who meet eligibility criteria for ASD-related services, (c) monitoring progress across the school, and (d) ensuring that students with ASD who are not making adequate process via universal supports provided for all students in the school (e.g., behavior supports used to structure entire classrooms, core curriculum) receive additional support via a student-focused team (when teams include parents or students, special care must be taken to protect the confidentiality of all students with ASD).

When a student with ASD demonstrates the need for more support, the school-level team forms a student-focused team around that individual. The student-focused team consists of at least one member of the school-wide team, who serves as coach and guides the student

1. An in-depth description of the functioning of the school-level team is beyond the scope of this paper, but see Anderson, Martin, & Haynes (in press).

team through design and implementation of the student's supports. Other members include teachers and any specialists involved in the day-to-day support of that student. Parents are encouraged to participate and can play a key role on the team. In our model, there are numerous ways for parents to participate depending on their interest in being involved and schedules. For example, some parents may attend all team meetings and play an active role in decision-making. Others may participate via telephone while still others may prefer to receive updates periodically but not play an active role.

Coaching. Prior work on building school capacity indicates that effective coaching includes collaborative goal development and planning to ensure that interventions fit the context of the school (McIntosh et al., 2010). For students with ASD, intervention fit includes variables such as whether target skills are viewed as important and relevant by stakeholders, and whether strategies are feasible and acceptable to school personnel. In addition, effective coaching incorporates behavioral skills training (didactic instruction, modeling, role-play, and guided practice with performance feedback; e.g., Bethune & Wood, 2013). Our intervention uses practice-based coaching (Conroy, Sutherland, Vo, Carr, & Goston, 2014) to build capacity within a school to implement interventions. Practice-based coaching is a collaborative coaching model that is cyclical rather than finite and includes collaborative goal development and planning, observations, and structured reflection (on the part of the implementer) and feedback from the coach. A review of the literature conducted by the National Center on Quality Teaching and Learning showed that this model of coaching is well documented and effective for enhancing teacher implementation of evidence-based interventions and improving teacher knowledge, skills, and attitudes (Conroy et al., 2014; Snyder, Hemmeter, & Fox, 2015; Sutherland, Conroy, Vo, & Ladwig, 2015). Coaches in our model must have expertise in implementation of evidence-based interventions for students with ASD. There is no single qualification that will guarantee this expertise, so an active interviewing process, for example including role-plays and reviewing the candidate's written work, will be important. As a starting point, individuals holding board certification as a behavior analyst (BCBA®) with experience working in schools may be qualified for this role. Individuals meeting this certification hold at least a master's degree and took coursework relevant to implementation of evidence-based practice, completed a defined amount of supervised practical experience, and passed an examination assessing content knowledge in behavior analysis. Ideally coaches will be district-level or school-level employees, however some schools may contract with outside providers.

The coaching process in our model begins with reviewing the model with stakeholders and securing buy-in, determining the level of participation desired by each stakeholder and then moving on to selection of intervention modules for a student; progresses to development of a strategy for a given student; and then moves to implementation and on-going observation and feedback.

Selection of intervention modules. The student team comes together to select strategies to implement. This process is guided by the coach who uses a solution-focused assessment to identify primary intervention targets. This process begins with identification of goals for the student; goals are then used to select one or more intervention modules for implementation. In our model, this is accomplished using a set of "Guiding Questions," the answers to which are linked to one or more modules. An illustration is provided in Appendix A for social communication and interaction, a core deficit in ASD. The coach guides the team through questions, beginning with the questions in bold and continuing to follow-up questions as indicated. For example, if the team responds to the first question, "Is social communication or interaction rare or limited" affirmatively, then the coach would proceed to ask follow-up questions beginning with "Can this student independently request wants and needs?" The coach would continue through questions in this subset until the team responded "no." For example, if the team indicated that the student's requesting skills did not require additional support but that the student did *not* enjoy playing with age appropriate toys in an age-appropriate manner, then the "Play Skills" module might be appropriate.

Table 1 provides a complete list of modules that we have developed. Modules are organized around the core and associated deficit areas of ASD. For example, in the area of social communication and interaction, there are three sub-groups of modules. There are four modules addressing deficits in the area of engaging in social interactions, an additional three modules focused on sustaining interactions, and three modules relevant to developing friendships. Each module incorporates evidence-based strategies identified in systematic reviews of the literature on interventions for ASD (National Autism Center, 2009; Wong et al., 2015).

If multiple intervention modules are selected, the team uses an action planning process to prioritize modules for implementation and identifies a timeline for implementation (a process described in more detail in the case example). Once modules are selected, the coach will conduct additional assessments as needed (e.g., an observation of the student's interactions with peers, a preference assessment, and/or a functional behavior assessment of disruptive behavior).

Table 1
Intervention Modules

Social Communication and Interaction	
Engaging in social interactions	
Functional Communication	Peer Partner
Augmentative and Alternative Communication	Play Skills
Sustaining social interactions	
Group Activities	Conversation
Dramatic Play	
Developing friendships	
Peer Networks	Recognizing Social Cues
Non-verbal Communication	
Restricted or Repetitive Behavior	
Difficulty handling unexpected changes	
Schedules	Planning for the Unplanned
Repetitive behaviors	
Automatically Reinforced Self-injury	Non-dangerous Stereotypy
Vocal Stereotypy	Sensory Differences (Also in Rituals)
Rituals	
Increasing Variability	Varying from Rituals
Engagement in Alternative Activities	Sensory Differences
Cognitive Academic Difficulties	
Struggles with transitions	
Schedules	Visual Cues
Requires assistance to engage or complete academic activities	
Reinforcement	Visual Cues
Environmental Modifications	
Struggles to learn new skills	
Peer Tutoring	Graphic Organizer
Response Cards	Learning Strategies
Directed Note Taking	Differentiated Instruction
Choral Responding	
Problem Behavior	
Classroom Supports	Functional Analysis
Functional Behavioral Assessment	Behavior Support Plan

Implementation of an intervention module. When a team is ready to implement an intervention module, the coach meets with everyone who will be implementing the intervention. This could be just one person, such as a teacher or an instructional assistant, or, for students who spend time in multiple rooms, it could be several individuals. The coach guides those who will be implementing the intervention to operationalize goals and to individualize the intervention component for the student. This includes the following steps: (a) describing the core features of the strategy, (b) determining how and when the strategy will be implemented, (c) identifying who will implement the strategy, (d) identifying any needed resources and who is responsible for gathering them, (e) setting a date for training and determining how training will occur, (f) developing a system for monitoring intervention effects and fidelity of implementation, (g) setting a date to begin baseline data collection, and (h) setting a date to begin implementation.

Training in intervention components provided by the coach occurs both at the start of implementation and throughout using behavioral skills training (via didactic instruction, opportunities to practice, and feedback), coach-conducted observation of implementation, and reflection and feedback. This process is cyclical such that intervention modifications can be made and continued observation and feedback occurs. Because research on behavioral skills training (Horn et al., 2008) suggests that training to criterion is important, we have coaches conduct role-plays with teachers and other implementers until the implementer is able to independently conduct all aspects of the intervention with greater than 90% accuracy across three consecutive trials. Once implementation begins, the coach conducts at least weekly visits to observe implementation, collect data on fidelity of implementation, and to provide feedback. In addition, teachers and other school personnel who implement strategies self-assess their implementation on a weekly basis. Because each intervention will be individualized for a student (e.g., latency until reinforcer delivery), teacher-completed self-assessments and coach fidelity rating forms are developed individually for each student but our model includes templates for developing these forms.

A Case Study

To illustrate how school teams would use a modular approach to prioritize, select, and implement strategies with a targeted student, we present a case example using a fictional student and school team.

Chris is a 9-year-old student in the fourth grade who meets educational and medical criteria for ASD and co-occurring intellectual disability. He is receiving IEP services for all of his academics and is included with his general education peers in art, music, and physical education. Chris is verbal but often exhibits delayed echolalia. For example, Chris will recite scripts from Star Wars movies, in which he has an intense interest. Socially, Chris is aware of and interested in other children but does not appropriately initiate or join in activities. His restricted and repetitive behaviors include difficulty with changes in routine and transitions, especially from preferred to non-preferred activities. He occasionally flaps his hands. He exhibits several problem behaviors including tantrums and shouting "no" when asked to complete tasks.

Chris's instructional support team (IST) includes his special education teacher, two para-educators, his parents, the principal and the coach, who is a building-based behavior analyst. In their first meeting, the coach helped the team reach consensus on the areas of focus for intervention. The coach asked each member to write down one to three concerns that were most pressing. A round robin technique was used to solicit concerns from each team member followed by a discussion to differentiate and define the concerns. Concerns generated included limited peer interactions, difficulties following schedules, resistance to transitions, and tantrums with noncompliance.

The next step in the process is selecting relevant modules. The coach walked the team through guiding questions associated with the relevant core deficit areas or associated features—in this case, Social Communication and Interaction; Restricted or Repetitive Behaviors, Interests, or Activities; and Problem Behavior (the Guiding Questions: Social Communication and Interaction are in the Appendix). In Social Communication and Interactions, The IST agreed that Chris could communicate his wants and needs fluently but noted that he did not initiate social interaction with peers very often, nor did he respond to overtures from peers. Thus, the IST selected the Peer Partner module. They noted that other modules in this area might be appropriate once Chris began interacting more frequently with peers but decided to hold off on further module selection until then. To address Chris's difficulties with transitions and changes in routine the coach asked guiding questions from the Restricted or Repetitive Behaviors, Interests, or Activities area. They noted that Chris did not follow any regular schedule and thought that could help, so the Schedules module was selected. They also selected the Planning for the Unplanned module to help Chris learn to tolerate unexpected changes in routines. Chris's teacher and parents both described problem behaviors includ-

ing tantrums and noncompliance and so the coach asked questions from the Problem Behavior area. The teacher indicated that she had not attempted classroom modifications because she wasn't sure what to do and so the team decided to start with Classroom Supports and move to the Functional Behavior Assessment modules if needed.

Once modules were identified the coach helped the team develop an action plan indicating a timeline for addressing all areas of concern (see Figure 1). In the action plan the team listed each module, ranked them by priority, and set a target date for implementation. The team was torn between starting Peer Partner or Classroom Supports first and decided to begin with Peer Partner as this was a top priority for the parents. The teacher and para-educators agreed that the para-educators would take the lead in this module and so the team agreed to begin Classroom Supports a short time after.

Student Name: *Chris*

Date Created: *October 3, 2015*

Team Members: *Lily Jones (teacher), Brandi Thompson (principal), Juan Fandino (para-educator), Shane Jenkins (para-educator), Jennifer Best (parent), Quinn O'Connor (parent)*

Module Selected	Goal for Student	Priority (ranking)	Target Date to Begin Module
Peer Partner	*Initiate and respond to interactions with peers.*	*1*	*October 11*
Schedules	*Independently follow a schedule throughout the school day.*	*3*	*January 14*
Planning for the unplanned	*Continue to engage in activities at school even when the typical schedule is changed*	*4*	*March 3*
Classroom Supports	*Reduce tantrums and increase compliance and engagement in academic tasks*	*2*	*October 20*

Figure 1. Example of a SAAGE Action Plan that might be completed by an Individual Student Team. This sample table corresponds with the case study described in this paper.

Peer Partner Teacher Implementation Guide—Chris

1. The goals for the peer partner network are:

   - *Share materials, contribute ideas, and respond appropriately to peer contributions during small group work activities across 5 out of 6 consecutive opportunities to do so*
   - *Respond positively to a social interaction initiated by a peer with an appropriate verbal or nonverbal response across 5 out of 6 consecutive opportunities to do so*
   - *Initiate a social interaction with a peer and respond to that peer's interaction appropriately during recess across 6 out of 10 consecutive recess times*

2. The types (i.e. initiator, communication partner) of peer roles as partners are:

   - *Initiator*
   - *Partner*

3. The plan to recruit and train peers as partners, including the schedule and environmental arrangement is:

   - *The team facilitator will talk to the principal to get approval.*
   - *The teacher will identify three boys in Chris's class who know and get along with Chris and have an interest in Star Wars and two back-ups in the event that any of the first boys state that they are not interested or if any parent of the first three boys do not give consent.*
   - *The teacher will talk with the three boys to find out if they would be interested in being a peer partner.*
   - *Parent information/permission slips will be sent home with the boys who indicated they would like to be a peer partner.*
   - *After permission slips are received with parental consent, two fifteen-minute training sessions will be scheduled during recess. Training one will only include the peer partners while training two will include Chris.*
   - *The training will take place where Chris normally is during recess.*
   - *Training one will provide the rationale, practice the scripts and steps, and role-play.*
   - *Training two will include the teacher modeling the script and steps with Chris first. After the modeling, each peer partner will practice with Chris and receive prompting/verbal feedback from the teacher.*

4. The plan for implementing peer networks with the student, including the schedule, environmental arrangement, and other supports (e.g., visual cues, reinforcers) is:

   - *Implementation will occur each day during recess. Each day, one of the three peers will be assigned as a peer partner, and the schedule will rotate.*
   - *Scripts will be visual and placed on laminated index cards that can be carried and read from by the peers.*
   - *Star Wars objects/toys will be gathered for use during recess.*
   - *Initially, the teacher will be in close proximity to prompt peer partners and provide positive feedback. As the peers become more fluent and less reliant on prompts, the teacher will move further away from the peers.*
   - *Debriefing meetings with the three peers will be scheduled once a week. The teacher will review how things are going, generate suggestions for next steps, and provide positive feedback to the peers for being great peer partners.*

Figure 2 *(continued)*

Data collection will consist of:

- *The Playground Observation of Peer Engagement (POPE) will be used by the teacher prior to implementation of the intervention. This will serve as baseline.*
- *After intervention, the POPE will be used once a week and will be discussed at the debriefing session with peers.*
- *A fidelity checklist will be developed and used by the coach to measure fidelity of the peers and teachers implementing the intervention.*
- *The follow-up team meeting to review all data and determine next steps will be scheduled five weeks from the first date of implementation.*

Figure 2. Example of a SAAGE Teacher Implementation Guide (TIG) that might be completed by an Individual Student Team. This sample TIG corresponds with the case study described in this paper.

As scheduled during the initial meeting, the coach met with Chris's teacher and para-professionals the next week to develop the Peer Partner intervention for Chris. The coach used the Peer Partner Coach's Outline (see Appendix B) to guide the discussion, and the teacher and paraprofessionals recorded decisions on the Teacher Implementation Guide shown in Figure 2. Following the Coach's Outline, the coach explained what peer-mediated social skills training consists of and provided examples (step 1). The coach also explained that peer mediated social skills training could consist of the peer initiating social interaction, responding to bids for social interaction, or both (steps 2 and 3). The coach asked a series of questions to determine goals (step 4). The teacher noted that Chris already had IEP goals for responding to and initiating social bids with peers and so those goals were used for this module. The goals were:

- Share materials, contribute ideas, and respond appropriately to peer contributions during small group work activities across 5 out of 6 consecutive opportunities to do so,
- Respond positively to a social interaction initiated by a peer with an appropriate verbal or nonverbal response across 5 out of 6 consecutive opportunities to do so, and
- Initiate a social interaction with a peer and respond to that peer's interaction appropriately during recess across 6 out of 10 consecutive recess times.

The team then began planning what the intervention would involve for Chris (step 5), deciding to first target responses to social bids and initiation of social bids. They decided the social skills training

would occur during recess and they established roles for the peer partners (initiator, responder).

When the coach asked the team how often Chris currently exhibited these behaviors, no one was sure although they agreed both initiations and responses occurred infrequently. The current data system used by the teacher was primarily anecdotal with a supplemental frequency count in which the teacher was to tally the number of times Chris exhibited undesired behaviors. The teacher confessed to the coach that there were days when she did not have time to tally nor write about the problem behavior events and, at times, just estimated the frequency. The coach showed the team a brief assessment they could use to gather baseline data during recess (the identified time for social skills training), the Playground Observation of Peer Engagement (POPE, Kasari, Rotheram-Fuller, & Locke, 2005). The POPE, adapted from Sigman and Ruskin (1999), is a 10-minute observation of the quantity and quality of children's specific social behaviors including engagement in social activities and peer social interactions during social times (e.g., recess). Time interval coding is used by observing 40 seconds and coding for 20 seconds. The POPE allows school teams to progress monitor the effectiveness of social interventions and make data-based decisions. The paraprofessionals indicated they would like to use the POPE to collect baseline data and would do so during five to 10 recesses between this meeting and the targeted date for implementation.

The coach then helped the team develop the instructional plan for the module including the plan for training the peer partners. To motivate Chris to interact with peers, the team decided to capitalize on his interest in and knowledge about Star Wars, which was also popular with his peers. They made available Star Wars Legos, Star Wars Puzzles, a Star Wars Chess Game, and similar toys during recess. They also decided to obtain (and Chris's parents indicated they had these materials at home and would share them) Star Wars capes and other dress-up items. The team decided to first target an increase in Responding to Social Bids. The coach showed the team sample scripts for use by peer partners and the team modified them to fit Chris. For example, peers could first present two choices to Chris by saying, "Hi Chris, let's play. Do you want to play with Star Wars Legos (showing the box) or do you want to play with the Star Wars Chess Game (showing the box)?" Scripts include social bids appropriate to use within an activity such as, "Now it's your turn," "Wow, your R2D2 is cool," etc. In addition, the script includes peer partner responses to Chris when he does and does not respond to bids.

The team next developed a plan for peer training. The team identified three boys who liked Star Wars, were popular among other stu-

dents, and enjoyed teacher attention. They selected two other boys as "back-ups" if one of the identified three was not willing to participate or if a parent declined. They made a plan for two 15-min training sessions that would occur during recess. During the first, the paraprofessionals would explain what the activities would consist of and provide a rationale, and also go over the scripts and role-play what might occur. Chris would participate in the second training, which involved using behavioral skills training (modeling, rehearsal, feedback) to help the peers develop fluency in the intervention.

The team decided to use the POPE to monitor effects of the intervention. Chris's parents worried that peers might not be able to implement the intervention and so the team also created a brief fidelity monitoring form that a paraprofessional could complete while also collecting data using the POPE. The meeting concluded with projecting dates for recruitment of peer partners, training peers, and start date for intervention implementation. No materials were necessary for this intervention beyond the scripts and Star Wars-related objects already in the classroom or Chris's home, and his parents said they would bring the dress-up materials in the following day. The teacher said she could meet with general education teachers by the end of the week to talk about peer recruitment and thought peers could be selected by the following week and trained two days after selection, putting the first day of implementation at three weeks from the date of the initial meeting. The coach and teacher agreed to touch base in one week to discuss status of recruiting and training peer partners. The coach scheduled a tentative date to observe, review the baseline data, and conduct a fidelity check during recess after the plan is implemented. Finally, a follow-up meeting was set for five weeks out to review progress to date.

The paraprofessionals asked the coach to help with peer training and so they set up a follow-up meeting during which the coach role-played peer training. The coach first took the role of the teacher and modeled the steps of the peer training and the implementation of the intervention. Next, the coach took on the role of a peer and the paraprofessionals implemented training, receiving feedback and prompting until they could implement the training with 100% accuracy and no prompting.

Future Directions

Educators serving students with ASD face many challenges. The intervention model we have described is designed to address those challenges. First, it incorporates evidence-based interventions, giving

educators access to strategies supported by empirical research. Second, it incorporates a modular approach, allowing educators to prioritize intervention delivery according to student need, staff capacity, time available, and so forth. Third, it uses a team-driven model of capacity building that is derived from School-Wide Positive Behavior Interventions and Supports, an evidence-based framework for initiating and sustaining systems-change and capacity building (Horner et al., 2010).

Although the components of the intervention program are evidence based, the overall package has yet to be evaluated. Research currently is underway to test the feasibility, efficacy, and effectiveness of the model for supporting students with ASD in schools. Several areas are in need of testing. First, can interventions that originated in specialized research settings be implemented with fidelity by nonspecialists in typical school settings? Second, does the modular decision-making method for selecting interventions improve student outcomes? Third, can schools sustain and generalize this method? Fourth, how does the ongoing coaching process influence outcomes? Although coaching is widely recommended, there is scant research on the optimal amount and type of coaching, or on the qualifications that coaches should possess. We believe that studies of this intervention may help answer some of these important questions, thereby offering educators a means to build and sustain capacity to support the diverse body of students with ASD.

References

Anderson, C. M., & Borgmeier, C. (2010). Tier II interventions within the framework of school-wide positive behavior support. *Behavior Analysis in Practice, 3*, 33–45.

Anderson, C. M., Martin, R. J., & Haynes, R. (in press). Supporting students with autism spectrum disorder in rural schools. In K. Michael & J. P. Jameson (Eds.) *Handbook of Rural Mental Health*. NY: Springer.

Anderson, C. M., Turtura, J., & Parry, M. (2013). Addressing instructional avoidance with Tier II supports. *Journal of Applied School Psychology, 29*, 167–182. doi.org/10.1080/15377903.2013.778772

Autism and Developmental Disabilities Monitoring Network Surveillance Year 2010 Principal Investigators. (2014). Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years—Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2010. *Morbidity and Mortality Weekly Report, March 28,* 63(SS02), 1–21.

Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge, MA: MIT Press.

Bethune, K. S., & Wood, C. L. (2013). Effects of coaching on teachers' use of function-based interventions for students with severe disabilities. *Teacher Education and Special Education, 36*, 97–114. doi:10.1177/0888406413478637

Blank, R. K., de las Alas, N., & Smith, C. (2008). Does teacher professional development have effects on teaching and learning? Evaluation findings from programs in 14 states. Retrieved from http://www.ccsso.org/content/pdfs/cross-state_study_rpt_final.pdf

Brookman-Frazee, L., Baker-Ericzén, M., Stahmer, A., Mandell, D., Haine, R. A., & Hough, R. L. (2009). Involvement of youths with autism spectrum disorders or intellectual disabilities in multiple public service systems. *Journal of Mental Health Research in Intellectual Disabilities, 2*, 201–219. http://dx.doi.org/10.1080/19315860902741542

Browder, D. M., Wakeman, S. Y., Spooner, F., Ahlgrim-Delzell, L., & Algozzinexya, B. (2006). Research on reading instruction for individuals with significant cognitive disabilities. *Exceptional children*, *72*, 392–408. doi:10.1177/001440290607200401

Brown, H. M., & Klein, P. D. (2011). Writing, Asperger Syndrome, and Theory of Mind. *Journal of Autism and Developmental Disorders, 41*, 1464–1474. doi:10.1007/s10803-010-1168-7

Burns, M. K., & Gibbons, K. (2012). *Implementing response-to-intervention in elementary and secondary schools: Procedures to assure scientific-based practices (2nd ed.).* New York, NY, US: Routledge/Taylor & Francis Group.

Burns, M. K., & Ysseldyke, J. E. (2009). Reported prevalence of evidence-based instructional practices in special education. *The Journal of Special Education. 9,* 3–11. doi:10.1177/0022466908315563

Conroy, M. A., Sutherland, K. S., Vo, A. K., Carr, S., & Ogston, P. L. (2014). Early childhood teachers' use of effective instructional practices and the collateral effects on young children's behavior. *Journal of Positive Behavior Interventions, 16*, 81–92. doi:10.1177/1098300713478666

Data Accountability Center. *Individuals with Disabilities Education Act data.* Retrieved from https://www.ideadata.org/default.asp

Farmer, R. F., & Chapman, A. L. (2008). *Behavioral interventions in cognitive behavior therapy: Practical guidance for putting theory into action*. Washington DC: American Psychological Association.

Fixsen, D. L., Blase, K. A., Duda, M., Naoom, S. F., & Van Dyke, M. (2010). Sustainability of evidence-based programs in education. *Journal of Evidence-Based Practices for Schools, 11*, 30–46.

Frith, U., & Happé, F. (1995). *Autism: Beyond "theory of mind."* Cambridge, MA, US: The MIT Press, Cambridge, MA.

Greenwood, C. R., & Kim, J. M. (2012). Response to intervention (RTI) services: An ecobehavioral perspective. *Journal of Educational and Psychological Consultation, 22*, 79–105. doi:10.1080/10474412.2011.649648

Happe, F., & Frith, U. (2006). The weak central coherence account: Detail-focused cognitive style in autism spectrum disorders. *Journal of Autism and Developmental Disorders, 36*, 5–25. doi.org/10.1080/10474412.2011.649648

Hendricks, D. (2011). Special education teachers serving students with autism: A descriptive study of the characteristics and self-reported knowledge and practices employed. *Journal of Vocational Rehabilitation,* 35, 37–50.

Herschell, A. D., Kolko, D. J., Baumann, B. L., & Davis, A. C. (2010). The role of therapist training in the implementation of psychosocial treatments: A review and critique with recommendations. *Clinical Psychology Review, 30*, 448–466.

Hess, K. L., Morrier, M. J., Heflin, L. J., & Ivey, M. L. (2008). Autism treatment survey: Services received by children with autism spectrum disorders in public school classrooms. *Journal of Autism and Developmental Disorders, 38*, 961–971. doi:10.1007/s10803-007-0470-5

Horn, J. A., Miltenberger, R. G., Weil, T., Mowery, J., Conn, M., & Sams, L. (2008). Teaching laundry skills to individuals with developmental disabilities using video prompting. *International Journal of Behavioral Consultation and Therapy, 4*(3), 279–286. doi:10.1037/h0100857

Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school-wide positive behavior support. *Focus on Exceptional Children, 42*, 1–14.

Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcome for children with autism. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 45*, 212–229. doi:10.1111/j.1469-7610.2004.00215.x

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004)

Iovannone, R., Dunlap, G., Huber, H., & Kincaid, D. (2003). Effective educational practices for students with autism spectrum dis-

order. *Focus on Autism and Other Developmental Disabilities, 18*, 150–165.

Iovannone, R., Greenbaum, P., Wei, W., Kincaid, D., Dunlap, G., & Strain, P. (2009). Randomized controlled trial of a tertiary behavior intervention for students with problem behaviors: Preliminary outcomes. *Journal of Emotional and Behavioral Disorders, 17*, 213–225.

Kasari C, Rotheram-Fuller, Locke J. (2005). The Development of the Playground Observation of Peer Engagement (POPE) measure. Retrieved from http://airbnetwork.org/images/T-POPE.png

Kasari, C., & Smith, T. (2013). Interventions in schools for children with autism spectrum disorder: Methods and recommendations. *Autism, 17,* 254–267. doi:10.1177/1362361312470496

Mandell, D. S., Stahmer, A. C., Shin, S., Xie, M., Reisinger, E., & Marcus, S. C. (2013). The role of treatment fidelity on outcomes during a randomized field trial of an autism intervention. *Autism, 17*, 281–295. doi:10.1177/1362361312473666

McGrew, J. H., Ruble, L. A., & Smith, I. M. (2016). Autism spectrum disorder and evidence-based practice in psychology. *Clinical Psychology: Science and Practice, 23*(3), 239–255. doi:10.1111/cpsp.12160

McIntosh, K., Filter, K. J., Bennett, J. L., Ryan, C. and Sugai, G. (2010), Principles of sustainable prevention: Designing scale-up of School-wide Positive Behavior Support to promote durable systems. *Psychology in the Schools, 47*, 5–21. doi:10.1002/pits.20448

National Autism Center. (2009). *National standards project findings and conclusions.* Randolph, MA: Author.

National Autism Center. (2015). *Findings and conclusions: National Standards Project, Phase 2.* Randolph, MA: Author.

National Professional Development Center (2017). *Autism Focused Intervention Resources and Modules.* Accessed August 21, 2017, at http://afirm.fpg.unc.edu/afirm-modules.

Ozonoff, S., & Jensen, J. (1999). Specific executive function profiles in three neurodevelopmental disorders. *Journal of Autism and Developmental Disorders, 29*, 171–177. doi:10.1023/A:1023052913110

Payne, A. A. (2009). Do predictors of the implementation quality of school-based prevention programs differ by program type? *Prevention Science, 10*, 151–167. doi:10.1007/s11121-008-0117-6

Reed, S. R., Stahmer, A. C., Suhrheinrich, J., & Schreibman, L. (2013). Stimulus overselectivity in typical development: implications for teaching children with autism. *Journal of Autism and Developmental Disorders, 43*, 1249–1257. doi:10.1007/s10803-012-1658-x

Sigman, M. & Ruskin, E. (1999). Continuity and change in the social competence of children with autism, Down syndrome, and developmental delays. *Monograph of the Society for Research in Child Development, 64*, 114.

Snyder, P. A., Hemmeter, M. L., & Fox, L. (2015). Supporting implementation of evidence-based practices through practice-based coaching. *Topics in Early Childhood Special Education, 35*, 133–143. doi:10.1177/0271121415594925

Stahmer, A. C. (2007). The basic structure of community early intervention programs for children with autism: Provider descriptions. *Journal of Autism and Developmental Disorders, 37*, 1344–1354. doi:10.1007/s10803-006-0284-x

Stahmer, A. C., & Aarons, G. A. (2009). Attitudes toward adoption of evidence-based practices: A comparison of autism early intervention providers and children's mental health providers. *Psychological Services, 6*, 223. dx.doi.org/10.1037/a0010738

Stahmer, A. C., Collings, N. M., & Palinkas, L. A. (2005). Early intervention practices for children with autism: Descriptions from community providers. *Focus on Autism and Developmental Disabilities, 20*, 66–79. doi:10.1177/10883576050200020301

Stahmer, A. C., Suhrheinrich, J., Reed, S., & Schreibman, L. (2012). What works for you? Using teacher feedback to inform adaptations of Pivotal Response Training for classroom use. *Autism Research and Treatment, 2012*, 709861. http://dx.doi.org/10.1155/2012/709861

Strain, P. S., & Bovey, E. H. (2011). Randomized control trial of the LEAP model of early intervention for young children with autism spectrum disorders. *Topics in Early Childhood Special Education, 31*, 133–154. doi:10.1177/0271121411408740

Sutherland, K. S., Conroy, M. A., Vo, A., & Ladwig, C. (2015). Implementation integrity of practice-based coaching: Preliminary results from the BEST in CLASS efficacy trial. *School Mental Health, 7*, 21–33. doi:10.1007/s12310–014–9134

Wilkinson, L. A. (2013) School psychologists need more training in providing services to students with autism spectrum disorders (ASD). *Autism 3*, e117.8 doi:10.4172/2165–7890.1000e117

Weisz, J. R., & Chorpita, B. F. (2012). 'Mod squad' for youth psychotherapy: Restructuring evidence-based treatment for clinical practice. In P. C. Kendall (Ed.), *Child and Adolescent Therapy: Cognitive-Behavioral Procedures (4th ed.).* (pp. 379–397). New York, NY US: Guilford Press.

Wong, C., Odom, S. L., Hume, K. A., Cox, A. W., Fettig, A., Kucharczyk, S., . . . & Schultz, T. R. (2015). Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. *Journal of Autism and Developmental Disorders, 45*, 1951–1966. doi:10.1007/s10803-014-2351-z.

Zandi, V., Stahmer, A., Reed, S., Lee, E. L., Shin, S., & Mandell, D. S. (2011). *Fidelity of implementation of evidence-based practices by paraprofessionals in community classrooms.* Paper presented at the 10th annual International Meeting for Autism Research. San Diego, CA.

Zhang, J., & Wheeler, J. J. (2011). A meta-analysis of peer-mediated interventions for young children with autism spectrum disorders. *Education and Training in Autism and Developmental Disabilities*, 62–77.

Appendix A

Guiding Questions for Social Communication and Interaction Modules

Module	Goal/Desired Outcomes	Guiding Questions
Is social communication or engagement rare or limited?		*Ask the questions below if the answer to this question is yes.* *Ask each question in order; a "no" answer may indicate that this module is most appropriate for the student. Stop when the answer to a guiding question is no.*
Functional Communication	• Teach the student to request breaks, assistance, preferred items, etc.	Can this student independently request wants and needs?
Alternative and Augmentative Communication	• Teach a student to use an augmentative communication device to communicate wants and needs.	Do the student's requesting skills require additional support (requesting is inconsistent, difficult to understand, etc.)?
Peer Partner	• Use peer-mediated strategies to increase social engagement with peers. This module is particularly appropriate for students who do not show much interest in peer interaction.	Does the student initiate social interaction with peers? Does the student respond to bids for interaction from peers?
Play Skills	• Help a student develop and sustain age-appropriate leisure and play activities that are initiated by the student.	Does the student enjoy playing with age-appropriate toys or activities and does so in an age-appropriate manner?

Does the student engage with others in a seemingly spontaneous manner, but engagement is brief or inconsistent?

Ask the questions below if the answer to this question is yes.

Ask each question in order; a "no" answer may indicate that this module is most appropriate for the student. Stop when the answer to a guiding question is no.

Group Activities	• Enhance a student's peer interactions. This module is appropriate for students who show interest in peer interactions but are not yet sustaining such interactions.	Does the student interact with peers in groups of three or more?
Dramatic Play	• Enhance a student's peer interaction by teaching or enhancing dramatic (also called imaginative) play.	Does the student engage in dramatic (imaginative) play with peers in an age-appropriate manner?
Conversation	• Teach or enhance reciprocal (back-and-forth) conversation.	Does the student engage in reciprocal (back-and forth) conversations with peers in a sustained manner?
Nonverbal Communication	• Help a student better use nonverbal communication strategies such as gestures, facial expression, and eye contact.	Does the student use nonverbal communication such as gestures or changing tone of voice in an appropriate and fluent way during conversations?
Recognizing Social Cues	• Help a student understand nonverbal communication strategies such as gestures, facial expression, and eye contact.	Does the student recognize and respond appropriately to nonverbal communication exhibited by others during conversations and/or play?

(continued)

Appendix A *(continued)*

Module	Goal/Desired Outcomes	Guiding Questions
Does this student have friends?		*Ask the questions below if the answer to this question is yes.* *Ask each question in order; a "no" answer may indicate that this module is most appropriate for the student. Stop when the answer to a guiding question is no.*
Peer Networks	• Increase the number and quality of opportunities for a student to build peer friendships. This module is intended for students who can and do engage in sustained conversations with peers yet do not have friends.	Does the student have friends? Does the student have supported social opportunities to interact with peers?
Nonverbal Communication	• Help a student better understand nonverbal communication strategies such as gestures, facial expression, and eye contact.	Does the student use nonverbal communication such as gestures or changing tone of voice in an appropriate and fluent way during conversations?
Recognizing Social Cues	• Help a student use nonverbal communication strategies such as gestures, facial expression, and eye contact.	Does the student recognize and respond appropriately to nonverbal communication exhibited by others during conversations?

Appendix B: Peer Partner: Coach's Outline

Use this:

- To increase quality and quantity of interaction with peers
- To engage peers in teaching social skills to the student with ASD

Coaching Goals:

1. Describe peer-mediated strategies and the uses of peer-mediated techniques to increase social engagement
2. Present sample peer instruction techniques
3. Discuss how to select what to teach
4. Describe components and types of peer-mediated interventions
5. Assess teacher's understanding of teaching social engagement strategies to peers
6. Develop Teacher Implementation Guide for next session
7. Develop plan for collecting data, checking on implementation, and monitoring progress

Teacher's objectives:

1. Identify appropriate and inappropriate uses of learning strategies from case vignettes
2. Select 1–2 learning strategies to use and 1–2 situations in which the student will use them
3. Complete worksheet on steps in setting up learning strategies
4. Participate in developing a Teacher Implementation Guide for the use of learning strategies with the student

Materials:

1. Teacher-nominated target problems
2. POPE
3. Sample play menus
4. Sample skills to teach student with ASD
5. "Steps in Implementing Peer Partner" handout
6. "Considerations in Choosing Peer Instructors" handout
7. "Examples of Strategies Taught to Peers" handout
8. "Sample peer partner teaching module" handout
9. Teacher Implementation Guide
10. Coach fidelity form
11. Teacher adherence form

Supplementary Reading Materials for Coach: Inclusion book, chapter 11

(continued)

Appendix B *(continued)*

Considerations:
This module is intended for children who seldom interact with peers.
○ If the student does not have a current communication system that she is using consistently AND the team has not previously taught the "I want" module, guide the team to implement the "I want" module prior to teaching this module. ○ If the student already engages in some peer interaction, consider the module for Group Games, Conversation, or Dramatic Play. ○ Prior to implementing this module, administer the Playground Observation of Peer Engagement (POPE). *This coach's outline may require several sessions to complete.*

Main Steps:	Remember to start by setting an agenda together and reviewing any interventions in Teacher Implementation Guides from previous sessions.
○ Define peer-mediated social skills training	Say that peer-mediated strategies involve teaching peers of students with ASD how to *initiate*, *maintain*, *prompt* and *reinforce* social interactions with the students with ASD.
○ Discuss purposes of peer-mediated social skills training	Explain that, although most children seem to be naturally interested in peers and eager to play with them, students with ASD may need help to start interacting with peers. Note that difficulties in interacting with peers, especially in activities that involve back-and-forth playful exchanges, relate to core features of ASD. Peer-mediated social skills training is used to increase the amount and quality of interaction with peers and to teach specific social skills. Acknowledge that this strategy requires a lot of work to set up, but note that it is often more effective than adult-led instruction: ○ Peers are usually better models of age-appropriate social interactions ○ Students with ASD may be more likely to interact with peers when directly taught to do so by peers

	○ Adult educators may be able to reduce the amount of direct guidance and support that they provide to the student
○ Describe types of peer roles as partners	*Pairing one peer with a student with ASD* ○ Initiator ○ Communication partner
○ Review teacher objectives, agree on outcomes and determine what (if any) objectives are already met.	○ Discuss the objectives for this module. ○ Ask the teacher to describe or provide any current strategies to support peer play are in place for the classroom and determine if the current strategies are: • Appropriate as is to meet objectives • Potentially appropriate with editing/refinement • Not appropriate for meeting needs
○ Use Teacher Implementation Guide to develop activity for student	As you complete each step below, fill in the Teacher Implementation Guide
• Assess student's current level of peer interaction	○ Review the student's POPE data ○ Ask the teacher about the student's current peer interaction: • Does the student spontaneously initiate communication or play toward peers? • Does the student respond to social bids from peers? • Does the student watch peers or follow them around? • During unstructured times such as recess, how often is the student doing something off by himself? • How often does the student play appropriately with toys or items on the playground, as opposed to engaging in repetitive behavior or seemingly undirected activities? • Does the student show an interest in what peers are doing? • Do the student's activities vary?

(continued)

Appendix B *(continued)*

• Use "Steps in Implementing Peer Partner" to plan how peer-mediated strategies will be used with student	○ Ask teacher to identify goal for student (e.g., engaging in play activity with peer for one minute). ○ Let the teacher know that it is best to work on interaction with peers during unstructured, child-led interactions during times such as recess or lunch, rather than during academic activities. • If the teacher chooses to focus on academic activities, consider the Peer Tutoring module. ○ Work with teacher to develop "play menus" that include a limited number of potential play activities for the day. Ideally, these menus would include some interests for the child with ASD and/or activities related to play skills in their repertoire. The menus should focus on cooperative activities. • Examples: bean bag toss, cat's cradle, cars/trucks, blocks, pulling in wagon, simple turn-taking games, concentration ○ Ask teacher to identify skills that the peer would coach the student on. • Examples: greetings, my turn/your turn, play-related comments, catching or throwing, how to play game
Use the "Steps in Implementing peer instruction" worksheet	As you complete each step below, fill in the "Steps in Implementing peer instruction" worksheet.
Help teacher develop identify possible peer(s) to serve as instructors. Present "Considerations in Choosing Peer Instructors" handout."	Considerations in Choosing Peer Instructors: ○ High acceptance among peers/Popularity ○ Prosocial behavior such as offering to assist other students and peers ○ Cooperativeness (following teacher directions) ○ Interest in and relationship with the student with ASD

	○ Having a good record of attendance at school ○ Belonging to a cohesive peer group ○ Same gender and about the same age
• Develop plan to recruit peers	○ Seek support and guidance on policies from building administrator. ○ Determine how to request parental permission and student assent. 1. Be ready to address any concerns expressed by administrator, parent, or student.
• Develop plan to train peers	○ Show "Examples of Strategies Taught to Peers" handout. ○ Determine when and where instruction will occur. ○ Note that sessions should include modeling by the adult instructor, role-play involving the peer and the adult, and role-play involving the peer and other students.
• Develop plan for baseline data collection	Identify time to begin baseline data collection, identify stability criterion (guidelines for determining if an intervention is needed or if more data should be collected).
• Identify date to begin implementation	Help the teacher to identify what steps are needed before implementation can begin (e.g., materials development, training, meeting with parents or specialists).
• Schedule date to review data, problem-solve, and determine next steps	○ Help the teacher identify an appropriate period of time to implement the schedule before review. ○ Select date for data review. ○ Say that decisions about next steps will be made contingent upon the data.