



AUTISM SPECTRUM DISORDER SERIES

Creating Quality Educational Programs for Children with ASD

The importance of individualizing education programs for children with ASD and the importance of family involvement in those educational programs cannot be overstated. Programs will differ from child to child because of the uniqueness of ASD and the range of potential symptoms involved. There is consensus among researchers, practitioners, and educators that appropriate intervention begins early, usually by 30 months or earlier. Further, researchers and professionals have identified a number of strategies that are essential to implementing an effective program. The following are ten indicators in a quality educational program for children with ASD:

- 1.) Family involvement
- 2.) Comprehensive assessment of skills and deficits
- 3.) Plan development/clearly defined goals and objectives
- 4.) Effective teaching strategies
- 5.) Assessment of the intervention
- 6.) Structuring the environment
- 7.) Applying functional behavior assessment to problem behavior
- 8.) Transition
- 9.) Opportunities with peers
- 10.) Comprehensive team approach

1. Family Involvement

Parent and family involvement is an essential component of the student with ASD's educational program. It is important for professionals and parents to agree about how often and in what format ongoing communication can best take place. Although frustrations are often inevitable, it is important for staff and parents to keep communication as positive and free of blame as possible. Professionals need to present information in a clear fashion, avoiding the use of educational or medical terminology that can be intimidating and confusing to family members. Problems experienced by family or school members should be discussed as soon as they arise and before they get out of control. To accomplish this task, teachers should involve parents in problem solving and parents should not be afraid to ask questions about any aspect of their child's program.

2. Comprehensive Assessment of Skills and Deficits

A comprehensive assessment of a student's skills and abilities is the corner stone of a quality Individualized Family Service Plan (IFSP) for children under three and Individualized Education Program (IEP) for children/students ages three to 21. By accurately determining the student's skill, strength and deficit levels, appropriate goals and objectives can be written and accurate baselines determined.

Assessments may differ because of each child's/student's age and ability level. However, it is essential to consider the characteristics of ASD in completing each assessment. Thus in addition to assessment of pre-academic and academic skills, the assessment may also include pre-vocational and vocational skills, self-help and adaptive skills, communication, socialization, sensory regulation, motivation and reinforcement, behavior, fine and gross motor, play and leisure, as well as cognition.

Methods of assessment will be dependent upon individual student needs and ability level. It is important to realize that assessment is an on-going process. For each child, a formalized assessment of skills must be conducted at regular intervals. The on-going assessment results are then utilized to develop and change, as needed, the IFSP or IEP.

3. Plan Development/Clearly Defined Goals and Objectives

The key to teaching new skills, or improving emerging skills, is creating clearly defined IFSP outcomes or IEP goals and objectives that are developmentally appropriate, functional, based on the assessment results, the student's strengths and interests, and the individual characteristics of ASD. Clearly, a number of factors must be considered in developing the individualized goals and objectives for students with ASD. Although individual goals will vary for each child based on their age, diagnosis and ability level, research has revealed that effective educational programs for students with ASD include goals for these students addressing communication, social development, cognitive development, problem behaviors, sensory and motor development, and adaptive behavior.

In writing clearly defined outcomes or goal and objectives, Heflin and Simpson (1998) suggest the IFSP or IEP team should ask the following:

- Have meaningful outcomes been identified for the student?
- Were family members involved in identifying goals to be reinforced at home and school?
- Are the outcomes developmentally significant?
- Are the outcomes developmentally appropriate for the child?
- Have the characteristics of the ASD been considered?
- Do the goals promote educational gain or merely address the symptoms of the disorder?
- Do the goals allow for generalization and maintenance of the newly acquired skills?

A review of goals and objectives would not be complete without a discussion of the importance of programming for the generalization and maintenance of newly acquired skills. Generalization is the ability to demonstrate a learned behavior or skill in a new or novel way, setting, environment, time or date, or among different individuals and materials. Maintenance, on the

other hand, is the ability to demonstrate a skill over time. The ability to generalize and maintain meaningful skills that can be practiced and utilized within as well as outside of the classroom is essential to the success of each student's program. Meaningful tasks enhance the student's independence, give more opportunity for personal choice, and allow for more freedom in the community. Thus, the classroom teacher needs to work closely with the student's family as well as the support staff to ensure that new skills and desired behaviors can be practiced and reinforced in all settings, at home, at school, and in the community.

4. Effective Teaching Strategies

The following section provides practical, low-tech strategies for teaching students with ASD as well as a list of helpful resources. When choosing an intervention or teaching strategy, remember that no single approach is likely to be right for every child; rather, teachers may need to utilize a wide variety of teaching strategies for their students with ASD. Further, strategies may need to be modified to fit the developmental level and educational placement of the student. As each student is an individual, it is essential that teachers adapt teaching strategies to meet the student's individual interests, strengths, and needs. The intervention methods chosen should also allow the student to demonstrate progress toward his/her IFSP outcomes or IEP goals.

General Teaching Strategies

Programs that result in educational progress for students with ASD utilize motivational strategies and are typically introduced in a highly structured method in a one-to-one or small group format, with minimal distraction, attention to specific details of the skill, and a focus on consistency, repetition, and predictability.

For the student with ASD, verbal directions and unfamiliar materials often cause confusion that results in frustration and failure. As a result, many students with ASD become resistant to learning new skills. Therefore, it is necessary to identify and use teaching strategies that help motivate the student to learn. Many students with ASD have a limited repertoire of interests. Utilize these natural interests to capture the student's attention, to teach them in a meaningful way, and as a reward for completed work. For example, if your student has an interest in computers, find an interesting way to use computers to teach new skills, or use the computer as a reward for task completion of a non-preferred activity. Additional motivational strategies may include providing choices, changing the way in which instructions are given, modifying the appearance or presentation of a task, changing the length of a task, or adjusting the pacing of your instructional presentation.

When the student does not have a skill in his repertoire or does not demonstrate a skill often enough to provide evidence of mastery, a variety of teaching methods, such as discrete trials, pivotal response training, shaping, and prompting, may be employed to encourage the student to learn the new skill. A discrete trial is a structured teaching strategy, used to teach tasks or lessons that have been broken down into their simplest teachable components. It consists of four components: the instruction, the child's response, a consequence, and a brief pause. Pivotal response training utilizes the discrete trial paradigm in lessons that are child directed. It also encourages teachers to create lesson plans and to work within the student's preferred activities. Shaping, which is the reinforcement of successive approximations of the target behavior, is helpful when the student does not initially have the desired skill in her repertoire. Whereas, prompting provides students with extra help to achieve the desired response. Prompting strategies may include verbal prompts, modeling, physical or gesture prompts, and the use

positional cues. Prompts can be used at the same time as instruction, during the student's response to help minimize errors, or after the student's incorrect response to demonstrate the correct answer. Although prompting strategies can be helpful in teaching new skills, it is essential to fade prompts over time in order to avoid prompt dependency.

Once new skills are acquired, it is important to gradually fade the high levels of contextual support and systematically generalize the newly acquired behavior to more complex, natural environments and routines.

Communication Strategies

The communication abilities of students with ASD vary greatly, from students who are pre- or nonverbal to students with amazing expressive vocabularies, and from students who have very limited receptive abilities to those who can understand complex conversations and instructions.

For preverbal and nonverbal students with ASD, a communication program may focus on teaching the student to communicate through gestures, speech and/or an augmentative or alternative communication system. Alternative and augmentative communication systems such as sign language, visual symbol systems, communication boards, and voice output devices can provide an effective format for allowing students to communicate their wants and needs in any setting. Initiate augmentative and alternative communication options as soon as possible to ensure a method of reciprocal interaction and a system for teaching functional communication skills such as making requests, asking for help, protesting, and making choices. Early systems should be very functional and concrete. A typical progression for a visual-symbol communication system might be to move from a concrete to more abstract system. For example, starting with objects or actual photographs, moving next to colored photos and line drawings, and finally on to printed words.

Whether teaching a student to communicate through gestures, speech, or an augmentative or alternative communication system, new skills should generally be introduced in quiet, non-distracting environments, with generalization occurring in more natural contexts where natural cues and reinforcements are available to make the skills meaningful and spontaneous. Utilize student interests to help motivate the child to initiate and use the communication system. For example, if a student has a favorite toy or book, the teacher may keep the material just out of reach but within visual sight of the student; thus, encouraging the student to request the wanted item. Positively reinforce all communicative attempts and initiations.

In contrast to the pre- or non-verbal student, many students with ASD are able to utilize complex language. However, these students, along with their non-verbal peers, often demonstrate a significant impairment in pragmatic language. For example, students with ASD often struggle with such skills as having a social conversation; perceiving, understanding and using gestures, facial expressions, and body language; initiating, maintaining and closing conversations; as well as understanding and using social conventions and rituals. Pragmatic communication skills are an important component of the student's educational program effectively taught through direct instruction as well as through social skill instruction. In addition to difficulty with pragmatic language, students with ASD also have difficulty understanding and comprehending complex language.

When working with any student with ASD, a verbal or non-verbal student, it is important not to assume understanding. Teachers must closely monitor the student for receptive comprehension. Talk slowly and carefully. Some students will require simplified one or two-step directions, while others will require extra time to process spoken language. Clearly state your instructions

and directions, indicating what you expect the student to do, rather than telling the student what not to do. Additionally, use proximity, gestures, and visual supports to help enhance and clarify your spoken message.

While the content of language and communication instruction is similar for all children, the problems and strategies may differ. Work with your speech language pathologist to develop a comprehensive communication program.

Social Development Strategies

Most students with ASD want to have friends, fit in, and be an active member of the social world. However, they have difficulty reading, understanding, and responding to social cues. Social skills, such as having a social conversation; perceiving, understanding and using gestures, facial expressions, and body language; initiating, maintaining and closing conversations; as well as understanding and using social conventions and rituals, baffle students with ASD. Because of this deficit in social understanding, students with ASD often develop, and then act upon, false beliefs or misperceptions about the social world, leading them to inadvertently say or do things that irritate and offend other people. Fortunately, a variety of approaches have been demonstrated to successfully teach students with ASD to understand and succeed in their social world.

Helping students with ASD to develop social understanding requires both systematic instruction as well as opportunities to practice the skills within naturally occurring routines. Rules, social stories, role-playing and scripts, cue cards and checklists, coaching, modeling, and friendship groups are all effective strategies for systematically teaching social skills.

Many classroom teachers find it helpful to teach and post the classroom social rules to help students understand the expectations of the classroom or other social situation. In writing rules, be sure to provide concrete, positively stated rules that are easy for the student to see and understand. Be sure to include a statement regarding why the rule is important. For example, “we use an inside voice so that students can finish their work.” Including why a rule is important provides the social link that children with ASD often fail to make on their own. Review the rules on a regular basis and reward the child with positive contingencies for following the appropriate social rules. In addition to posting and reinforcing social rules, it is important to provide instruction around social situations that confuse the student.

Social stories, originally developed by Carol Gray, use visual instructional materials in the form of a short story to describe social situations that are confusing for the student. The goal of any social story is to share information at the student’s developmental level regarding what is occurring in a given situation and why. Once written, the social story is read to or by the student to teach the new social skill, and then later to cue the student to practice the new skill. The team should develop a schedule to introduce, review, and fade the story.

In addition to social stories, scripting and role-playing are also effective strategies for teaching new social skills. Before introducing a student to a new social situation, it is often helpful to provide the child/student with a script of what to say and then role-play the situation. For example, a teacher may write a script teaching a student how to ask other children to play with him. The teacher and student might then role-play the scenario practicing how to respond to a variety of different outcomes.

Once a student has begun to demonstrate success with social skills in a structured setting, it is essential to practice the skills within naturally occurring routines. Social skills and friendship

groups provide a context for students to both learn and practice social skills in a supportive and structured environment. Additionally, many teachers find it helpful to assign a peer mentor or friend to help the student with ASD practice and use social skills in the natural environment. Whether through groups, peer mentors or other systems, it is important to create opportunities for the student to successfully practice newfound social skills with peers and with other adults both in and out of the classroom.

Depending on training and background, a variety of professionals may have knowledge in teaching social development. Talk with your speech language pathologist, school counselor or psychologist, and special education teacher to develop a comprehensive social development program.

In addition to the previously mentioned teaching strategies, a number of individual treatment methodologies have been and continue to be developed for students with ASD. For a description of some of the most cited treatment methodologies, refer to the Interventions section of this series. Before choosing a teaching method or specific intervention strategy, Heflin and Simpson (1998) suggest that the IFSP or IEP team consider the following questions:

- Is the treatment published in peer-reviewed journals?
- Does the information regarding effectiveness come from a variety of sources?
- Are the studies validating effectiveness of high quality?
- Is empirical validation available, or does the majority of the support come from personal testimonials?
- Do the proponents claim that the option will help almost everyone with ASD?
- How does this treatment rate in terms of restrictiveness and intensity?
- Are there less restrictive/intensive alternatives that may be just as effective?
- Are there options that are better researched than this one?
- Does the treatment ignore the functional communication and socialization needs of the child?

5. Assessment of the Intervention

Prior to using any intervention, it is important to record a baseline of functioning in the particular area targeted for improvement. That is, it is important to assess or determine how the child is currently functioning in the area(s) of need. Once the goals and objectives are set, data are recorded to monitor progress in the program designed to improve the target area as well as to troubleshoot the program. The data is analyzed to determine if a lesson or educational intervention is effective and what changes in the lesson or educational intervention need to be made. The IFSP or IEP team must determine how often data will be recorded and the criterion for determining when a particular intervention is unsuccessful and must be abandoned. Ongoing assessment of the child's skill via the data collection system determines the next set of goals and objectives.

6. Structuring the Environment

Although all students thrive on routine and predictability, students with ASD are especially sensitive to changes in the environment or routine. Structuring the environment for students with ASD increases calm, attention, and responsiveness to learning. Although the level of structure needed for each student will vary based on their age, diagnosis and ability level, research has

revealed that effective educational programs for students with ASD have structured environments which include:

- Physical Structure
- Routines
- Visual Supports

Physical Structure

Physical structure refers to the way each area in the classroom or school is set up and organized. To the student with ASD who perceives the world differently or has unique sensory impairments, the school or classroom can be a confusing and overwhelming environment. Thus, the environment should be set up and organized with clear physical and visual boundaries. Boundaries such as carpets, bookcases, dividers, or study carrels are frames that visually identify an area, helping the student to understand where different activities take place and materials are stored. Consider providing a specific location for quiet activities and individual work activities. Once the various locations and boundaries are identified, signs, symbols, schedules, and choice boards can provide visual information on the rules and expectations of each area.

Additionally, when planning the physical structure of the classroom, it is important to consider and minimize visual and auditory distractions, such as bright lights and noises, e.g., bells, children's loud voices, chairs scraping on the floor, and the humming of overhead projectors, lights, or computers.

Routines

Students with ASD are more socially responsive and attentive to learning and the environment when information is presented in a highly predictable and routine manner. Conversely, students with ASD can become easily overwhelmed at even minimal changes in their daily schedule or routine. To build independent work skills and to create a comfortable environment in which the student is ready to learn, develop and teach within routines. For example, a routine for independent seatwork may be as simple as first we work, and then we take a break. While a routine for large group instruction might be first the teacher lectures, then the students do group practice problems, followed by independent seatwork, and then a break. Routines are also effective in teaching functional, leisure, and vocational skills. Of course, routines can become problematic if the student begins to demonstrate an obsession for sameness that results in negative behaviors when change occurs. To mitigate this stress, plan and prepare the student for potential changes in the routine by utilizing transition strategies, role playing, and visual supports systems.

Visual Supports

Students with ASD have strong visual skills. Visual organization of instruction and materials allow the student to utilize these visual learning strengths. Examples of helpful visual supports may include the use of activity schedules and calendars, posted rules, choice boards, and other organizational methods as appropriate for individual students.

Activity schedules are a set of pictures or words that cue a student to participate in an activity. Depending on the student's age and ability level, an activity schedule may be a three ring binder with only one activity on each page, it may be a partial or full day picture schedule, or it may be as complex as a day timer or palm pilot. Mini-schedules are a set of pictures or words that cue children to the individual steps involved in a complex task. For example, a student learning to wash her hands, may have a mini-schedule breaking down the task of hand washing into four

steps, including turning on the water, washing hands, turning off the water, and drying hands. Whereas, another student may use a written mini-schedule for social studies class, breaking down the subject period into its component parts of silent reading, note taking during lecture, and small group work. In addition to schedules, choice boards are another effective visual support.

Choice boards and menus are a set of pictures or words that visually communicate to the student with ASD what materials, rewards or tasks are available to choose from. Choice boards can be effectively utilized to present a menu of leisure activities, work or tasks, restaurant or food selection, work areas, places to visit, songs to sing, or any other activity that may be a part of the student's life or education. Using a choice board is a method to help alleviate frustration caused by being unable to communicate a request and also to help motivate a student by allowing them to have power over choosing which task or activity to participate in.

Other visual organizational methods may include organizing and labeling materials in the classroom or in the student's locker or book bag. Providing cue cards for rules, and checklists for tasks, homework or learning materials can be helpful as well.

7. Applying Functional Behavior Assessment to Problem Behavior

One goal of the educational program is to prevent the development of problem behaviors. As previously discussed, communication, social, academic and motivational strategies, along with environmental modifications, such as physical and visual organization are effective strategies to utilize in teaching students with ASD and thus serve to prevent many potential problem behaviors. If negative behaviors develop or continue, a functional behavior assessment is used to identify the purpose of the child's social-communicative behavior and the effect it has on others, based on interpretations of the child's intent and meaning. Once the functional behavior assessment is completed, an intervention is created. Effective interventions may include environmental modifications, curricular interventions, or instruction designed to match the student's identified needs. The intervention includes finding and teaching appropriate replacement behaviors to serve the same communicative function as the negative behavior originally exhibited. Positive behaviors are then reinforced to reduce the negative behaviors.

8. Transition

As discussed earlier, students with ASD often have difficulty with changes in the routine or the environment; this is especially true during unstructured periods, such as a planned or unplanned transitions. Consequently, students with ASD often need additional support and instruction in the skills that will allow the student to be as independent as possible during transitions, such as those occurring from:

- Activity to activity
- Home to school
- School to home
- One grade/school to the next grade/school
- School to post-school environments

When planning for a transition, it is important to prepare the student for upcoming changes. When transitioning from activity to activity, provide verbal and visual warnings before ending an activity and use visual supports, such as schedules, to inform the student as to which activity will occur next. Transition objects, which provide a visual cue as to where the student is going, are often helpful for students transitioning from one activity to another. For example, a student may carry a spoon as a reminder they are going to lunch.

When transitioning a student into a new grade, school, community, job or post-school environment, it is important to prepare the student for the upcoming change. Assess the new environment to determine what skills the student will need in order to be independent and successful and pre-teach those skills to the student. Talk with the student about the new environment, and if possible allow the student to visit the new environment. If a site-visit is not possible, consider videotaping, taking pictures, writing a social story, and compiling a list of expectations for the new environment. Additionally, meet with the staff members of the next setting to discuss the student's strengths and particular learning needs. Prepare the staff in the new setting by providing them with information on ASD, arrange to have them visit or learn about the student's current placement, and if possible arrange a meeting between the student and the new staff. In these ways, when typical and major life transitions are systematically addressed and planned for, students with ASD are more likely to experience success, have confidence, and be more independent, creating a positive experience for everyone involved.

9. Opportunities with Peers

Students with ASD have significant difficulty in social and communicative interactions with others. Consequently, it is important for students with ASD to have regular and planned interactions with peers. Through peer contact, students with ASD may observe more appropriate models for social behavior, have access to responsive social partners, and engage in more normalized social experiences than would occur in the company of peers with ASD alone. However, it is important to recognize that merely placing a student with ASD in the same place as typically developing peers does not ensure acquisition of social and communication skills. According to Wagner (1999), the most effective methods for helping students with ASD gain essential social and communicative skills include:

- Play or recreational activities that have been appropriately structured
- Peers receive training
- Teachers actively prompt and reinforce interactions between the student with ASD and peers

10. Comprehensive Team Approach

As discussed throughout this series, ASD are characterized by deficits in communication, behavior, and social skills. Consequently, an effective program for students with ASD requires the expertise and input of family members and staff from multiple disciplines trained to understand the implications of ASD. A comprehensive team approach includes parents and addresses personnel preparation issues, decision-making, and follow-up provisions. It includes related services personnel such as speech-language pathologists, psychologists, and/or occupational therapists to address social and language skills. Furthermore, a comprehensive team includes special and general education teachers and/or paraprofessionals to ensure progress in meeting the individualized educational goals, objectives, and outcomes of each student.

Working together, a comprehensive team ensures consistency of teaching and intervention techniques across individuals, lessons, and settings, increasing the potential for students with ASD to acquire, maintain, and generalize new skills and abilities.