Social Skills Training for Young Adults with Autism Spectrum Disorder: Overview and Implications for Practice

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Abstract: Social skills training for individuals with autism spectrum disorder is essential across the developmental lifespan. However, literature on this topic has historically focused on preschoolers and elementary students rather than adolescents and young adults. Adolescents and young adults with autism spectrum disorder encounter unique social challenges in college settings, employment environments, and communities. Thus, social skills training for this population must adapt to the needs of the individual leading to complexities for educators during the development, implementation, and monitoring of the training protocol. The current article provides an overview of social skills training relevant to adolescent and young adults with autism spectrum disorder and implications for practice are shared.

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Social skills deficits are a central feature for many students with disabilities especially those with autism spectrum disorder (ASD). As such, federal and state regulations require educators to develop meaningful social skills interventions to be included in the academic programs of students age 5 through 21 (Individuals with Disabilities Education Act; 2004). These interventions often include explicit social skills training and need to be adapted to the developmental stage of the students (Cohen, 2011). The current article defines social skills, examines the importance of intervening with young adults, and reviews core components of social skills interventions for young adult students with ASD. Practical examples are shared and implications for practice are discussed.

Social Skill Deficits in Individuals with an Autism Spectrum Disorder

Social skill deficits are central to the diagnostic criteria of ASD, as individuals with this disorder typically have difficulty initiating interactions, sharing enjoyment, maintaining eye contact, reciprocating conversation, taking another's perspective, and inferring interests of others (American Psychiatric Association, 2000; Individuals with Disabilities Education Act, 2004). These deficits can significantly affect the ability to establish lasting and meaningful relationships and lead to rejection and isolation. Furthermore, the deficits do not abate with age. The ease of living independently, marrying, going to college, working
in competitive jobs, and developing a large network of friends are challenges for individuals with autism spectrum disorder (Shattuck et al., 2007).

Howlin, Goode, Sutton, and Rutter, (2004) reviewed several studies investigating the quality of life outcomes for individuals diagnosed with ASD. Although some individuals acquired relatively high levels of independence, the majority of the population was classified as dependent on either family members, or community resources. Adults with ASD generally do not live alone and many did not establish close friendships. Howlin et al., (2004) indicated that depending on the individual's level of communication, his or her quality of life ranged from very dependent to mostly independent with the majority falling in the dependent range. Many of the individuals in this sample lived in long-stay hospitals, sheltered communities, or other restrictive environments. However, a small portion of individuals in the more independent range, held jobs and participated in some form of post-secondary education. In one research review, 61% of the population was classified as making poor social adjustment (Howlin, et al.). In another study, 70% had not completed school, and only one of the 29 individuals in the sample held a job (Seltzer et al., 2003).

**Defining Social Skills for Young Adults with an ASD**

Social skills are the specific behaviors that an individual uses to competently perform social tasks (Gresham, Sugai, & Horner, 2001). This definition is largely based on the individual, the context, and those around the individual. Furthermore, social skills are behaviors exhibited in specific situations that lead to social competency, whereas, social competency refers to individuals' perceptions of the social behavior (Gresham et al., 2001; Gresham, 2002; Lane, Menzies, Barton-Arwood, Doukas, & Munton, 2005). Thus, social skills are behaviors that must be taught, learned, and performed while social competence is the perception of these behaviors within and across situations (Gresham et al., 2001; Kamps, 2010).

Social competency predicts adequate psychological and social adjustment and it is typically observed through demonstration of prosocial behaviors that include empathy and perspective taking (Eisenberg & Harris, 1997; Gresham et al., 2001, Lane et al., 2005). A young adult is described as socially competent if he has the capability of establishing and maintaining positive interpersonal relationships in ways that are deemed appropriate as judged by other individuals such as parents, teachers and peers (Gresham et al., 2001; Lane et al., 2005). In contrast, young adults who are perceived as socially incompetent tend to experience negative outcomes such as teacher rejection, school failure, social rejection, and limited social involvement (Lane et al., 2005). Additional negative outcomes may include juvenile delinquency, employment difficulties, and mental health problems (Miller, Lane, & Wehby, 2005).

To assist educators in developing effective social skills programs for young adult students with ASD, consideration must be given to the fact that social skills demands change through development. As stated above, young adults are faced with issues concerning success in college, employment, social support outside the family, and romantic relationships (Cohen, 2011; Miller et al., 2005). These are vastly different social skills goals then one would face in elementary school. Furthermore, many individuals with ASD will continue to demonstrate social skill deficits into adulthood. This is problematic due to a lack of understanding and typically there are fewer resources available (Cohen, 2011). If we do not effectively intervene, then young adults with ASD may develop delinquent behavior, mental health problems, and continue to rely on other adults for support (Howlin, et al., 2004; Miller et al., 2005). Cohen (2011) further discusses the need for better social skill interventions with young adults with ASD stating that they continue to lack friendships, have limited vocational success, and spend much of their time alone. These findings are supported by other research indicating that 50% of young adults with ASD in one study had no social support or friendships outside of "prearranged settings" (Ormond, Krauss, & Seltzer, 2004).

**Developing an Individualized Social Skills Training Plan**

Social skills training focuses on building positive behaviors, while using nonaversive methods. Because training often serves as an intervention, it must be designed to fit the needs of the student as opposed to making the student fit the chosen strategy (Bellini, Benner, & Peters-Myszak, 2009). Thus, an individualized training plan is similar to a behavior support plan. Behavior support plans are developed through a functional analysis of behavior, defined as a process that explicitly links behavior, environment, and intervention (O’Neill et al., 1997).

Developing an individualized social skills training plan for a specified individual and targeted environment begins by applying principles of functional analysis to variables that underlie social skills deficits. Such variables then become the framework to the training plan. Based on
The role play technique seems particularly applicable to training acquisition deficits. When role-playing, the targeted skill is rehearsed in a practice setting and the trainer has the opportunity to explicitly guide, as the potential for anxiety is reduced. Role-playing provides opportunity for behavioral cues to be emphasized and scenarios consecutively practiced (Bellini et al., 2009; Gresham, 2002; Mesibov & Shea, 2011). Role-playing is most successful when used in repetition and generalization for the skills practiced improve when stimuli of the naturalistic environment are embedded into the training setting (Bellini, et al., 2009; Fox & McEvoy, 1993; DuPaul & Eckert, 1994). Common stimuli can be animate or inanimate, such as peers (Brady, McEvoy, Wehby, & Ellis, 1987), proximics of the physical setting (Gaylord-Ross, Haring, Breen, Pitts-Conway, 1984), and interaction materials (Shafer et al., 1984). When using a personal coach, maintenance of skills acquired through role play have been documented at follow-up during one month (Palmen, Didden, & Arts, 2008).

Lack of Practice or Feedback

Deficient social performances may result when young adults with ASD have not had sufficient practice (fluency deficits) demonstrating an acquired social skill or given positive reinforcement for the behavior. The individual knows the skill and attempts to perform the skill but does so inappropriately; therefore, lacking positive, reinforcing feedback.

According to Barton, Kinder, Casey, and Artman (2011), feedback is information provided to an individual regarding certain aspects of his or her behavior. Feedback regarding performance is typically provided following behavioral or social development. Feedback gives the learner specific information regarding the reasons for correct or incorrect performances of a given social skill. Performance feedback is easily adaptable to fit the needs of the individual. Feedback can take several forms including: (1) verbal, (2) graphical, (3) checklists, and (4) guided self-reflection. Verbal feedback can be presented in a supportive, corrective, or a data-based manner to the student.

Graphical feedback targets a specific behavior or skill and is then charted in a visual manner for the student to recognize their progress. Checklists can be used independently or in additional to other forms of feedback. The checklist targets specific strategies to be observed during social interaction, and successful use of the strategy will be noted for the student to monitor. Finally, the student gains performance feedback when the
trainer or social coach prompts self-reflection. The use of guided self-reflection enables the student to reflect on his or her progress and performance throughout the sessions. Although no evidence suggests one feedback strategy is superior to others, Barton et al., (2011) established significant evidence for the use of performance feedback. Opportunities for practice and feedback are inherent when trainers utilize a peer-mediated training program. Peer-mediated training also increases the likelihood for generalization of skills to other environments (DuPaul & Eckert, 1994; Fox & McEvoy, 1993; Sheridan, Hungelmann, & Maughan, 1999, Smith & Gilles, 2003). Peer-mediated training refers to academic, behavioral, or social strategies that employ peers as direct, or indirect agents of change (DiSalvo & Oswald, 2002; Egel, Richman, & Koegel, 1981; Kamps, Barbeta, Leonard, & Delquadri, 1994). An individual’s peer might consist of another who is similar in age, status, grade, knowledge, or developmental level. Current theory suggests that individuals engage in reciprocal relationships with their environment throughout the formation and organization of social relationships (Bandura, 1977). The individual’s social interactions typically consist of reciprocal and complementary interchanges with peers that support the actions and behaviors of other peer group members (Farmer & Farmer, 1996). Additional research indicates that peers mutually reinforce behaviors, values, and norms that are consistent with their own, and exert a strong influence on one another’s behaviors and attitudes with that group (DiSalvo & Oswald, 2002). Peers become increasingly important throughout one’s development, thus they are exceptional candidates as positive behavior change agents. Specifically, positive involvement with peers provides increased opportunities to engage in prosocial behaviors, and may improve social acceptance and academic achievement (Hoff & Robinson, 2002).

Consider the following example. A young adult with ASD may learn socially appropriate behaviors in a social skills training program such as beginning a conversation; however, he or she may not be provided ample opportunity in the natural setting to begin a conversation for skills to be “tested” and reinforced by others. As a result, the skill is not likely to be maintained in the target young adult. Most importantly, when the young adult with ASD does implement an “untested” skill before it is practiced to a sufficient degree, others may perceive it as superficial or awkward. When others perceive the skill in such a manner, the young adult will not be reinforced for using the skill. Once reinforcement is nonexistent or removed, the behavior will become extinct. Peers can aid in this process by giving authentic feedback as to what is acceptable and unacceptable. This feedback is much more influential than feedback given from an authority figure or trainer. For example, imagine a young adult with ASD were eating lunch in the cafeteria with peers and the conversation was in progress about the score of a football game. If the young adult with ASD entered into the conversation and began talking about Star Wars, peers would most likely redirect the conversation back to the topic, commenting in some way that the discussion on Star Wars was off-topic. However, these types of authentic situations can only be effective if young adults with ASD have access to, are included in, and participate in activities with their peers. This is often not the case when young adults with ASD are isolated and dependent.

Lack of Cues or Opportunities

Young adults with ASD may be deficient in performing certain social skills because their environment does not provide natural cues that are necessary to evoke a specific prosocial behavior. Therefore, although the young adult might possess the skill, he or she will not be aware of when to appropriately exhibit it. Facilitating explicit cues from all individuals in natural environments of young adults with ASD is an impossible task. Thus, it is necessary to combine the aforementioned principles of peer mediated training with modeling to increase explicit cues or opportunities across the environments.

The concept of modeling, or observational learning, was introduced over 40 years ago by Albert Bandura as part of his work on social learning theory (Bellini & Akullian, 2007). Over the course of his career, Bandura demonstrated that modeling has a profound impact on the development of children. In particular, Bandura (1977) showed that children acquire a vast array of skills by observing other people perform the skills, rather than just through personal experience. Bandura also found that observers will imitate behaviors with or without the presence of reinforcement, and will perform the behavior in settings other than the setting where it was originally observed. However, attention and motivation are essential to observational learning. If a child does not attend to a model, he or she will not be able to imitate the model’s behavior. According to Bandura, children are most likely to attend to a model that they perceive as competent, and who is similar to them in some way (physically, age, group affiliation, ethnicity, etc.).

Modeling is the progenitor of social skills training. Modeling involves the use of live or filmed performances or enactments of social skills (Bandura, 1977; Bellini & Akullian, 2007). These interventions rely on an adult or peer providing a demonstration of the target behavior that should result in an imitation of the target behavior by the
individual with ASD. Modeling is almost always coupled with some form of verbal instruction. Verbal instruction involves the use of spoken language to describe, prompt, explain, define, or request social behavior. Direct instruction may involve the use of concrete or abstract concepts to facilitate the acquisition of social skills. The training procedure of coaching relies heavily on verbal instruction and modeling. The major advantage of modeling with verbal instruction is that individuals with ASD learn how to combine, chain, and sequence behaviors that comprise a particular social skill (Egel, Richman, & Koegal, 1981; Robertson & Biederman, 1989). Modeling can include simple or complex behaviors (i.e., eye contact vs. maintaining a conversation), and is usually combined with other strategies such as feedback, role-playing, and reinforcement. When combined with these additional strategies, modeling is more effective in eliciting the target behavior, with longer maintenance and generalization effects (Bellini & Akullian, 2007).

For example, a young adult with ASD may say, “excuse me” whenever he interrupts his teacher’s conversation because his teacher gives him a stern glance immediately prior to the interruption. However, during lunch in the cafeteria, the young adult does not say, “excuse me” when interrupting a peer’s conversation because the peer holds her finger up indicating “one-minute.” In this example, the young adult’s response of saying “excuse me” has only come under the control of the teacher’s stern glance; instead of under a variety of other possible social cues that might be made explicit “in the moment” by a peer mediator.

Lack of Reinforcement

Reinforcement is based on operant techniques, and involves the presentation or removal of environmental events that increase the frequency of a behavior (Rathvon, 2008; Shinn, Walker, & Stoner, 2002). Reinforcement can either be positive or negative. With positive reinforcement, an environmental event is presented, which increases the frequency of a behavior. Positive reinforcement is frequently used in social skills training in the form of praise, access to preferred activities, and/or tangible items. With negative reinforcement, an environmental event is removed that increases the frequency of a behavior. Negative reinforcement involves either escape or avoidance learning. An individual’s behavior will be negatively reinforced if that behavior allows the person to escape or avoid an aversive stimulus. Negative reinforcement is not used as frequently as positive reinforcement in the context of social skills training programs (Rathvon, 2008). The overall consensus is that the usage of reinforcement in a social skills training intervention is vital to produce the most desirable outcomes (Krasny, Williams, Provencal, & Ozonoff, 2003; Matson, Matson, & Rivet, 2007).

As a training technique, coaching provides natural opportunities for reinforcement, practice, and feedback. Coaching occurs when a trainer or peer interact with the target individual to teach or increase performance of a skill (DiSalvo & Oswald, 2002). Coaching, also referred to as prompting, is similar to modeling, but instead of observing a skill, the target individual is prompted to perform the skill and then receives constructive feedback. This feedback is essential to coaching, as it explicitly emphasizes the individual’s response to training and directly facilitates interaction between the coach and target individual (DiSalvo & Oswald, 2002). For best results, prompts used during coaching are gradually faded from specific to general (Bellini et al., 2009). Including fading techniques actively programs for generalization of skills (DuPaul & Eckert, 1994; Fox & McEvoy, 1993).

Consider the following example of a peer coaching a young adult with ASD to initiate a conversation in the bookstore.

Peer: Okay when we enter the bookstore who will you approach to ask about the book for class?
Young adult: I will ask the lady behind the counter. She works there.
Peer: What will you ask? Ask me.
Young adult: Do you have the book for Chemistry 101.
Peer: You need to greet her first before you ask the question. Try again.

The coaching technique would continue with feedback from the peer. The young adult would then enter the bookstore and initiate the conversation while the peer watched. Following the interaction, the peer coach would give feedback and praise based on the young adult’s performance.

Interfering Problem Behaviors

The acquisition and performance of social skills in young adults with ASD might be diminished by internalizing and/or externalizing problem behaviors. These behaviors, often related to the individual’s ability to self-regulate (Gumpel, 2007), serve as “blocks” to successful acquisition and performance of necessary social skills and must be addressed in order for a young adult’s true social ability to be unveiled.
The primary training techniques to address interfering problem behaviors are reductive methods. Reductive methods are often paired with direct instruction procedures, such as role play. Basically, reductive methods are operant techniques, designed to decrease or extinct the occurrence of inappropriate behaviors and increase the frequency of alternative, prosocial behaviors by manipulating environmental reinforcement (Elliott & Busse, 1991; Elliott & Gresham, 1993). Specifically, environmental reinforcement may include providing opportunities for the young adult with ASD to engage in desirable behaviors, praising prosocial behaviors, ignoring inappropriate behavior, and/or removing the young adult from an activity that is perceived uncomfortable. Reductive methods are typically time and resource intensive while requiring ongoing adaptation contingent on variables in the target environment.

For example, a young adult with ASD might have an externalizing behavior of tongue clicking when nervous. This behavior may inhibit his ability to start and maintain a conversation when meeting new peers. A peer might point out to the young adult that tongue clicking is distracting and interrupts the flow of conversation. It might be suggested that the young adult engage in an alternative behavior, such as chewing gum or sucking on a mint (since these activities are non-complementary to tongue clicking) while initiating a conversation. The peer would then provide opportunities for the young adult to practice a conversation, while verbally praising the young adult when there is a reduction or extinction of tongue clicking.

Implications for Practice

The previous sections of this paper provided an overview and practical examples of social skills training relevant to adolescent and young adults with ASD. The current section will review implications for practice that is useful for educators who want to use social skills training with adolescent and young adults with ASD. A best-practices approach requires the educator to critically review the skills targeted for training in terms of the five influential factors of social skill deficits (lack of social knowledge, insufficient practice or feedback, lack of cues or opportunities, lack of reinforcement, interfering problem behaviors). Afterwards, classify the social skill difficulty into acquisition or performance deficits with or without interfering problem behaviors. Acquisition deficits without problem behaviors are to be remediated through direct instruction methods (i.e. role play, modeling); whereas, acquisition deficits with problem behaviors require direct instructional methods accompanied by operant procedures (Gresham, 1995). In contrast, performance deficits without problem behaviors are to be addressed through indirect instructional methods (i.e. coaching); whereas, performance deficits with interfering problem behaviors require indirect instructional methods with operant techniques (Gresham, 1995). Regardless of the social skill deficit category, constructive feedback is necessary in all cases.

When examining the specific characteristics and training approaches to acquisition and performance deficits, an issue in programming arises. For example, training for acquisition deficits require approaches that rely more heavily on direct instruction. Thus, emphasis on a detached social skill training approach, such as a prepackaged program, in a separate setting outside the natural environment seems applicable whenever the individual requires explicit opportunity to learn target social skills. While these skills are being learned, significant adults and peers in the natural environment must put forth effort and reinforce target skills in order for them to be exhibited at an appropriate level. Hence, effective social skill training for acquisition deficits is to place significant emphasis on detached training while also facilitating integration into the natural setting. In contrast, training for performance deficits emphasize the manipulation of antecedents and consequences in the natural environment. Therefore, with young adults who exhibit performance deficits, a detached training approach might not necessarily be needed; however, it may be beneficial to include when addressing more severe cases, as appropriate social skills in the individual may need to be refreshed.

Acquisition and performance deficits for young adults with ASD require different modes of intervention. Researchers suggest that a greater number of individuals demonstrate performance deficits, rather than acquisition deficits, in regard to prosocial behavior (Gresham 1995, Gumpel, 2007). Hence, a common practice of treating all social skill deficits with a detached, prepackaged training program that emphasizes direct instruction seems faulty. This notion is particularly applicable to young adults with autism spectrum disorder (Mesibov & Shea, 2011) especially given that most prepackaged programs do not necessarily emphasize developmentally appropriate realistic situations for this population. In all cases, social skills training needs to involve the significant adults and peers in the natural environment.
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