

Identifying and Targeting Social-Communication and Play Skills for Preschoolers With Autism

Mei (teacher), Joyce (instructional assistant), and Lateasha (speech and language pathologist) are practitioners working in an inclusive preschool classroom. They have two children (Luke, age 4 and Delquan, age 5) with autism spectrum disorder (ASD). The practitioners are facing challenges engaging Luke and Delquan in play and social activities. Both children prefer to be alone most of the school day. Mei suggests they explore techniques to purposefully engage Luke and Delquan in social and play activities, to improve these skills.

Like many in early education, Mei and the practitioners are seeking ways to include and actively engage all children with ASD in daily routines and activities. Preschool teachers and their administrators are not always adequately trained to work with children with ASD (Loiacono & Allen, 2008; Wilson & Landa, 2019), and have reported barriers to teaching children with ASD, such as challenges faced engaging children in classroom activities and instruction (Wilson & Landa, 2019). These findings suggest preschool teachers would benefit from strategies and resources to better engage all children in classroom activities.

Social-communication (SC) and play skills are often challenging for children with ASD, and research

suggests these are pivotal skills linked to later language development, adaptive, and academic skills (Doctoroff et al., 2006; Kasari et al., 2012). Researchers reported benefits for young children with ASD following interventions targeting SC, particularly joint attention (Kaale et al., 2012; Schertz et al., 2018), pretend play (Stagnitti et al., 2012; Wolfberg et al., 2015), and SC and play skills simultaneously (e.g., Chiang et al., 2016; Kasari et al., 2006, 2010, 2012). This research highlights the promise of positive outcomes from targeting these skills. However, many existing interventions that target SC and play for young children with ASD are designed to be delivered by clinicians (e.g., Kasari et al., 2006) or parents (e.g., Chiang et al., 2016; Schertz et al., 2018), and many children with ASD spend much of their time in preschool classrooms with recent U.S. data indicating nearly 75% of preschool aged children with ASD spend more than 10 hours per week in classrooms (Data Accountability Center, 2018). These data further support the need for preschool practitioners to have supports designed to help them target specific skills and better engage children with ASD, particularly in

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inclusive preschool settings, as evidence suggests engaging all children and facilitating interactions between them could lead to optimal outcomes for all young children (Division for Early Childhood/ National Association for the Education of Young Children, 2009).

Advancing Social-communication And Play (ASAP) is one example of a manualized intervention that addresses SC and play in young children with ASD (Watson et al., 2011). Based on Kasari et al.'s (2006) early work, ASAP was developed for use by preschool practitioners (lead teachers, teaching assistants, and related service providers) with supports and adaptations to engage and include families as part of these teams. Preliminary research findings suggested group improvements in SC and play (Dykstra Steinbrenner et al., 2015), and a multi-site randomized controlled trial (RCT) in inclusive and self-contained public preschool classrooms also indicated ASAP's emerging evidence base (Boyd et al., 2018). The RCT included an intervention group representative of (a) diverse races and ethnicities, (b) varying levels of parent education, and (c) varying levels of annual income. Direct improvements in SC and play skills were not reported in the RCT, but ASAP led to improved child engagement outcomes. Specifically, observers rated the amount of time children with ASD spent engaged with people and/or objects versus time they spent unengaged with people and/or objects during the classroom day (adapted from Adamson et al., 1998). Children with ASD enrolled in ASAP classrooms had higher ratings of overall engagement than those in non-ASAP classrooms, which

suggests that targeting SC and play skills may positively impact child engagement in classroom activities. While the research team originally thought improvements in SC and play skills would lead to increased child engagement, these RCT findings support the idea that increased engagement may lead to improvements in SC and play skills (Boyd et al., 2018; Shih et al., 2017). These findings highlight the importance of facilitating child engagement in objects and people in the development of play and SC skills. Furthermore, preschool practitioners who participated in the intervention rated ASAP's usability, applicability, and benefit to their children on an intervention rating profile that included items such as "This intervention would be appropriate for a variety of children" and "beneficial for a child." Of note, this manuscript's purpose is not to train readers to implement ASAP, as the packaged intervention included practitioner trainings, and ongoing coaching. (Wilson et al., 2012). Rather, this manuscript uniquely illustrates how practitioners in a variety of preschool classrooms and families may use existing ASAP resources in conjunction with practical evidence-based strategies to identify and target specific SC and play skills during classroom activities to increase child engagement and improve these pivotal skills. Interested readers may access the ASAP manual (Watson et al., 2011) and resources on the website: <https://www.med.unc.edu/ahs/asap/>.

Aligning with Division for Early Childhood (DEC's) teaming and collaboration recommended practices (RPs), preschool practitioners work collaboratively with ongoing communication to determine and

target individual child SC and play goals. Teamwork is essential to successful use of classroom-based interventions in all preschool classrooms (DEC, 2014; Watson et al., 2011). To enhance teaming relationships, practitioners may schedule regular meetings to plan, discuss successes, challenges, and progress related to children's engagement in the classroom and SC and play skills on a weekly or bi-weekly basis. Practitioners with full-day classrooms may consider meeting during naptime, and with half-day classrooms may consider meeting between morning and afternoon class sessions. Virtual meetings outside of classroom hours may be useful for some practitioners, particularly for those that do not have schedules that allow for meetings during school days. Virtual meetings may also facilitate the inclusion of families as team members in these meetings. Practitioners should invite families to attend and share information discussed at these meetings with families. In the current climate, with Covid-19 keeping many families at home, ensuring families are involved in children's classroom activities and progress is pertinent.



Using ASAP Hierarchies to Identify SC and Play Targets

Practitioners may begin by collecting and using child data to determine individualized SC and play child goals (DEC, 2014). They may use structured or unstructured assessments to determine shared goals based on ASAP's SC and play skill hierarchies. See Tables 1 and 2 for complete hierarchies (Watson et al., 2011). The SC hierarchy begins with social interactions (social games, such as peek-a-boo and tickling games) and requesting (responding to and initiating), followed by joint attention (responding to and initiating shared attention with the purpose of shared enjoyment). The play hierarchy begins with exploratory play (e.g., simple manipulations of objects such as banging, mouthing, shaking) and relational play (e.g., putting objects together and taking them apart). Functional play follows (simple pretend play with objects and toys) leading to more advanced symbolic play (pretend play including using objects to represent other objects and taking on roles in play). When a child displays a skill three times in separate settings without prompting, that skill may be considered mastered, and the practitioners may choose to target the next skill on the hierarchy.

To conduct an unstructured assessment of SC or play, practitioners may consult with families and use observations and their knowledge of individual child skills to identify which skill(s) to target. Mealtimes (when children may be motivated to request) and recess (when children may interact with peers) may be opportunities to

Table 1
ASAP Play Skill Hierarchy

Exploratory play skills <i>Age of emergence: 2-10 months</i>	Relational play skills <i>Age of emergence: 10-18 months</i>	Functional play skills <i>Age of emergence: 12-18 months</i>	Symbolic play skills <i>Age of emergence: 18-30 months</i>
<p>E1. Child picks up and looks at a toy</p> <p>E2. Child plays with toys using both hands together (may include banging, shaking, rubbing, squeezing, mouthing, licking, smelling)</p> <p>E3. Child plays with one toy in three or more different ways</p>	<p>R1. Child takes pieces of toys apart</p> <p>R2. Child puts toys together in simple ways</p> <p>R3. Child puts several toys together in specific ways</p>	<p>F1. Child plays with toys in functional or simple pretend ways</p> <p>F2. Child plays with toys in simple pretend ways directed to self</p> <p>F3. Child includes a doll/action figure in simple pretend play with toys</p> <p>F4. Child includes other people in simple pretend play with toys</p> <p>F5. Child uses the same action in simple pretend play with two different people or dolls/figures</p>	<p>S1. Child makes doll/figure move or do things as if it were alive</p> <p>S2. Child does 2 different pretend actions, one right after another, with the same toy</p> <p>S3. Child does 3 or more different pretend actions, one right after another, with the same toy</p> <p>S4. Child uses one toy/object to represent or stand for another</p> <p>S5. Child uses pretend qualities in play</p> <p>S7. Child takes on a pretend role in play that other people direct</p> <p>S8. Child suggests pretend role in play to self or other people</p> <p>S9. Child expands pretend play with other people into (a) new roles, (b) new theme, and/or (c) fantasy roles</p>

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Note. Letters and Numbers in the table are abbreviations for play type and skill number, ASAP = advancing social-communication and play; E = exploratory; R = relational; F = functional; S = symbolic.

Table 2
Social Communication Skill Hierarchy

Social interaction	Requesting	Joint attention
<i>Age of emergence: 8-15 months</i>	<i>Age of emergence: 8-15 months</i>	<i>Age of emergence 10-18 months</i>
SI1. face to face games, physical activities, or routines, child watches the adult closely	RQ1. Child reaches for out of reach object to show wanting the object	
SI2. During face to face games, physical activities, or routines, after a brief pause child shows wanting the game to continue (e.g., looks, moves body to make a motion of the game, touches the partner, vocalizes)	RQ2. Child pulls person's hand toward objects to show request for help	
SI3. Child plays back-and-forth games with objects or actions (e.g., exchanges objects back-and-forth)	RQ3. Child gives objects to show request for help	
SI4. Child initiates familiar games or routines (i.e., not right after an adult does the action)	RQ4a. Child looks at nearby objects when another person points to the objects as a request (i.e., objects within reaching distance)	JA1a. Child responds to another person giving objects just to share interest in the objects
	RQ4b. Child points to nearby objects to request them	JA1b. Child gives objects just to share interest in objects with another person
SI5. Child expands games or routines, for example, includes a third person in the game/routine switches roles with other person (e.g., finder vs. hider)	RQ5a. Child looks at distant objects when another person points to the objects as a request (i.e., objects that are beyond reach)	JA2a. Child responds to another person showing objects just to share interest in the objects
	RQ5b. Child points to distant objects to request them	JA2b. Child shows objects just to share interest in the objects with another person
SI6. Child combines gesture and/or vocalization/verbalization with looking at person to show wanting game to continue	RQ6. Child combines gesture and/or vocalization/verbalization with looking at person to request	JA3a. Child follows a point to nearby objects/events just to share interest in objects/events
		JA3b. Child points to nearby objects/events just to share interest in objects/events with another person
		JA4a. Child follows a point to more distant objects/events just to share interest in the objects/events
		JA4b. Child points to more distant objects/ events just to share interest in objects/ events with another person
		JA5. Child follows gaze of another person to objects/events just to share interest
		JA6. Child combines gesture and/or vocalization/ verbalization with looking at person just to share interest in an object/ event

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Note. Letters and numbers in the table indicate social communication types and skill levels; SI = social interaction; RQ = requesting; JA = joint attention.

observe SC levels. Information related to play skills may be observed when children play with toys/objects.

If practitioners are less familiar with a child, they may use a more structured approach to assess SC and play skills. Practitioners may set up SC activities that provide opportunities for engaging in social interactions, requesting, and joint attention with the purpose of sharing interest, such as (a) puzzle play, (b) action toys, (c) physical games, (d) bubble play, and (e) filling a “surprise bag” with toys and objects for children to reach into and potentially share what they find. Setting up areas with blocks/building materials and simple pretend play items such as (a) dolls, (b) cars, (c) pretend food, and (d) play furniture may facilitate opportunities to observe play skills



(resources available in ASAP Manual, Book I, Sections 3 & 4).

The practitioners met to determine SC and play targets for the children. They were familiar with Luke's skills as he was in his second year with them. They discussed ways that Luke interacts socially and agreed he requests items when highly motivated, but they realized he doesn't engage in back and forth games. So, the practitioners decided to target SI3 (Social Interaction 3: plays back and forth games with objects or actions). They reflected on how Luke plays in the classroom. He loves to play with blocks and complete puzzles or shape sorters. He also plays with cars, but he prefers to spin the wheels. He tends to become over-focused on the wheels and does not attend to anything else around him, thus would benefit from changing his play to allow for pretending and interacting. The practitioners reviewed the play hierarchy and decided to begin with F1 (Functional 1: plays with toys in functional or simple pretend ways).

Delquan is new to the classroom, so the practitioners decided to set up opportunities to observe his SC and play skills. At recess, Mei blew bubbles with him to help assess his SC skills and he vocalized “I want more bubbles” with eye contact to request more bubbles. He then smiled and looked at Mei as he popped the bubbles. He did not respond to Lateasha when she pointed across the playground for him to look at bubbles. They set up the housekeeping center in the classroom with pretend play materials such as telephones, dolls, play food, and cookware. Delquan entered the center independently and engaged with the play materials. He demonstrated functional play

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pretending to feed the dolls, but he did not make the dolls move or eat as if they were alive. So, they decided to target and JA3a (Joint Attention 3a: follows point to nearby object to share interest) and S1 (Symbolic 1: makes doll move as if it were alive) for Delquan.

Using Evidence-Based Practices to Target SC and Play Skills

Aligning with DEC’s teaming and collaboration RPs, preschool practitioners are encouraged to work together to develop their own specific plans to target SC and play. In the planning process, they should strive to embed learning opportunities into already occurring classroom activities with individual children’s strengths and needs in mind so that the children are able to access, engage, and succeed in the activity, leading to an inclusive environment for all children, and work with families to target SC and play at home (DEC, 2014). Practitioners/families should plan for and appropriately transition children into a selected area for an activity. Evidence-based supports such as (a) visual supports, (b) timers (visual or auditory), (c) picture schedules, (d) physical boundaries, and (e) clear beginning and end points can be useful to inform children of transitions and expectations (e.g., Wong et al., 2015).

Many already occurring classroom and home activities lend themselves to targeting SC and play skills. See Table 3 for examples of targeting SC and play skills within common preschool classroom centers (ASAP Manual, Book II, Section 3 provides printables for centers). Some example classroom group activities

include facilitating activities during circle time such as “Hot Potato” or passing a hat around the circle for each child to wear. In such activities, each child has a social interaction with the child next to them (SC) and pretending the potato is “hot” or acting out a role while wearing the hat incorporates pretend play and silliness into the activity (play). Circle time allows opportunities for practitioners to model pretend play actions with toys and figures demonstrating play scenarios to the group and direct group attention to items around the room to facilitate SC for the group. Additional activities practitioners/families may try in school or home that may be useful when targeting SC and play include games such as “I Spy,” a nature walk, or a going on a scavenger hunt while narrating what is occurring to facilitate shared attention (SC) and encouraging manipulation and pretending with found materials (play). Practitioners/families may use a weather doll to “dress” for the day’s weather (e.g., put a hat and scarf on the doll if it is cold outside or sunglasses if it is sunny), incorporating child engagement and social interaction (SC) with simple play opportunities. Mealtimes are opportunities to promote SC and play. Providing choices to children and introducing novel foods may facilitate engagement and communication attempts (SC) and placing desired snacks in clear containers may encourage children to take off and/or on lids (play). Practitioners/families may also set up materials for a pretend restaurant or birthday party (play) and facilitate conversations and interactions with peers (SC) during those activities (Watson et al., 2011).

During activities, practitioners/families also may embed naturalistic

Table 3
Sample Social-Communication and Play Activities for Preschool Classroom Centers

Center	Social interaction	Requesting	Joint attention	Exploratory play	Relational play	Functional play	Symbolic play
Blocks and cars center	Pass blocks back and forth with pauses	Keep blocks in containers that are difficult to open	Hold a scavenger hunt for items in block center	Model and encourage multiple actions with same object	Model stacking and sorting with blocks and other materials	Include action figures in center	Pretend blocks are food and/or that they are hot, cold, stinky, and so on.
Circle/group time	Pause during familiar songs and routines and wait for children to respond	Incorporate picture symbols to represent songs, activities	Put pictures/ icons upside down or in different places Incorporate show and tell	Pass sensory items around the circle	Encourage children to put icons on charts Take turns with a sorting activity	Include puppets/ dolls in songs Drive cars to indicate attendance	Incorporate songs/ routines with pretending (e.g., animal action)
Dramatic play/ housekeeping	Use blanket for peek-a-boo	Supply dress-up clothing that requires assistance to put on	Prompt children to give and show interesting items to you or peers	Encourage multiple activities with the same item	Provide lids for pots and pans Sort toys	Include dolls, animals, & puppets	Establish multi-step play scripts with visuals
Manipulatives/ table time	Create a game/ routine out of cleaning up	Offer choices Place favorites out of reach	Put novel/ unexpected items in the center	Encourage multiple actions with the same object	Provide containers for sorting and putting in/taking out	Incorporate a play tool set into the center	Pretend puzzle pieces are real and move them
Reading	Pause while reading stories Incorporate back and forth action into story	Point to nearby books to request Place favorites out of reach	Incorporate "I Spy" books Show pictures by holding the story up	Include books with a variety of textures, shapes, and colors	Sort books by color, size, or type	Encourage children to imitate events in a story with props	Use dolls and puppets to move as if alive Act out stories

Source. Adapted from Watson et al. (2011)

behavioral strategies to increase and sustain child engagement while targeting SC and play skills (DEC, 2014; Mahoney & MacDonald, 2007; Snyder et al., 2015; Wolery & Hemmeter, 2011). For example, (a) imitating child behavior, (b) being animated, (c) planning activities around child interests, (d) following a child's lead, (e) waiting with anticipation, (f) providing choices, and (g) introducing novel items in familiar activities are strategies that can motivate children and increase child engagement (e.g., Mahoney & MacDonald, 2007; Mahoney & Solomon, 2016; Watkins et al., 2019). Child interests might include

preferred characters/dolls/figures and preferred activities might include bubble or water play (Watkins et al., 2019). Placing favorite items out of reach but within sight may facilitate requesting (Mahoney & MacDonald, 2007). When teaching a novel skill, practitioners members may choose to (a) model specific SC and play skills for their children, and (b) provide prompting as needed from least to most assistance to help children follow the model (Wong et al., 2015). During activities, practitioners should strive to consistently reinforce child successes in SC and play attempts and respond with positivity to any child communication attempts

(Watson et al., 2011). Reinforcement approaches should be individualized and may include social praise (high-fives, cheers, or tickles) and/or tangible rewards (preferred toys or activities; Wong et al., 2015). Integrating these strategies could lead to improved engagement and overall classroom dynamics.

Because Luke and Delquan enjoy cars, Mei and the practitioners have planned to target SC and play skills in the blocks center while Lateasha provided push-in services in the classroom. The practitioners decided Joyce and Lateasha will work together in the center while Mei observes the activity. They set out a road mat in the center and had the children sit around the mat. Mei set up a visual timer to help children track the activity's beginning and end.

Luke was working on F1 (Functional 1: play with toys in simple pretend ways). When Joyce noticed Luke spinning the wheels, she imitated this motion with another car which drew Luke's attention to her. She modeled driving the car with silly sounds, faces, and songs to encourage Luke's engagement in the activity. When he did start rolling the car, she held out her hands expectantly to encourage Luke to roll the car to her addressing his SC goal, SI3 (Social Interaction 3: play back and forth games). She created more opportunities for him to roll the car back and forth to Delquan. Everyone cheered when Luke rolled the car to his friend!

Delquan was working on S1 (Symbolic 1: makes doll/action figure move as if it were alive) and JA3a (Joint Attention 3a: follows a point to nearby objects/events just to share interest in events). Mei placed a toy figure of Buzz Lightyear (one of

Delquan's favorite characters) in the blocks center, and Joyce placed a poster of Buzz nearby. Lateasha showed Delquan the figure waited with anticipation (holding her hand out with her eyes open wide) to encourage him to request it. He requested it, but did not initiate putting Buzz in the car, so she provided hand-over hand prompting for Delquan to make Buzz "drive" the car. He laughed and enjoyed the activity. She then pointed to the picture to initiate joint attention with Delquan. She was sure to be extra animated and silly to draw Delquan's attention to her. He did not look on her first attempt, but when she paired her point with a hand clap, that helped Delquan look to the picture of Buzz.

Later, Joyce and Lateasha collected all the cars, and provided each child a turn to request a vehicle. Together, they facilitated a fun game driving and crashing the cars into each other. They helped the children roll cars back and forth to each other while making silly and animated comments on children's participation in the activity. To add novelty and variation to the play and engage children longer in the activity, they added simple blocks and helped the children build towers to crash down with their cars. The practitioners continued to be animated and use silly sounds which encouraged all children in the class to engage and participate.

An ongoing critical element in targeting specific skills is providing more than one opportunity to engage and display the target skill(s) during a given activity (Watson et al., 2011). Furthermore, to facilitate generalization, preschool practitioners should engage children and target SC and play skills during

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more than one activity (Watson et al., 2011). As children progress, practitioners/families may continue to provide specific materials in classroom centers or around the home so that children have opportunities display the skills without adult assistance.

Collecting Data and Mastering SC and Play Goals

Consistent with RPs, preschool practitioners should regularly track child progress on goals and make data-informed decisions (DEC, 2014). Practitioners can monitor child engagement and interest in the activity and determine how well a child is progressing. They should monitor children's (a) number of opportunities to perform the targeted skill, (b) successes/challenges in performing the skills, and (c) performance compared to previous sessions. When mastered (i.e., child exhibits a skill unprompted across three different contexts), the practitioners determine which goal on the hierarchy to target next. Some children may move through parts of the ASAP goal hierarchies quickly, and by regularly documenting performance, practitioners can facilitate their development of higher-level skills. In other cases, a child may not demonstrate progress on a target skill. In these situations, practitioners may assess the environment, ensure they are providing adequate individualized support for the child, and discuss whether further adaptations should be made, or the target skill changed. They should intermittently address mastered goals to ensure

maintenance (see also ASAP manual, Book II, Section 4).

For optimal outcomes, practitioners also should monitor *their own progress* in helping children obtain skills. For example, they should reflect on whether they (a) secured and maintained child engagement, (b) provided multiple learning opportunities, (c) integrated child interests, and (d) provided reinforcement for child successes. They may consider ways to improve on the next opportunity if issues arose (reflection forms are available in ASAP Manual, Book II, Section 4). This may help practitioners remain consistent in collaborative planning, developing, and monitoring shared goals (DEC, 2014; Watson et al., 2011).

In sum, increasing child engagement and improving SC and play skills for young children with ASD may provide a foundation for future academic and social development; yet preschool practitioners may not have the resources to successfully identify and target these skills for all children in their classrooms. With intentional collaboration, applying evidence-based strategies accompanied by specific ASAP resources such as the play and SC hierarchies may help address this need, thus increasing engagement of all children in classroom learning opportunities.

While the children were napping, Mei guided the practitioners in reflection on their own progress and on Luke's and Delquan's progress. They discussed encountered challenges and successes. Lateasha shared that Luke responds and engages in back and forth games when she is animated, but the classroom teachers haven't seen this. The practitioners decided to continue

with his SC goal and increase their own animation during learning opportunities until they see him engage in back and forth play in three different settings. Mei shared that she noticed Joyce's imitating, modeling, and prompting in the blocks center were helping Luke learn to expand his play with cars. They decided to continue his play goal, but to focus on play in the housekeeping center so Luke can learn simple pretend play actions like stirring and putting play food into

the oven. The practitioners discussed Delquan's progress and agreed that he consistently responds to points to nearby objects to share interest so they decide to move to JA3b (Joint Attention 3b: initiates point to nearby objects to share interest) and continue to work on his play goal in a variety of classroom centers. The practitioners felt that they were all learning how to engage children in SC and play learning experiences and they looked forward to continued progress.

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