# dodea

DEPARTMENT OF DEFENSE EDUCATION ACTIVITY

# Reaching and Teaching Children with Autism Spectrum Disorders

## A Best Practices Guide

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# Acknowledgments

Dear DoDEA Educators,

We are pleased to provide **Reaching and Teaching Students with Autism Spectrum Disorders:  A Best Practices Guide** to assist you in your work with students with Autism Spectrum Disorders (ASD).  The Guide was developed over a period of three years with input from teachers, parents, and related service personnel and a review of current literature in the field of ASD. The purpose of the Best Practices Guide is to help you better understand students with ASD and to provide you with information about appropriate educational strategies and programming including environmental structures, communication and social skill development, and behavioral management.  Most of the strategies presented in this guide are beneficial to a variety of students with special needs.

You will find information to share with parents and information that will help school administrators better understand your work.  The appendix contains more specific information that we hope you will find useful.

This Guide is a living document that can grow and change as parents and educators discover new information and as additional training is provided.  Your ideas and those of your colleagues can be added to expand and enrich the Guide.  We wish you success in teaching children with special needs including those with ASD.

Elizabeth Middlemiss
Associate Director for Education

# Overview

Children diagnosed with autism spectrum disorders (ASD) have unique needs in communication, social skills and other areas. Over the past several years the number of students identified with ASD have increased nation wide as well as in the DoDEA schools. In fact, ASD is no longer considered a low-incidence disorder. It is not clear why there has been an increase in the number of students with ASD, but better diagnostic procedures and effective early intervention services have been instrumental in identifying more children with characteristics related to ASD. The DoDEA, like other school systems, are concerned with providing appropriate services to this growing number of young people and their families, and with making current information about best practices available to educators and parents. This document was written in response to these concerns and provides a collection of the many promising practices that have emerged in recent years. The ideas and strategies in the Guide have proven effective in helping students with ASD and other learning problems to acquire knowledge, skills and the ability to work and learn with their peers.

The development of the Guide occurred over several years with input from a number of individuals including teachers, military personnel, developmental pediatricians, administrators and the National Advisory Panel. In 1999, the first Autism Summit was convened to identify system needs and to develop a strategic plan to meet the needs of students with ASD and their families. The Autism Summit was facilitated by the DoDEA special education staff and by NECTAS (National Early Childhood Technical Assistance Services) leaders and included two national experts and leaders in ASD, Dr. Marie Bristol-Powers and Dr. Ed Feinberg. As part of the strategic planning process, the group recommended conducting a system wide survey of the numbers of students with ASD enrolled in DoDEA and ascertaining the educational needs and recommendations of educators.

Subsequently, three products were developed by task groups to assist parents, educators and related service personnel. These are the Medical Clinical Pathways paper for physicians, a new autism site on the DoDEA Web Pages, and a Best Practices Guide, "Reaching and Teaching Children with Autism Spectrum Disorders," for educators. These products were reviewed and validated by experts in the field and by practitioners working with children with ASD.

The Best Practices Guide is designed to provide a framework for decision making and to guide teachers and families in identifying appropriate educational services for students with ASD. The document provides guiding principles and theoretical approaches to programming. Information and strategies are provided on key areas such as environmental structure, communication, social skill development, behavioral management and vocational life skills.

# Students with Autism Spectrum Disorders

## 1. What are the DoDEA Guiding Principles in educating children with ASD?

In order to maximize the development and learning of children with ASD in acquiring academic skills, social interaction abilities, functional communication, and appropriate behavioral functioning, the Autism Summit participants developed these guiding principles.

> ### In DoDEA schools, an appropriate instructional program for students with ASD is:
>
> ✓ *Based on current research and state-of-the-art practices;*
> ✓ *Developed for individual students on the basis of comprehensive and accurate assessments conducted by school and medical personnel;*
> ✓ *Determined by a multidisciplinary Case Study Committee (CSC) team that includes the student's parents and the student, when appropriate;*
> ✓ *Comprised of a variety of approaches and instructional strategies for program planning and intervention;*
> ✓ *Implemented by appropriately trained and competent school and medical personnel; and*
> ✓ *Evaluated by systematic measurement of student outcome-based progress.*

Implementing these principles requires that teachers learn some new ways of thinking about classroom environments and instructional strategies. These approaches not only benefit students with ASD, but also have been proven to improve achievement for all learners. The following pages will provide information about the theoretical and practical ways that you can implement these principles.

## 2. What is the Autism Spectrum Disorder (ASD)?

The term ASD is used in this Guide to refer to Pervasive Developmental Disorder not otherwise specified (PDD-NOS), Autism Disorder, and Asperger's Syndrome. This spectrum of disorders is characterized by severe and pervasive impairments in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests and activities (Diagnostic and Statistical Manual of Mental Disorders, DSM-IV). These disorders are grouped with Rett's Disorder and Childhood Disintegrative Disorder under the umbrella of Pervasive Developmental Delays.

Boys are 3-4 times more likely to be affected than girls are and it is thought that about one child in 500 may have some form of ASD. Many children with autism have other disabilities such as mental retardation, fine motor delays, seizure disorders, attention deficit hyperactivity and learning disabilities. The symptoms of ASD generally occur between 18 months and 3 years of age.

Causes of autism are not clearly understood, but research conducted by the National Institute of Health suggests that there may be a genetic based cause.

## 3. What are some of the characteristics of ASD? [1]

❑ **Impairment in social interaction**
Easily distractible and have difficulty in focusing
Difficulty with social reciprocity
Sensory processing is inconsistent, may be hypo or hypersensitive

❑ **Impairment in communication**
Delayed or absence of language and communication skills
Difficulty understanding abstract concepts

❑ **Restrictive, repetitive and stereotypic patterns of behavior**
Limited interest and/or focus

❑ **Inability to see the large picture while focusing on irrelevant details**
Difficulty identifying and sequencing the parts of a task

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[1] See Appendix A for additional information on the individual characteristics of ASD.

# Approaches to Programming for Students with
# Autism Spectrum Disorder

## Developmental Approach

A good way to begin thinking about children with ASD is to consider their developmental levels in much the same way you would for any typically developing child. Developmentally appropriate practices are the most important considerations in programming for younger children with ASD and functional skills become more of a focus for older students. Professionals and support personnel working with students with ASD should look for variations in developmental sequences across, and within, skill areas.

It is important to recognize "scatter" in abilities (i.e., some skill areas more strongly developed than others) and to examine the deficits in developmental skill areas (i.e., mastering some age- or higher-level skills while not consistently performing lower level or more basic skills). Children with ASD have non-typical learning profiles that require specific educational approaches to meet their individual needs.

Treatment methodology derived from the developmental approach provides a "blueprint" from which to select sequential skill objectives, according to the individual's unique profile of learning strengths and weaknesses. The Developmental Approach particularly lends itself to programming for social relationships and affective behaviors. Specific goals could involve establishing the developmental sequence of social and emotional skills.

## Applied Behavior Analysis (ABA)

The ABA principles, with their emphasis on highly structured and sequenced teaching strategies, and systematic, data-based evaluation methods, are especially suited to the goal of effective instruction for students with ASD. Intervention programming that employs an ABA approach attempts to (1). understand skill and behavior strengths and deficits, (2). to structure the learning environment, (3). systematically teach discrete, observable steps that define a skill, and (4). teach generalization and maintenance of newly learned skills.

1. *What does effective ABA include?*
   ABA includes direct teaching within a formal, systematic framework. It is based on principles of learning derived from laboratory work that is data based and includes differential reinforcement, task analysis, and continuous monitoring of performance.

   The purpose of the ABA approach is to increase or decrease a given behavior, depending on the goal. These techniques are useful for addressing behavioral difficulties (e.g., decreasing hitting others and increasing the individual's ability to follow a predictable visual schedule), as well as skill deficits (e.g., increasing length of sustained eye contact).

2. *What strategies are associated with ABA?*
   - ❑ Prompting
   - ❑ Shaping
   - ❑ Fading
   - ❑ Chaining
   - ❑ Modeling

3. *What are types of prompts used in ABA?*
   - ❑ Verbal/vocal
   - ❑ Modeling/demonstration
   - ❑ Visual
   - ❑ Positional
   - ❑ Physical
   - ❑ Expectant waiting

4. *What is shaping in ABA?*
   Shaping begins with any approximation of the response and reinforces small increments or steps toward acquisition of the target behavior. Increments are called *"successive"* approximation. Guidelines for shaping include clearly defined goals, observation in a natural setting to set the start point, clear steps that are neither too large or too small, and fading prompts to set the stage for the next step.

5. *What is meant by chaining?*
   Chaining may be backward by beginning with the final link and proceeding in reverse. It may also be forward by beginning, teaching the first link in the chain, and guiding the child through the rest of the steps.

6. *How is modeling done?*
   Modeling may be verbal or nonverbal, individual actions or a sequence of actions, actual or pictorial or multi-person.

7. *What is involved in Task Analysis?*
   - ❑ Decide what skill you wish to teach
   - ❑ Break the skill into component parts
   - ❑ Decide if components are sequential or simultaneous
   - ❑ Map out how you will teach the skills

8. *What kinds of feedback should be used?*
   - ❑ Positive reinforcement increases the likelihood of a behavior
   - ❑ Negative reinforcement increases the likelihood of a behavior
   - ❑ Punishment decreases the likelihood of a behavior

9. *What reinforcers work?*
   - ❑ Primary reinforcers include food and sensory or compulsive drive
   - ❑ Secondary reinforcers include praise, social routines, intense interests, and need for closure

*10. What are the features of Discrete Trial Training?*
- ❑ Discriminative stimuli
- ❑ Task analysis
- ❑ Every trial has a clear beginning and end
- ❑ Each trial is identical
- ❑ Instruction is repetitive
- ❑ Cue are exaggerated
- ❑ Each trial has 4 parts: presentation of instruction, child response, consequences and a short pause.

It is important to realize that "Applied Behavior Analysis (ABA)" is a broad approach for facilitating behavior change. One specific training method within ABA is referred to as "Discrete Trial Training (DTT)" and can be effective when applied to a particular skills and behavior. Some instructional objectives lend themselves quite well to a DTT approach. For example, a receptive labeling task (e.g., "Show me the [noun]") would be quite easily and appropriately taught through a 10-trial session in which the trial is identically presented and practiced with consequences for successful trials. The next level of planning would involve consideration of specific skills that should be taught through discrete trial training.

## Structured Teaching[2]

Structured teaching is a way to develop teaching strategies and to change the environment to make the world more meaningful for children with special needs. These structures can be utilized at all developmental levels and do not limit the curriculum. They are simply a component of the curriculum.

Students with autism benefit from:

1. Physical structures
   - ❑ Clear physical and visual boundaries
   - ❑ Minimal visual and auditory distractions
   - ❑ Identified teaching areas including snack, play, transition and work areas

2. Daily schedule
   - ❑ Daily schedules visually tell the student in a way that he can understand what activities will occur and in what sequence.
   - ❑ Each student should have a way to indicate when an activity is finished on the schedule.

3. Individual work systems
   - ❑ A systematic way for the student to receive and understand information
   - ❑ A meaningful routine that answers these questions for the student
     *What work?*       *How much work?*
     *When is it finished?*       *What happens next?*

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[2] TEACCH

4. Visual structures
   - ❑ Teach the student to look for the visual instructions that give meaning to the task
   - ❑ Shows student what to do with materials
   - ❑ Includes both visual instructions and visual organizations

*What are the reasons for using structured teaching?*
- ❑ Use the child's visual strengths to help him focus on the relevant information in his environment
- ❑ Adapts the environment to make it more orderly and predictable
- ❑ Incorporates routines and makes things more familiar
- ❑ Emphasizes "finished" and teaches the concept of "finished"
- ❑ Focuses on the development of independent skills

An integral part of the ASD student's program planning should include behavioral techniques for structuring the environment and setting up tasks. Ideas for this level of programming are based on the structured teaching strategies developed and refined by the Treatment and Education of Autistic and related Communication handicapped Children (TEACCH) program.

## Psychotherapies

Mental health providers can play a valuable role in a comprehensive program for a student with ASD. For example, mental health professionals within the schools, communities and medical facilities should provide support for families, particularly for families whose child has recently received a diagnosis of ASD. Mental health providers can also consult with teachers, facilitate social skills groups for students, and assist with in-service training for school faculty and community personnel. Although it has been well-documented in the research literature that individualized psychotherapy (e.g., "talk therapy") is not particularly effective with children with ASD, therapeutic strategies can certainly be geared toward behavioral change and skill-building.

## Sensorimotor Therapies

In recent years sensory integration theory has provided valuable information about how individuals with ASD process and respond to incoming sensory stimulation. There is now clear evidence that sensory integration difficulties can significantly influence an individual's behavioral functioning, and that activities which address sensory deficits or excesses can assist students with ASD in developing independent functioning. For example, inclusion of stimulatory and regulatory activities such as rhythmic rocking, sequential body pressure and joint compression input, swinging, jumping, moving to music, and swimming may be beneficial strategies for encouraging attention to task and calming children.

## Play

Play activities have long been included in interventions for children with various psychological and medical disorders. The literature on educational practices has documented the role of play activities as an effective tool for teaching children diagnosed with ASD. The

TEACCH program, for example, has acknowledged that typical play behaviors are very difficult for many children with ASD to learn independently or vicariously. However, structured teaching of play activities fits with the adage "play is work, and work is play" for children with ASD.

Play should be used to teach appropriate manipulation of a variety of play and leisure items. Play activities can gradually increase the child's tolerance for playing alongside and cooperatively with others. These play activities can be conducted in individualized instructional settings, and through small play groups. Play training can also be instrumental in facilitating social, language, and cognitive development in non-threatening and natural environments.

> *NOTE: Traditional, psychoanalytically oriented play therapy geared to help the child develop more effective coping strategies, is not an effective strategy for children with autism.*

Development of individual play goals, and even a play group, for children diagnosed with a ASD should involve consideration of each child's level of functioning, and unique needs. The group activities should be carefully planned with specific target goals and structured to provide each child with the opportunity to develop or enhance new skills.

## Best Practices in Programs for Students with ASD

The following recommendations for best instructional practices for individuals with ASD include all of the philosophical and practical approaches discussed in the previous setting and are compatible with the Guiding Principles.

### Appropriate Pupil-Teacher Ratio

Depending on the needs of students, and the setting in which they are receiving instruction, the appropriate ratio of adults to students must be considered. Educational services may take place in individualized, small group and large group settings. For this reason, adult supervision needs may be different in these various settings.

It is typically recommended that class sizes are limited for students who participate in a self-contained setting for students with moderate to severe autism, so that individualized programming can be facilitated. By setting up programs in a structured and functional manner, staff (paraprofessionals and teachers) can be used effectively.

Students who are functioning high enough to participate in regular education programs typically require some individualized adult supervision in order to benefit from the regular curriculum. This support may differ depending on the student's skills and on the particular activities. Support for students with ASD can be provided through collaborative planning and through co-teaching, classroom support, and/or consultation, with either the special education teachers or the paraprofessionals as service providers.

The amount of supervision required depends on the ability of the student to manage the language, social, and cognitive demands of the classroom situation. It is likely that a kindergarten student will require a higher level of support, in order to get started in the regular education curriculum. Support may be reduced in $1^{st}$ and $2^{nd}$ grade because teaching strategies are still concrete, visual, and rote. Third grade students often need more support again, as instruction becomes more abstract and conceptual. At this point in their educational careers, some students may require more time in a pull-out resource situation, rather than additional support in the regular education program. The case study committee (CSC) should make the determination of the student's need for support based on that child's individual needs.

School personnel who may lead, assist and support educational programs for students with ASD include:
- General education teachers to instruct students with ASD on working and learning with their peers
- School psychologists and counselors to conduct social skills groups and help families cope with the challenges of ASD
- Speech-language therapist to work on pragmatic language and generalization skills
- Career work experience teachers to provide job training opportunities and support for positive vocational behaviors
- Special education teacher develops and implements the student's Individualized Education Program (IEP)

- Paraprofessionals to support the special education program

**Intensity of Services**

The Case Study Committee (CSC) including parents and all potential service providers are responsible for making appropriate, comprehensive determinations about intensity of services required for a student with ASD. To make these determinations, the CSC should consider the:

- ❑ Severity of the student's deficits
- ❑ Amount of time the student will receive special education support
- ❑ Various types of instructional support needed
- ❑ Way in which the student will learn to generalize across settings and persons, including home programming.

In situations in which three or more students require similar intensive services (e.g., more than 60% of the instructional day with pull-out special education services), an appropriate decision may be to cluster the students for all or part of their school days in a self-contained class setting. Students would then receive more intensive instruction to meet their specific educational and therapeutic needs in a small group. The students could be involved in selected mainstream activities, as they are ready to participate with other children in less restrictive settings.

The programming intensity for preschool-aged children with autism ASD should be flexible. It is frequently recommended and upheld by courts that young students with moderate-severe disabilities receive a minimum of 20 hours per week of special education. The primary consideration should be how to best individualize the instructional program to meet each child's needs. Clearly, one size does not fit all when programming for young children with ASD. Student data must be methodically collected and reviewed so that appropriate intensity of services can be determined and progress monitored.

Teachers should utilize a variety of instructional strategies to teach children with autism and related disorders. Thus, the program for a preschooler might include elements of:

- ❑ Individualized, discrete trial training to work on readiness skills
- ❑ Structured teaching to learn an individualized schedule
- ❑ Picture communication system to facilitate expressing needs and responding to social interaction
- ❑ Small group training to practice social and play skills
- ❑ Parent-child training to work on affective responses

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*NOTE: The CSC follows the DoDEA Extended School Year (ESY) guidance in planning for ESY for students with ASD and this should be considered in determining intensity of service needs.*

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**Transition of Children from Early Intervention (EI) to School Services**

Transition from early intervention (birth to 3 years) services, to preschool programs is a very significant period in the lives of families with children with ASD.  Parents' concerns should be carefully considered in the transition process.  The EI providers are typically the first persons to help parents work through some of the emotional issues involved in learning about and dealing with the diagnosis of autism or PDD which are significant disorders regardless of the severity of problems.  Leaving the EI support personnel and going on to new settings and professionals is a significant and often difficult step for parents.  School programming does not typically include the home-based contact that EI personnel provide to children and families.  Parents may need time to adjust to the differences between home and school programs.

Planning can help make this process easier for parents, children and educators.  It is helpful to provide opportunities for school personnel and parents to discuss how the programs will be designed and implemented to best meet the child's needs.  The DoDEA procedural steps in transitioning from EI to school services should be used to help facilitate an effective transition process that can build positive, rewarding relationships between families and schools.

**Collaboration Among Agencies and Providers**

There may be a number of different agencies and personnel involved in evaluating and treating children with ASD.  For this reason, effective sharing of information among all of the players is critical.  In DoDEA schools, Case Study Committee meetings provide the forum for sharing information, reviewing assessment and planning the Individualized Education Program (IEP) for the child.

**Parents and Families**

Parents are their children's first, best teachers.  They must be an integral part of the assessment and planning team for their children with ASD.  Parents provide invaluable data about the child that may not otherwise be observed or known.  No one can better explain what motivates, interests and comforts a child than his or her parents and this information is key to teacher's planning for the child.  Further, parents are critical in implementing educational and developmental interventions in the home environment.  Parent involvement and commitment enhances the probability that the skills their child learned at school will be generalized to home and other environments.

Teachers have a key role in creating partnerships with parents.  This is one of the most important and beneficial relationships in the educational process.

**Resource Personnel**

**Educational and Developmental Intervention Services (EDIS):**
    The EDIS Clinic is responsible for the medically related service providers who work with DoDDS. DDESS schools work with a variety of community-based medical providers. An EDIS Point of Contact (POC) or Service Coordinator for each child is typically assigned following the review of the school's referral questions. The coordinator receives and distributes relevant information among the EDIS service providers, as well as to the school and other departments within the medical facility (when involved), and to the parents. Specific roles of EDIS team members are briefly reviewed:

*Pediatrician/Developmental Pediatrician*
This provider is integrally involved in the assessment process, in order to determine appropriate diagnosis and to identify necessary medical tests and/or follow-up needs. Generally, involvement beyond the initial diagnostic phase occurs every six months, to monitor routine medical issues such as growth, nutritional status, and sleep patterns. Medical providers elicit information from the family and/or school as part of this ongoing evaluation. Results and findings for these routine visits are shared with the EDIS Service Coordinator, the parents, other internal medical providers, and the school personnel as appropriate.

*Mental Health Providers (Psychiatrist, Psychologist, Social Workers)*
Mental health providers also play an integral role in the diagnostic process. Following the school's eligibility determination, these EDIS providers might also be indicated on IEPs of children with ASD to deliver services related to mental health and family issues. Such providers routinely obtain relevant data from the school, medical providers, and family to help guide in intervention services for the child. EDIS mental health providers reciprocally provide information back to the school, although confidentiality issues must be considered if requested by the family. Mental health therapists formally review the child's progress on goals and objectives at the annual IEP review, and other scheduled reviews.

*Occupational and Physical Therapists*
These therapists provide evaluation and treatment services as indicated in the assessment referral and IEP, respectively. Information about the child's functioning relative to these services are obtained and shared reciprocally. Occupational and Physical Therapists formally review progress at the annual IEP and other times as needed.

**DoDEA Resource Personnel:**
    Personnel positions vary within and among DoDDS and DDESS schools, but a number of personnel are available to assist parents and educators. General statements and/or bullets about roles and collaboration activities can be outlined as follows:

*DSO Special Education Coordinator*
❑ provides guidance on requirements of DoD Instruction 1342.12
❑ trains staff on special education/EDIS procedures
❑ overseas all special education programs
❑ assists in problem solving

*DoDEA Area Autism Consultant*
- provides expertise on assessment, educational planning and strategies, and programming for students with autism
- communicates with all agencies (family, school, community providers)
- helps coordinate services for students with PDD and autism
- reviews assessment reports and current programs and services
- offers appropriate recommendations for program modifications as needed
- meets with multidisciplinary CSC teams as requested

*CSC Chairperson*
During the assessment process, the CSC Chairperson serves as the Case Manager for the child. This individual provides EDIS with all relevant documents to assist in the evaluation of the child, as specified in DoDEA Instructions. The CSC Chairperson also serves as the POC for receiving reports and other medical information on the child, in order to prepare for the eligibility determination meeting.

*Special Educators/Case Manager (after eligibility)*
If the child is determined eligible to receive special education services, a Case Manager is assigned. This individual is typically the primary Service Provider for the child, as indicated on the IEP. The Case Manager is responsible for coordinating subsequent communication and CSC meetings to address ongoing or new issues related to the child's educational and developmental functioning. As with the CSC Chairperson during the assessment phase, the Case Manager gathers and disseminates information from school personnel, EDIS, and the family, relevant to the child's program. Typically the Case Manager also coordinates services provided to a student by regular educators and paraprofessionals.

*School Nurse*
The School Nurse is the POC between the school and the EDIS/MTF in cases that involve administering medication or ongoing medical issues that require monitoring within the school. The School Nurse engages in ongoing dialogue with parents and the MTF providers, and can share medical information relevant to the child's educational functioning with school providers, if the parents give their consent.

*Teacher of the Emotionally Impaired (Behavior Management Specialist)*
This provider can deliver direct services and/or consultation on behavioral/emotional issues. The Behavior Management Specialist adheres to the same guidelines as special education teachers, regarding collaborative networking relevant to the child's educational and developmental functioning.

*School Psychologist*
School Psychologists provide evaluation services regarding intellectual functioning and learning styles, as well as social, emotional, and behavioral issues. These providers share reports of their assessments and observations with the CSC team, and can be included on the IEP for direct services or consultation as needed. The School Psychologist adheres to the

same guidelines as special education teachers, regarding collaborative networking relevant to the child's educational and developmental functioning.

### *School Counselors*
School Counselors provide direct service and consultation regarding social, emotional, and behavioral issues. School Counselors share reports of their observations as well as maintain a reciprocal communication with all relevant parties (i.e. EDIS, families, and other educators).

# Arranging the Learning Environment

The physical layout of the classroom is an important consideration when planning learning experiences for students with ASD. Even the arrangement of the classroom furniture can help or hinder a student's independent functioning and his recognition and compliance with rules and limits. Many students have organizational problems, not knowing where to be and how to get there by the most direct route. Because of receptive language difficulties, they often do not understand directions or rules. The well-structured room provides the visual cues they need to understand their environment.

Students can be easily and highly distracted by a variety of things in the environment and then become focused on irrelevant details. Their focus of attention may be compared to that of a flashlight on "high beam" focusing intensely on one spot. For example, when changing activities, a student may focus his attention to the pattern in the tile floor and walk around and around the room watching the pattern instead of transitioning from the reading table to his desk.

Therefore, our challenge, as educators, is to provide students like this with a highly structured environment that can be easily understood. The environment should show him where activities are to take place and how to get to the activity. Environmental distracters should be minimized to ensure a child's ability to focus on the relevant instructional activities and materials. A structured environment allows the teacher to focus the child on learning thereby increasing his range of focus.

## Physical Structure

The physical structure of the classroom refers to the way the furniture and materials are arranged to add meaning and context to an area or environment. The home has rooms for specific activities with the furniture and walls clearly defining what will take place there. For example, it is understood that a refrigerator and stove would be located in the kitchen and that eating takes place there. In the classroom, there needs to be specific areas for learning specific tasks, boundaries should be clearly marked, and materials should be easily accessible.

The degree of structure required for each student is dependent upon his level of functioning. Lower functioning students and those with less developed self-control will need more structure, more limits, clearer boundaries, and more visual cues than higher functioning students.

1.  *What are the key concepts to keep in mind when structuring the classroom?*

    a.  *Clear Physical and Visual Boundaries*
        Physical boundaries help the student understand where each area begins and ends. Boundaries establish context and segment the environment so that each activity is clearly associated with a particular physical space. Rugs, bookshelves, partitions, tape on the floor, and the arrangement of tables can be used to make clear boundaries. For example, the carpeted area may be the leisure area. The workshop area may be outlined by shelves full of materials and 2-3 long work tables. When a student gets workshop materials, he

then sits in that area to work. A teacher may use a small throw rug in front of the sink to show students where to stand when they are washing their hands or washing the dishes



b. *Minimize Visual and Auditory Distractions*
   Many children are unable to independently filter out multiple environmental distracters. Therefore, the educator needs to assist these students by limiting classroom distractions. For example, when participating in a group table activity, a child with autism may need to be seated at the end of the table so that the distracters (other students) are limited to only one side.

c. *Develop Basic Teaching Areas*
   Group Area: This is where small or large group activities take place.  This can be a small group table area eating snacks and reading, or it can be the large group circle time area.

   Play Area: There can be multiple play areas such as a block area or toy center.  For older students this play area can be referred to as a leisure area.

   Transition Area: This is where the students' individual daily schedules are located.  This can be an individual student's desk, a table or a wall.

   Work Areas:
   - One-to-one teaching area: used for direct teacher instruction.
   - Independent work area: used for independent work activities.  This is not an area for teacher instruction time.  The work presented to a student should be work that he knows how to complete independently.

   In the typical preschool classroom for children with disabilities (PSCD), the room arrangement may be based on the strategies outlined in the Creative Curriculum.  The child with ASD can function well in this environment with minimal changes.  The most notable change would be the addition of an individual teaching and child work area.

The following are questions which teachers should consider when setting up the teaching areas:

- ✓ Is space provided for individual and group work?
- ✓ Are work areas located in least distractable settings?
- ✓ Are work areas marked so that a student can find his own way?
- ✓ Are there consistent work areas for those students who need them?
- ✓ Does the teacher have easy visual access to all work areas?
- ✓ Are there places for students to put finished work?
- ✓ Are work materials in a centralized area and close to work areas?
- ✓ Are a student's materials easily accessible and clearly marked for him or her?
- ✓ Are play or leisure areas as large as possible? Are they away from exits?
- ✓ Are the children away from areas and materials that students should not have access to during free time?
- ✓ Are boundaries of the areas clear?
- ✓ Can the teacher observe the area from all other areas of the room?
- ✓ Are the shelves in the play or leisure area cluttered with toys and games that are broken or no one ever uses?

## Schedules

Schedules are a communication tool that should be a part of the classroom structure to help children with ASD. Schedules tell children how to move through the physical spaces we have created in a purposeful, calm and independent manner. Because of their receptive language difficulties it is difficult for students with ASD to understand verbal directions such as where to go and what to do. Also, many students have problems with sequential memory and organization of time. The schedule helps them to understand where to go, helps organize information, and predicts daily/weekly events. This predictable scheduling decreases student anxiety about not knowing what will happen next. Not only does the schedule list the sequence of daily activities, it can aid the students in transitioning independently between activities. Student schedules tell them where to go next. Moreover, students with low initiative may be more motivated to complete a difficult task if they see that it will be followed by a more enjoyable task or activity.

There are usually two types of schedules being used simultaneously in classrooms; the *overall classroom* schedule and the *individual student's* schedules.

Individual schedules are created on a continuum. The most basic is a teacher-directed object schedule and the highest level is an all-day written plan that the student follows independently. For example, Susie, a low-functioning nonverbal girl is handed a ball (teacher-directed object schedule) to signify that it is time to transition to outside play. This same ball is used every time she transitions to outside play. Similarly, when it is time to transition to snack she is handed a red "sippy"cup. This same red cup is used every time she transitions to snack. Robert, on the other hand, has a basic sight word vocabulary and can discriminate between photographs. He uses a picture-word card schedule; each card has the written word label underneath the picture that signifies a scheduled activity.

Schedule can range from an all day, part day, or one activity at a time schedule. Based upon the individual student, schedules may be arranged in a top to bottom or left to right orientation.  They may also be portable with children carrying them from class to class in a binder, clipboard, etc.  Or, they may be stationary and located at the transition area (see TRANSITIONS section) on a wall, table, or desk in the classroom.

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*Helpful Hint! The child must be able to understand and use his schedule independently even on his worst day! When considering setting up the schedule, the goal is for the student to independently use the schedule, NOT to learn a new skill!*

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The following are the 4 basic types of schedules.

a. *Object:*
   The object must have meaning for the student.  In our example, Susie used her red "sippy" cup to signify snack.  The same red "sippy" cup should be used each time she transitions to snack.  If painting is a favorite activity for a child, a paintbrush can be used to represent art. The same paintbrush should be used every time the child transitions to art.

b. *Picture card:*
   This may be an actual photograph, computer generated line drawn picture, package label, or hand drawn illustration depending on the child's interests and understanding.

c. *Picture combined with written word:*
   This is a picture card with the written label of the picture on the card.

d. *Written word:*
      This is written in words or sentences.  The student should have the ability to manipulate the schedule to indicate task completion, such as checking off, crossing out, or turning over.

## Transitions

Changes in routines and normal daily transitions result in behavior problems for children with ASD.  In general they tend to be very rigid and resistant to change.  Frustration often occurs when they do not understand what activity is going to take place, how long is it going to take place and what happens when the activity is finished.  Therefore, educators need a tool to help the children to understand and plan for change and transitions; the schedule is this tool.  Once a child understands how to use a schedule, changes and transitions become predictable.  This reduces daily stress levels and keeps the child focused on learning.

The most basic way to transition a child between activities is to use a teacher-directed object or picture card schedule.  The teacher controls the child's schedule by handing her the transitional object/picture card that represents the next scheduled activity.  She verbally says "time for snack" as she hands a red "sippy" cup to Susie or a picture of a plate to Joey.  The student then uses the object/picture card as his cue to go to the assigned area and then he matches it to an identical object/picture card at the designated area.

Some children may be able to independently check their own schedule that is located in a transition area (this is the area of the room where the child's schedule is posted).  It can be on a table, desk or wall.  There can be more than one student using the same area.  Their schedules must be clearly marked.  Each student must be able to identify his individual schedule.

The teacher sends a student to check his schedule using a cue card.  This can be a card with the student's name, a photograph of the child, or even a card with a sticker of the student's favorite cartoon character (i.e. Pokeman).  The teacher says "check your schedule" while handing the student his schedule cue card.

The cue card is the visual prompt to get the child to his schedule.  He matches the cue card to an identical card located at his schedule.  This matching routine helps to student to understand that he is in the right place.  The student then removes the card that designates the next scheduled activity.  He takes that card and matches it to an identical card at the area of the next scheduled activity.  Again, the schedule card tells the student where he is to go and the matching routine reinforces the fact that the student is in the correct area.

Some students with ASD are integrated into the general education classroom.  If this is the case, the child's schedule may be attached to the outside of his assignment/homework notebook so that it is portable.  He can carry it as he changes classes.  When he leaves a class he can check off or cross out the completed schedule activity and then transition to the next class.

A schedule is used to help teach flexibility. In the following example, Billy's schedule stays the same with centers followed by an academic activity. The academic activity can change from day to day but the structure of the schedule (an academic activity) remains constant. Reading takes place after a gross motor activity. However, the person who teaches reading can change. A writing activity takes place after reading and lunch follows writing. This is just one way to use the schedule to teach children how to engage when changes do occur. As you can see, the daily schedule remains the same while the academic activity changes. This way, the ability to handle and adapt to change is being taught or re-enforced daily.

| Billy's Monday Schedule | Billy's Tuesday Schedule |
|---|---|
| Centers in room 211 | Centers in room 211 |
| Science with Ms. Field | Math with Mr. Binder |
| Outside play | Outside play |
| Reading with Mr. Downs<br>*Bring Harry Potter Book* | Reading with Ms. Lowe<br>*Bring Literacy Place Book* |
| Journal | Poetry Writing |
| Lunch | Lunch |

## Work Systems

The child's individual work system answers 4 key questions.
1. What work do I have to do?
2. How much work do I have to do?
3. When am I finished?
4. What happens next?

Once the child has learned the steps, the physical structure and visual cues used in this system will answer the questions for the child. Just by looking at the work system the child should understand what is expected of him and for how long. He will know what to expect when he is completed with his work. This may be a favorite toy, activity (go for a walk), or class (Music). The rewarding activity or the "what's next?" should be child-specific according to his interests.

Work systems move from a left to right or top to bottom orientation. There can be a mini-schedule (either written or picture) that tells the student what work he has to do and how much work he has to do. If a child cannot follow a schedule for his work area, his work system can answer the 4 key questions through the visual structure alone. This is shown in the following example. The work to be done is displayed on the left of the student's work area. He can see what work and how much work he has to do as soon as he walks into his work area. The finished work is placed in a "finished" basket to the right of the work area when it is completed.

He understands that his work is completed when it is in the basket. The visual cue that sends him to his next activity (a picture/object of the next scheduled activity) can be attached to his desk so that he can predict what happens when all his of work is completed.



Again, it is very important to remember that these work systems must be individualized. The intensity of structure and type of system depends upon each student's level of functioning, needs and interests.

**Types of Work Systems**

1. *Combined schedule and work system*

John's Schedule:

__ unpack bag
__ Break
__ Math with Mrs. Klein
__ Spanish with Mr. Gonzalez
__ Independent work with Mrs. Steven's class
  __ Data entry
  __ Journal
  __ Office
  __ Break
__ Lunch
__ PE
__ Independent work with Mr. Carl's class
  __ Read pgs. 15-16 in Health book
  __ Answer questions 1, 2, and 3 on page
   17 in Health book
  __ Break
__ Pack bag
__ Line up for bus

This schedule on the previous page is for Billy's friend John. John is integrated into the general education 3rd grade. He is functioning at grade level for most of his subjects. However, he does need some structure in his day so that he is in the right class and remains on task. John's classmates complete the same activities. However, he requires clarification and visual cues to keep him on track.

John's class schedule is written in black. The work that he is to do independently is written in green. This clarifies what he needs to do (data entry, journal, office, and break), how much he needs to do (all of the activities in green), when he is finished (all of the activities will be checked off), and what happens next (Lunch).

## 2. *Separate schedule and work system*

The student has a schedule that he follows, checking off each activity when it is completed. However, when completing independent work at his desk there is a separate mini-schedule attached to it. This mini-schedule or work system tells him what work to do, how much work to do, when he is finished and what is next.

| | |
|---|---|
| **Journal** | ☐ |
| **Math Sheet** | ☐ |
| **Break** | ☐ |

Break Ideas:
- Computer
- Read Sports Illustrated
- Pokeman puzzle

| | |
|---|---|
| **Give homework to Mrs. E** | ☐ |
| **Give this paper to Mrs. B** | ☐ |
| **Color duck sheet** | ☐ |
| **Independent work at desk** | ☐ |
| **Back to Mrs. E's class** | ☐ |

In this example, Billy has a separate schedule and work system. He uses the schedule on the left to transition from Mrs. E's class to Mrs. B's class. When he gets to Mrs. B's class, Mrs. B writes in the activities he is to do that day in her class (the words in italics). Upon completion of his independent work, the schedule sends him back to Mrs. E's room. The work system (list of activities to the left of the schedule) is attached to Billy's desk. It tells him what work to do (Journal, Math sheet and Break), how much work (everything on the paper), when he is finished (all the boxes will be checked off), and what is next (work then break). Mrs. B will tell Billy when the break is finished. When Billy checks his schedule after break, he will see that he returns to Mrs. E's classroom.

Billy's friend Sara is integrated into the same class. Like Billy, she uses a separate schedule and work system. However, her work system is set up in a separate area of the highly

structured environment.  Sara is very easily distracted.  She needs self-contained tasks in a highly structured environment.  Sara is not reading at grade level and some of her reading and math assignments are modified.  Because of this she tends to be very interested in what her classmates are doing.  She easily loses track of what she is doing.  So, when she is sent to work independently, she goes to a separate area of the room that is highly structured.  The room divider helps to limit the environmental distracters.



The 4 key questions are answered in the way that the work system is set up.  Sara can understand through the visual structure at her work area what she is to do (the work in the bins to the left of her desk), how much she has to do (all 4 of the bins), when she is finished (she checks off the work on her work schedule attached to her desk), and what is next (it is the last item on her written work schedule).  You can see, too, that Sara's interest in robots was used to keep her motivated and focused.  There is a robot on her schedule and work bins.

*3.  Matching*

This system is used for students who are not reading.  Their work schedule may consist of matching a number card, color card, or interest card to the corresponding work bins.
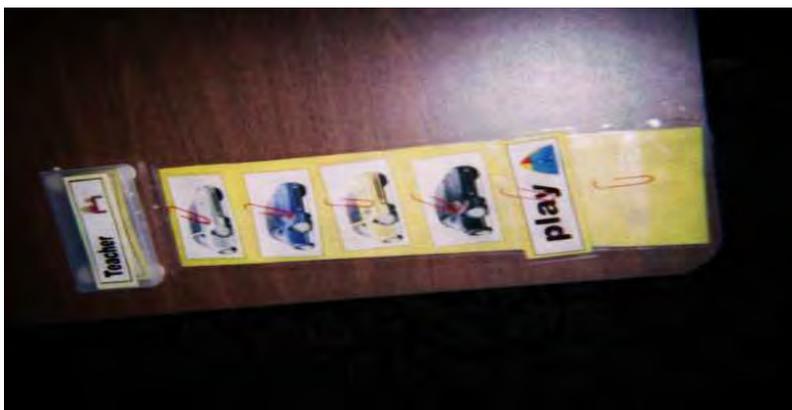


In this example, Vinnie is very interested in Volkswagons.  His parents own one and he loves to ride in it.  Also, he carries a Volkswagon toy with him wherever he goes.  So, in order to keep him interested and motivated to remain working, his interest in Volkswagons was incorporated into his work system.

He removes the top card, matches it to a corresponding work bin, completes the work, and then gets the next card.  When he is finished he goes to play.

The 4 key questions are answered in the following manner:
- o ***What work does he have to do?*** (the work in the corresponding work bins),
- o ***How much work does he have to do?***  (4 cards),
- o ***When is he finished?*** (when all of the Volkswagon cards are gone), and
- o ***What's next?*** (the card at the bottom of the work schedule).  This is a top to bottom, matching work system.

In summary, the work systems must answer the following questions:  (1) What work?, (2) How much work?, (3) When am I finished?, and (4) What is next?  for the student. They can either have an up-down or left-to-right orientation.  They can be a combined schedule and work system, a separate schedule and work system or a matching system. Each work system will be tailored to the individual needs/level of functioning/interests of the individual student.

# Challenging Behaviors

Children with ASD often present behaviors that are challenging for the individuals that work with them due to the nature of their disability (communication, social, and restricted or repetitive interests).  However, it is important to remember that children with ASD also exhibit behaviors that are typical for their peers.

1. ***What are the most effective techniques for managing behaviors?***
   Many of the most effective strategies for preventing behavioral problems have already been discussed in previous sections.  Given what we know about individuals with ASD, structured environments, visual schedules, communication supports, and instructional strategies are all effective in preventing these problems.  Additionally, it is important for individuals to understand the deficits of ASD and predict what situations might present challenges for individuals with ASD.

2. ***What do I do when certain maladaptive behaviors still occur despite preventive measures being in use?***
   If a behavior does occur, try to figure out why, and help the student accomplish the goal in a more appropriate way.  One must remember that behavioral difficulties do not "come out of the clear blue sky"!  There is **always** a reason, even though sometimes it is hard to determine. This may require the individuals working with the student along with the parents to complete a Functional Behavior Analysis (FBA).

3. ***What is an FBA?***
   The FBA is a process to assist in determining the causation of the behavior.  It requires identification of the behavior, the antecedents (or activities that occur immediately before the behavior) as well as the consequences (activity that happen immediately after the behavior) for behavior.  It identifies the motivations for behavior, assesses the function of the behavior, and helps to determine possible acceptable replacement behaviors. The steps for completing an FBA are contained at the end of this section.

4. ***What behavioral interventions work for children with ASD?***
   <u>Proactive strategies</u> are the most effective strategies.  They are strategies that manipulate or alter the antecedent event that signals the behavior is about to occur.

   a. *Environmental changes* – Changing the environment may, at times, be enough to prevent an unwanted behavior from occurring.  For example, by changing the environment of the classroom to one that is more structured and has clearer boundaries you may see some of the behaviors disappear.

   b. *Changes in routines* – This may be either instituting a routine for the home or the classroom to make things more predictable or use of a schedule to focus on the schedule as a routine making transition times easier for the child.  For example, Billy always expects lunch every day after group time. However, this does not always happen and when it does not he becomes extremely upset. If Billy learns to routinely check his schedule, then checking the schedule becomes the routine, not the daily events.

c.  *Teaching adaptive communication skills* – The most important tool a child has to help him adapt to any difficult or uncomfortable situation is communication. If he learns to communicate then fewer maladaptive behaviors will surface.  For example, Billy who would climb the refrigerator to get food when hungry was taught that he must tap his mothers arm and ask for food. When he asks for food he immediately is given food by his mother. Thus Billy learned a more functional and effective way of letting his hunger be known and satisfied.

d.  *Differential Reinforcement of Other Behaviors (DRO)* - Teaching and reinforcing replacement behaviors are also effective techniques for increasing appropriate behaviors.  For example, Sean engages in flapping his hands. When Sean is working with his hands in his lap, the teacher states, "Your hands are in your lap and you are listening so nicely!" Thus, reinforcing the positive behavior displayed by Sean with no mention of the maladaptive behavior.

e.  *Requesting a Break* – Students with ASD should be taught to request a break when they are feeling overloaded. This can be a visual or verbal request. Students should be given a break when appropriately requested.  The student with ASD will benefit from establishing a quiet area.

f.  *Making Language Visual* – Often we can extinguish a behavior from happening by making it visual prompt for the child. This can be a card that signifies waiting or being quiet. It can also be an individual rule card (see below).



g.  *Teaching about emotions* – Teaching emotions in a visual way (i.e., colors to represent different emotions, pictures of children displaying emotions) can help the children with ASD develop a better understanding of their own and others' emotions. Using natural opportunities when emotions arise, such as when the child is visibly sad/happy or when watching a movie that has observable emotions is an appropriate time to teach how and why people feel in certain ways.

h. *Relaxation techniques* – Teaching relaxation can provide a child with self-control strategies to use during anxiety-producing situations. These strategies can be displayed visually and should be practiced regularly.

i. *The Lasting Word* – It is important that your verbal directions be kept to a minimum when working with a child with autism.  As with any other children you need to follow through on your words.

**Say what you mean/Mean what you say**

**Say it only twice in a calm voice**

**Allow time for response**

**Verify the child understands**

**Stop talking and take actions**

Reactive strategies are ones that manipulate or alter the consequence of a behavior. Behaviors that are followed by a pleasant consequence are more likely to be repeated. One must be aware that what the adult and child perceive as unpleasant may be completely different.  For example, when his father lectures Billy, the boy may be attending to the words but enjoying the attention.  Billy's father believes that his long lectures are a verbal punishment.

a. *Extinction* – Extinction is the act of selectively ignoring a behavior so the child receives no reinforcement for the behavior. Extinction alone is not usually enough to reduce an unwanted behavior. Other techniques must be used in conjunction with extinction. Extinction is most successful with attention getting behavior and should *NOT* be used for self-injurious behaviors.

b. *Interrupting the behavior* – Interrupting is usually a successful method of initially stopping self-stimulations. To interrupt a behavior, gently touch the child in the least intrusive manner to stop the behavior.  For example, if Billy is tapping, place your hands over his hands.  If he is rocking, place a hand on his shoulder.

c. *Redirection* – Redirection consists of directing the child to a task where the undesirable behavior is not observed. Usually it is helpful if this selected, new, appropriate behavior is incompatible with the undesirable behavior. Try to redirect quickly and quietly.  For example, if hand flapping has been interrupted, redirect the child to an activity that involves the use of his hands.

d. *Sensory extinction* – Sensory extinction is used in order to remove or lessen the sensory input gained from engaging in the behavior. It is often used for protection from self-injurious behavior.  For example, Billy pulls on his ears on a continuous basis and has been examined to reveal no internal infections.  He may benefit from a headphone set. Headphones may provide the child with the same sensations gained from pulling on his ears, while being both safe and appropriate.

e. *Behavioral Contracts* – The development and use of behavioral contracts may work with higher functioning individuals with ASD. Here the desired replacement behavior along with the reinforcer and reinforcement schedule would be specified.

Issues to consider in designing behavior contract:

- Match the complexity of the contract to student's ability level
- Be creative in both design and choice of reinforcement
- Monitor effectiveness of the reinforcer and make changes where appropriate
- Adjust reinforcement schedule according to the needs of the student
- Make certain the student understands how the contract works
- Build in success
- Facilitate student independence and competence

## 4. *What are the types of feedback that are used?*

a. *Positive reinforcement* – Positive reinforcement increases the likelihood that the behavior will occur again. This occurs when the child is rewarded for appropriate action. For example, Billy completes a math page and is provided with five minutes of computer time.

b. *Negative reinforcement* – Negative reinforcement increases the likelihood that the behavior will occur again. This occurs when an aversive stimuli to the child is removed. For example, Billy does not like prunes. When he is given prunes, Billy says, "I don't like prunes." After that statement, the prunes are taken off his plate. Then Billy is more likely to say "no" when he does not like something.

c. *Punishment* – Punishment is often an instinctual response by adults working with children with ASD for maladaptive behavior. Punishment, however, has some drawbacks that cause this method to be less effective when trying to reduce unwanted behaviors for children with ASD. Before trying punishment remember the following points:

- In order for it to be successful, it must be administered after every occurrence.

- While it may stop a behavior immediately, it is not effective in the long term, so it has the potential to be overused and abused.

- The purpose is not always understood by the child and can elicit fear and aggressive behavior.

- Children learn from imitation and may begin to imitate punishment towards himself or peers.

- Punishment must take place immediately following the target behavior.

- It does not introduce any replacement behavior.

5. *What are types of reinforces that work with the child with ASD?*
   Reinforcers may change from day to day with the child with ASD. It is important that the teacher or family keeps a list of items that are reinforcing for the child. Then for a more involved child you might check before individual work to see what is the most reinforcement. Reinforcers fall into two categories:

   ✓ *Primary Reinforcers*: Food and sensory or compulsive drive

   ✓ *Secondary Reinforcers*: Praise, social routines, intense interests, and need for closure

6. *What can I do with my child who can fly into a rage without any apparent warning?*
   Some individuals with ASD appear to fall into a "rage cycle". This rage cycle has been called a "Neurological Storm." The cycle has three stages: *rumbling, rage,* and *recovery.*

   a. *Rumbling stage* – During the rumbling stage the student may exhibits signs that they are beginning to become upset. Some are subtle signs, such as tapping of his feet, heavy breathing, staring into space, etc. Others are more overt, such as yelling out, saying he is not feeling well, picking on other children, etc.

   Strategies that can be used:

   ✓ *Antiseptic Bouncing* – have the student do an errand, thus allowing him to remove himself from the stressful situation.

   ✓ *Proximity Control* – The adult moves physically close to the child.

   ✓ *Signal Interference* – The adult may provide the child a signal to show that they are aware of the situation.

   ✓ *Touch Control* - Lightly touching the student to show you are there to help. Touch can not always be tolerated by a student with ASD.

   ✓ *Redirection* – Redirect the child to another less stressful activity.

   ✓ *Home Base* – A predetermined location where the student can be sent to relax.

   ✓ *Walk and Don't Talk* – Go for a walk around the building without conversing

   b. *Rage stage* – During the rage stage a student can act impulsively, emotionally, and sometimes explosively or may withdraw, unable to verbalize or unable to act in a rational manner. There is no way to stop this stage once it begins except to ride out the storm.

   Strategies that can be used:

   ✓ **Do** stay calm. Use restraint, only if necessary, minimize verbal input, use visual cues
   ✓ **Do** ensure that other children are not endangered
   ✓ **Don't** raise your voice, insist on having last word, add demands, backing child into a corner. These will only escalate the behaviors.

c. *Recovery stage* – During the recovery stage you may see a sullenness, where the student expresses regret for his actions; a total withdrawal where they don't talk, or a complete denial that anything has happened.

# Steps in completing an Functional Behavioral Analysis (FBA)

**Step 1** – Identify and describe the behavior you wish to change. This includes how often? (frequency), where does the behavior occur (antecedents), how long does the behavior last? (duration), and the severity of the behavior? (intensity). The more specific one is in defining a behavior, the easier it is to work on that behavior. (i.e., tantrum vs. shouts and stamps his feet)

**Step 2** – Gather information on possible influences that impact on behavioral functioning by answering the following questions:

### *Who?*
- Who is present when the behavior occurs?
- How many people are around?
- Who usually enters or leaves the situation?
- Were unfamiliar people present?
- Who was not there that is usually present?
- Who was the behavior directed toward?

### *What?*
- What was happening when the behavior occurred?
- Was the child asked to participate in a particular activity or stop a desired one?
- Was an activity too hard or too easy?
- What were other individuals doing at the time?
- What is happening when the behavior *does not* occur or is less likely to occur?

### *When?*
- When does the behavior occur or not occur?
- Is it more likely to occur in the morning, afternoon, during meals, at bedtimes, etc.?
- Within a particular activity, does it occur at the beginning, the end, or during a time of transition?

### *Where?*
- Where does the behavior happen most often?
- Does it occur in the classroom, living room, kitchen, outdoors, or in the car?
- More specifically, what part of the living room?

### *What are the characteristics of the child's disability?*
- Communication
- Social
- Repetitive behaviors/Restricted interests

***What other factors affect the child?***
- ❑ Medical conditions
- ❑ Medications
- ❑ Dietary factors
- ❑ Sleep
- ❑ Disruptions of routines
- ❑ Previous consequences and effects on behavior

***What sensory issues might influence the child's behavior?***

Visual

- Are there distracters such as light, movement, reflection, or background patterns?

- Have you considered the eye level of the student, and the position of the teacher in relation to the student? What distracters that may interfere with attention?

- Have you considered the time required to shift the child's attention?

Auditory

- Are there fans, loud speakers, fire alarms, several people talking at once, air conditioners, bells, dogs barking, or scraping?

- What is the general sound level, and the predictability and repetitiveness of sounds?

- What are the individual's comprehension of verbal information and the time typically required to process auditory information and to shift attention?

Tactile

- Are there textures which seem to be aversive? Are temperatures appropriate?

- Does the student demonstrate a need to explore through touch and yet avoid being touched?

- What is the level of ability/defensiveness in the use of objects?

- What vestibular influences may be present?

- What is the student's need to move and exercise?

- What are the individual's reactions to movement?

Taste

- What are the students' preferences, dislikes, textures and temperatures of foods?

**Step 3** – Complete a behavioral chart describing the antecedent, behavior, and consequences. This could be posted in an area that is easily accessible so information can be easily charted.

| Time | Antecedent | Behavior | Consequences |
|------|-----------|----------|--------------|
|      |           |          |              |
|      |           |          |              |
|      |           |          |              |
|      |           |          |              |
|      |           |          |              |

**Step 4** – After collecting the data, you are ready to develop a hypothesis regarding the function of the behavior for the child.  Functions of behavior are:

a. *Communication Need(s):* What is the child attempting to communicate?  This is true for not only nonverbal children, but also those with language impairments as well. For example, Billy climbed on the refrigerator. The parent noted that Billy would try to retrieve the food that was stored above the refrigerator whenever he was hungry. The consequence was the mother fed Billy.

b. *Escape/Avoidance:* Usually attempting to escape or avoid undesirable activities.  For example, Billy may break a dish to avoid setting the table. Many children will try to avoid doing their homework.

c. *Attention/Control:* Often behaviors are attention seeking and the FBA will assist in identifying from whom the student is attempting to gain attention or what the student is trying to control.  For example, Billy bangs his head against the wall. As soon as his mother hears Billy bang his head, she comes running into the room.  She hugs, and rocks him, repeating the soothing words "My baby, my sweet darling." This is very reinforcing to Billy. Billy continues his head banging.

d. *Self-Stimulation/Sensory Stimulation:* Self-stimulatory behaviors are repetitive motor movements. These actions, when engaged in repeatedly, provide sensory stimulation; though it is not always clear what sense is being stimulated.  For example, hand flapping could be a motor stimulation, or it could be visual if the child is also gazing at his hands when flapping them.

**Step 5** – After gathering the data and determining the probable function of the behavior, you can make a plan or design strategies to deal with the behavioral issues that help the child meet his needs in a more positive or constructive way.

**ABC Observation**

**Student Name:**                    **Observation Date:**
**Observer:**                           **Time:**
**Activity:**                            **Class Period:**
**Behavior:**

| ANTECEDENT | BEHAVIOR | CONSEQUENCE |
| --- | --- | --- |
|  |  |  |

1.  ***What is Autism Spectrum Disorder (ASD)?***
    Autism is a spectrum disorder, as referenced in the Diagnostic and Statistical Manual of Mental Disorders DSM-IV, as having a qualitative impairment in social interaction, communication, restrictive repetitive and stereotypic patterns of behavior, interests, and activities. The chart below displays the umbrella of pervasive developmental disorders and how each of the ASD's fit under the area of Pervasive Developmental Disorder (PDD).
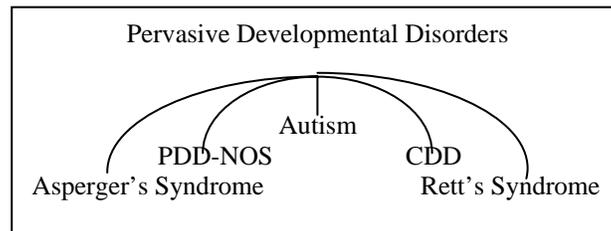


2.  ***What is Autism?***
    Autism is a complex developmental disability that typically appears during the first three years of life.  The result of a neurological disorder that affects the functioning of the brain, autism and its associated behaviors have been estimated to occur in as many as 1 in 500 individuals (Center for Disease Control and Prevention 1997).  Autism is four times more prevalent in boys than girls and knows no racial, ethnic, or social boundaries. Many children with ASD have other disabilities such as mental retardation, fine motor delays, seizure disorders, attention deficit hyperactivity disorder and learning disabilities.  The symptoms of autism generally occur between 18 months and 3 years of age.

    Autism impacts the normal development of the brain in the areas of social interaction and communication skills.  Children and adults with autism typically have difficulties in verbal and non-verbal communication, social interactions, and leisure or play activities.  Individuals may also experience sensitivities in the five senses of sight, hearing, touch, smell, and taste.

    Over one half million people in the U.S. today have autism or some form of pervasive developmental disorder.  Its prevalence rate makes autism one of the most common developmental disabilities.  Yet most of the public, including many professionals in the medical, education, and vocational fields, are still unaware of how autism affects people and how they can effectively work with individuals with autism.

3.    *What is Pervasive Developmental Disorder (PDD)?*
      As noted in the DSM-IV, the term PDD is not a specific diagnosis, but an umbrella term
      under which the specific diagnoses are defined: Autistic Disorder, Rett's Disorder,
      Childhood Disintegrative Disorder (CDD), Asperger's Disorder, and Pervasive
      Developmental Disorder Not Otherwise Specified (PDD-NOS).

      When the criteria are not met for a specific disorder, such as, Autism, Aspergers Syndrome,
      or Schizophrenia, the diagnosis of PDD-NOS is given.  For example, this category includes
      "atypical autism" – presentations that do not meet the criteria for Autistic Disorder because
      of late age of onset, atypical symptomatology, or subthreshold symptomatology, or all of
      these.


4.    **What is Asperger's Syndrome?**
      Asperger's Syndrome is thought to fall within the ASD spectrum. It is characterized by
      subtle impairments in three areas of development: social communication, social interaction,
      and social imagination.  In some cases, additional motor coordination and organizational
      problems are evident.  Children may have an odd gait and posture.  They often times are
      resistant to change and enjoy repetitive activities.

      Speech may sound odd, monotonous, or high pitched, but is not delayed.   The child may
      have difficulty in interpreting other people's tone of voice. He may not be able to tell if
      someone is angry, bored or happy from the tone of the person's voice.  Because of this a
      child with Asperger's Syndrome may get himself into difficult social situations.

      Moreover, the child with Asperger's Syndrome may have difficulty interpreting non-verbal
      communication such as body language, gestures and facial expressions.  He may also
      understand others in a very literal way.  For example when Johnny's mom was drying him
      after a bath she exclaimed "what lovely bare feet".  He became upset and screamed, "I am
      not a bear!" Expressive language may be peseverative (focusing on limited special areas of
      interest).


5.    *What are the causes of autism?*
      Researchers from all over the world are devoting considerable time and energy into finding
      the answer to this critical question.  Medical researchers are exploring different
      explanations for the various forms of autism.  Although a single specific cause of autism is
      not known, current research links autism to biological or neurological differences in the
      brain.  In many families there appears to be a pattern of autism or related disabilities—
      which suggests there is a genetic basis to the disorder—although at this time no gene has
      been directly linked to autism.  The genetic basis is believed by researchers to be highly
      complex, probably involving several genes in combination.

      Several outdated theories about the cause of autism have been proven to be false.  Autism
      is ***not*** a mental illness.  Children with autism are ***not*** unruly kids who choose not to behave.

Autism is ***not*** caused by bad parenting.  Furthermore, no known psychological factors in the development of the child have been shown to cause autism.

**6.    *What are some of the characteristics of autism?***
Not all children with ASD have the same degree of delays in social, communication, and stereotypical behavior.  They may exhibit some of the following characteristics:

Impairment in social interaction:
-   Easily distractible and have difficult time refocusing
-   Difficulty with social reciprocity
-   Sensory processing is inconsistent; may be hypo or hypersensitive (under/over)

Impairment in communication:
-   Delayed or absence of language and communication skills
-   Difficulty understanding abstract concepts

Restrictive, repetitive and stereotypic patterns of behavior:
-   Limited interest and/or focus
-   Inability to see the large picture while focusing on irrelevant details
-   Difficulty identifying and sequencing the parts of a task

**7.    *Can autism be outgrown?***
At present, there is no cure for autism.  Nor do children outgrow it.  But the capacity to learn and develop new skills is within every child.

With time and support, children with autism mature and new strengths emerge.  Many children with autism seem to go through developmental spurts between ages 5 and 13.  Some spontaneously begin to talk (even if repetitively) around age 5 or later.  Some may become more sociable, or more ready to learn.  Over time, and with help, children may learn to play with toys appropriately, function socially, and tolerate mild changes in routine.  Some children in treatment programs lose enough of their most disabling symptoms to function reasonably well in a regular classroom.  Some children with autism make truly dramatic strides.  Of course, those with normal or near-normal intelligence and those who develop language tend to have the best outcomes.   But even children who start off poorly may make impressive progress.  For example, one boy after 9 years in a program that involved parents as co-therapists, advanced from an IQ of 70 to an IQ of 100 and began to get average grades at a regular school.

While it is natural for parents to hope for the best outcomes for their child, progress may be slow.  However, many parents, looking back over the years, find their child has progressed far beyond their initial expectations.

# Communication

1. ***For children with ASD, what are characteristic delays in Communication?***
   Children with ASD can exhibit difficulties in language that range from a total lack of communication and spoken language to more qualitative delays in the area of social language. Communication deficits can include:
   - Marked impairment in the ability to initiate or sustain conversation,
   - Delayed development in speech and language,
   - Superficially perfect expressive language, formal pedantic language,
   - Odd or peculiar voice characteristics (i.e., sing-song, high-pitched speech, robotic speech, etc.),
   - Impairments in comprehension, including misinterpretations of literal/implied meanings, and idiosyncratic use of words.

2. ***What is Communication?***
   Communication is purposeful behavior that is used with intent within the structure of social exchanges, to transmit information, observations, internal states, or to bring about changes in the immediate environment. Communication includes verbal and nonverbal behaviors with intent that can be inferred by the individual's anticipation of an outcome. Not all vocalizations, or even speech, can qualify as intentional communicative behavior. Communication and social skills are interdependent. Typically children with autism have difficulty in social relationships and this affects their ability to acquire and use verbal language to effectively communicate.

3. ***What are the three major domains of language?***
   a. Receptive: Comprehension
      - Syntax:     Grammar
      - Semantics: Vocabulary and morphology

   b. Expressive: Language
      - Syntax and Semantics
      - Means: Ways in which one communicates
      - Intent:   Reasons one communicates

   c. Pragmatic: Social application
      - Reciprocity (give and take of social communication)
      - Joint attention (showing interest in a shared object)
      - Peer interest
      - Play
      - Affect
      - Emotional responsivity (responding to others emotions)

*4. What are the levels of language?*
- Low Verbal - Nonverbal, or limited in vocabulary, phrase length, or spontaneous usage
- Verbal - Spontaneous use of speech that is multi-word and includes at least some creative forms
- High Functioning Verbal - Spontaneous conversational speech

*5. How is the level of student's language determined?*

Recommended areas to assess include how the child communicates (systems or levels of expressive language), where the child communicate (context), and what is the child intending to communicate (function). Special education teachers can determine where to begin through formal observations, a communication sample or checklist (see attached sample). The speech and language therapist is an invaluable resource in determining a beginning level.

Systems or levels of expressive communication:
- Tantrum – usually a response or frustration due to not understanding
- Gesture or motoric – the child either points or leads an adult to a desired object
- Objects – the child uses an object to indicate a desire or transition
- Pictures- the child uses a picture to communicate his needs or wants
- Word cards that are commercially or teacher made
- Sign language
- Expressive communication

Communication Context:
- Food while eating
- Work while working
- Play during play
- Routines during routine

Functions:
- *Requesting* – The child conveys the message that he wants some one to hand him an object, perform an action for him, or a desired activity. For example, points to object, "juice"; "I want cookie"; pulls teacher toward tape player; "wants tickle"; and touches object and looks for consent to play with it.

- *Getting attention* – The child indicates that he wants another person to look at him when he does not have that person's attention such as, taps shoulder, "Mom."

- *Rejecting/Refusing* – The child rejects an object offered to him, rejects the action of another person; i.e., tells other person to stop. He refuses to comply with a request by pushing juice away, saying "no"; or shaking head no.

- *Commenting* – The child points out characteristics of himself, other people, or objects that are readily apparent to the listener and pertain to the immediate environment. For example, holds up objects to show someone; "that's my coat"; or says "finished"

when his work is done and the teacher is nearby.  He points to another child engaging in some activity.

- *Giving information* – The child tells another person something that is not obvious to that other person. This may involve reporting on some activity that happened in the past or will happen in the future. It may also be giving an answer to a question that was a true request for information, and not a question to which the other person knew the answer.
    - "I watched TV last night."
    - T: Do you like peas? S: Yes
    - T: Where did you put your pennies? S: Points to desk where the pennies are located.

6. ***What are some general recommendations for developing communication?***
   a. *Minimize Direct Questions* – Try to minimize the number of questions you ask the child. At times, adults believe that they are developing language in their children by asking a lot of questions. Some questions that tend to be over used include:
      - What's this?
      - What do you want?
      - What are you doing?
      - What do you call this?

   b. *Commenting* – Follow your child's lead. Watch what the child is doing and comment upon it, providing what might be the internal dialogue.

   c. *Wait and Signal* – In speaking with your child wait with clear and visible anticipation while looking expectantly at the child. Thus indicating that after you have spoken your child should speak. How to look expectantly:
      - Establish eye contact
      - Lips slightly apart
      - Eyebrows raised
      - Lean head and body in slightly toward child

   d. *Set up communicative situations* – In other words, encourage spontaneous language by going out of the way to set up situations that force him to speak.  For example, you can put the child's favorite food out of his reach so he must initiate communication to obtain it.

   e. *Use abundant gestures and facial expressions* – Using exaggerated facial expression and gestures are important in fostering language acquisition.

   f. *Modeling* – Provide the child with an example of what to say (e.g., At snack time say, "I like the cookie.") This is better than correcting the errors the child has made.

   g. *Reduction* – When speaking with your child use short sentences. This not only provides an appropriate model but also increases the chances for comprehension.  For example, if your child is not yet using single-word utterances, speak to him in one-word

utterances.  When he approaches two-word utterances, increase your verbalizations to two words.

h.  *Use Exaggerated Intonation, Volume, and Rate of Speech* – This increases the likelihood that child will attend to what you say.

i.  *Eye Contact* – Looking at the person you are speaking to is a crucial part of communication.  Look at your child's eyes and encourage him to look at yours.

j.  *Reinforcement* – In order to increase your child's spontaneous language reinforce your child's productions.

k.  *Make it fun* – Have fun when communicating.  Talk in a pleasant voice and smile a lot.

7.  ***What are some activities and strategies for increasing receptive language?***
    a.  *Pointing/Requesting*
        - Find an edible or any item that the child desires. Instead of handing it to him, hold it out of his reach and have him request the food using vocalizations/picture card/object card.  The picture/object card should be easily accessible to him (i.e. on the table directly in front of him).
        - Prompt the child physically to extend his arm toward the item, so as to point with his finger.
        - After the child points, give him the item he pointed to as a reinforcer.

        *Pointing and requesting can be shaped slowly so that the child does not become frustrated. For example, Billy's friend Jenna wants a pretzel*

        - Hold the pretzel out of Jenna's reach and prompt her to point as described above. Reinforce this by giving her the pretzel.  Practice this step for a number of trials.

        - Hold the pretzel out of Jenna's reach and wait for her to lift her arm towards it. Help her better point, and then reinforce. Practice this for a number of trials.

        - Hold the pretzel out of Jenna's reach and only reinforce a perfectly formed point.

        - Work on pointing with other desired items and favorite foods.

    b.  *Responding to Name* – Recognizing one's own name is a major step in understanding communication. A name connects a sound with an act of attending to a person and not just an object.

        - Sit in front of Jimmy. Make sure that he is not distracted by an alternate activity. Call "Jimmy" and teach him to respond to you either by physically prompting him to look at you or holding up an edible.

- Sit a few feet away from Jimmy. Make sure he is not distracted by an alternate activity. Call "Jimmy" and teach him to respond.

- Call Jimmy's name and teach him to respond when he is distracted.

- Teach Jimmy to respond to his name when he is facing in the opposite direction of you.

- Call Jimmy from another room, prompt him to come to you and respond with eye contact.

c. *Nouns* – Children need to learn nouns before any other forms of speech. Receptive nouns can be taught in a number of formats. Select a few items that the child comes into contact with often and likes, such as juice, toy car, and a cookie. Name these items, especially after the child points to the item as a request. Use only the noun when teaching labels.

d. *One-step Instructions* are also known as commands. This is the first communication tool that is taught to the child that is not for the sole purpose of helping him to gain a desired item. Some one-step instructions to teach the child at home and at school are:
  - Sit down
  - Wave (prerequisite for greeting)
  - Touch head, nose, mouth, etc.
  - Stand up
  - Come here
  - Arms up (helpful for dressing or young child needs to be lifted)
  - Clap (can be used to redirect hand-flapping)

e. *Two-Step Instructions* are a higher level in cognitive functioning. Two-step directions should be built on previous one-step directions. Some examples from the previous section are:
  - Sit down and touch mouth.
  - Stand up and come here.
  - Stand up and wave.
  - Come here and clap.

f. *Functional instructions and increasing environmental awareness* –Instructions should be selected for their functional qualities in the classroom or home. Often, the most useful instructions are ones in which the child is told to go to an area of the classroom or house ( "Go to the table," and "Go to the living room.") and instructions in which the child is asked to get objects ("Get your shoes," "Get your coat," or "Get a fork.")

g. *Making a game out of learning language* – Language and communication skills, like any other skills, are more easily acquired when learning is fun. Teaching the word "up" and lifting the child to swing him like an airplane is a common parent-child interaction.
  - In order to teach prepositions, have the child stand "next to," 'between," "behind," etc. various objects in the house.

  - Speaking to the child in simple words and shorter sentences and eliminating unnecessary words such as articles ("a," and""the,") reduces the complexity of language and helps the child focus and learn the words that are crucial to the sentence's meaning.

- Exaggerating one's intonation and the volume when addressing the child will serve as a prompt, aid language acquisition, and capture the child's attention.

8. ***What are some activities and strategies that can be used to increase expressive language?***
   a. *Promoting sounds and babble* - When a child is first learning to speak and has not yet acquired meaningful words, babbling should be encouraged. Through this the child leans to explore sounds and sound combinations that are the building blocks of speech. Furthermore, some children who have difficulty with pronunciation will learn to connect a sound to an item.

   A parent or teacher can distinguish between exploration and verbal stimulation by listening for repeating sounds to the exclusion of others. Verbal stimulation should not be reinforced.

   b. *Oral motor exercises* – Oral motor exercises work on the muscles of the mouth and the muscle control that is needed for speech. The following are examples of oral motor exercises ( more can be obtained from the Speech and Language Clinicians).
   - Opening mouth
   - Puckering lips
   - Sticking out tongue
   - Moving tongue from side to side
   - Smiling
   - Chewing
   - Blowing

   c. *Verbal imitation* – Once a child is able to imitate motor movements, he is ready to work on verbal imitation. Even if the child can speak a number of words or word combinations, verbal imitation can help pronunciation.
   - When working on verbal imitation begin with imitating simple, one-syllable sounds, move on to sound combinations, and then teach words.
   - One can shape responses slowly, reinforcing first approximations and then perfect responses; one can work within the child's level of frustration and promote greater success.

   d. *Pointing/Requesting*
   - Find an edible or other item that the child desires.
   - Hold the pretzel away but in his line of vision, and prompt with say "pretzel", When the child says "pretzel," give it to him.
   - Hold the pretzel out of the child's reach, only reinforce him with it when he labels it independently, without the prompt
   - Prompt child to request by saying "Say, "want pretzel."
   - Reinforce child with the pretzel only when he requests using the words 'want pretzel.'
   - Begin working on "I want pretzel."
   - Teach child to say, "I want pretzel, please."

e. *Name and object labels* – For guidance on teaching nouns refer to the receptive language section. Ask the child "What is it?" when encountering various objects around the house and school. Prompting and reinforcing correct responses will teach him to label objects. Do not use this technique too often, as it also stifles spontaneous speech.

f. *Incidental ways of increasing spontaneous language* – Adults can manipulate the environment in order to produce requests and proclamations. For example:
   - Toy is dropped to the floor or water spilled may elicit uh-oh/it fell/spilled
   - A preferred item is made inaccessible so that the child must make a request
   - A jar is shut too tight so the child must request help
   - Dinner consisting of small portions may elicit the request for more.

   Select an appropriate situation or create the situation several times a day for a couple of weeks. The adults can prompt or model the expected response. Always reinforce the child for speaking independently.

g. *Social questions* – It is important that the teacher and parent begin to teaching correct responses to social questions. They should be practiced at home and school. Some questions are:
   - What is your name?
   - Where do you live?
   - What is your address?
   - What is your phone number?
   - How old are you?
   - When is your Birthday?
   - Who is your mommy?
   - Who is a good boy/girl?

   **'Wh-' questions** –
   - It is important for a child to practice the other 'wh-; questions, namely: 'what' 'when?' 'where?' 'why?' (And how?)
   - Practice using two types of 'wh-'questions in the same conversation, and see if the child can differentiate between them.

h. *Simple Formulas*
   - Children with ASD tend to catch on to formulas and systematically taught speech more easily learned. Some examples of simple formulas that will expand a child's verbal repertoire:
     - "Look what I did! I…"
     - "It's time for…"
   - Formulas give the child a linguistic tool that he can apply to a variety of situations and expand upon as necessary.
   - New formulas can be gained by observing at play and listen to the speech they naturally use.

i. *Echolalia* – Echolalia is imitation of speech. All children go through a "parroting" stage in language development. Children with ASD tend to do so to the extreme and may need help in turning it into functional speech. The three types of echolalia:

*Immediate Echolalia* - This is when a word or sentence is repeated immediately after it is heard. Immediate echolalia can become more functional by teaching the child to say something else, rather than repeating. For example, Daddy says, "Hi Samuel." Samuel replies, "Hi Samuel". In order to teach Samuel not to parrot, but to respond appropriately to the greeting, as soon as Samuel says, "Hi," but before he has the chance to say his name, his father prompts him to say "Daddy."

*Delayed, non-functional echolalia* - This is when a word or sentence is repeated some times after it is heard. It serves as verbal self-stimulation, and is often expressed in routines, such as repeating an entire video segment word for word, sometimes with the same voice and with the same inflection as the actor.

Delayed echolalia may be reduced in the following ways:
- Redirect the child's verbalization by asking him a question.
- Do not allow him to engage in reinforcing activities while he is echolalic.
- Recent research indicates that delayed echolalia may be a form of communication where the child associates the song/video/etc. with something he is requesting.

*Delayed, functional echolalia* - This is when a language statement is taken as a whole and over-generalized to other situations. For example, Billy threw a toy and broke a vase, his teacher said, "Look what you did, now take a timeout." Later on in the day when Billy spilled his juice at snack, he repeated, "Look what you did, now take a time out." When this happens, model or prompt him to say a sentence that is similar, but more appropriate. For example, in the previous example prompt Billy to say, "Look what I did, now clean it up"

j. *Modeling and Expansion* - In this intervention, the parent or teacher takes what the child initially says and repeats it adding words to expand the sentence. For example, while Billy is in the block center he says, "I build a house." The teacher repeats back, "I build a big house." The teacher teaches him to say, "Miss Tammy, I build a big house."

k. *Scripts*
- Introducing scripts during an activity, for children who can read, is a good way of forming a discussion without having to verbally prompt the child.

- Scripts can include directions and dialogue. Scripts can be written for any activity. Observe children at play before writing the script so it is geared toward the child and his peers, and includes words and slang commonly used. Before giving the script to more than two children, practice it with each child in a one-on-one setting. Once it is mastered with the adult, give it to the children to practice.

- An example of a script that could be used in the playhouse area is as follow:
  (Sally -) Go get the tea set.
  Walk up to Linda and ask her: "Wanna play with me?"
  (Linda -) Look at Sally and say, "Okay, I will be the mommy."
  (Sally and Linda -) Set the table and sit down.
  (Linda -) Ask Sally: "Would you like some tea?"
  (Sally -) Look at Linda and say: "I want tea with milk and sugar."
  (Linda -) Pour tea for Sally. Add milk. Add sugar.
  (Sally -) Go to the kitchen set. Open the oven. Say, "I think the muffins are ready." Bring the muffins to the table. Take a muffin and give one to Linda.
  (Sally and Linda -) Pretend to eat the muffins and drink the tea.
  (Linda -) Say, "These are good."

*l. Sign Language*
- Sign language may be beneficial to children with ASD if the following indications are observed:
  - The child, after speech and language interventions, exhibits little or no vocalization
  - The child tends to understand gestures easily, and quickly learns to point in order to request items of desires.
  - The child's receptive language skills surpass his expressive language skills, and his ability to communicate thoughts and feelings often leaves him frustrated.
  - If sign language is decided upon, the follow signs are easy to teach and help ease frustration at the beginning: more, food, drink, bathroom, I want, yes, and no.

*m. Communication boards*
Three-dimensional communication boards:
- Three-dimensional communication boards consist of small, three- dimensional objects that a child desires.
- Select the items the child needs and likes and Velcro them onto a cardboard sheet.
- Practice using the board, as follows:
  - Hold up item and physically prompt the child to remove the small model representing the item.
  - Prompt the child to give you the model in exchange for the actual item.

Picture Exchange Systems:
- A picture exchange system incorporates pictures as a means of communication the same as the three-dimensional board.
- Pictures can be taken from magazines, photographs, internet sites (todo2learn.com) or commercial systems (Board maker).
- If you take photographs, photograph items against the same background.

- If a communication board is used it must be available to the child at all times. Practical communication boards are small in size and easily carried. (The size of the pictures and board depend on each individual child's skill level).
- For children who read, some can use words in lieu of pictures.

9. ***What are some strategies to encourage language development in individuals with High Functioning Autism (HFA) or Asperger's Syndrome?***
   Children with HFA or Asperger's Syndrome often have age appropriate language structures and may even have a rich vocabulary. However, they tend to have:
   - Difficulty with social language
   - Use literal interpretation of metaphors and figures of speech
   - Use formal language
   - Develop idiosyncratic words (the child makes up a word to represent an item)
   - Tend to vocalize thoughts
   - Lack auditory comprehension
   - Have non-fluent speech

   a. *Pragmatic Language* (social language)

   b. *Reciprocal Conversation* - The child may have difficulty opening a conversation, making comments and questions during conversations, and ending a conversation. Reciprocal language can be taught through role playing an appropriate conversation. The teacher can demonstrate extreme examples of awkward situations and have the student identify what is wrong and what should have been said. The student practices appropriate conversation.

   When a conversation becomes confusing, because a person is imprecise or provides an unexpected response, the natural reaction is to seek clarification. However, an individual with Asperger's may insert a long pause or switch topics. Instead, the child should be taught to use the phrases. "I don't know" or "I am confused."

   c. *Interrupting* - Children with Asperger's tend to interrupt. The individual has difficulty identifying cues when to start talking (i.e., momentary pause, end of a topic or body language signifying it is their turn). The child should be taught to read body language or look for language cues to signal the end of a topic.

   Comic Strip conversations may be useful in teaching children to visualize the aspects of interruption. Present the child with a comic strip drawing of the situation with which the child is having difficulty. Help the child to write the script that deals with the situation in a socially acceptable manner. Comic Strip conversations can also assist in showing what others are thinking during the conversations.

   d. *Sympathetic comments* - Individuals with Asperger's tend to use less spontaneous sympathetic comments. The teacher can demonstrate conversations and model sympathetic comments for the child.

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e. *Restricted Interests* - Some children with Asperger's syndrome can talk incessantly about topics of personal interest. Some of these topics may not always be appropriate for the school setting. Teachers can review with the students' topics that are appropriate for conversations in school. Another strategy is to limit the amount of time a student can talk about certain topics. Also, time can be allocated in a daily schedule to talk about a favorite topic. This is a visual reminder that he will be able to discuss his favorite topic BUT that there is a specific time to do it.

f. *Literal Interpretations* – An individual with Asperger's Syndrome may tend to take what other people say literally. This characteristic also affects the understanding of common phrases, idioms, or metaphors, such as,

- Has the cat got your tongue
- Walk on ahead.
- Keep your eye on the ball.
- Looks can kill.

- Out of the blue.
- You're pulling my leg
- Change your mind.
- Your voice is breaking.

- Comic Strip Conversations and Social stories can be used to help children understand figures of speech, such as idioms.
- Children could identify a phrase they have found to be confusing and guess the meaning.
- A child may keep a notebook of phrases that they find confusing to discuss with the teacher at a later time.
- Parents and teachers should try to remember how confusing language can be for these children. Language misinterpretations can be problematic for individuals with aspergers.

g. *Tone, pitch, volume, or inflection of voice* – Some individuals with Asperger's Syndrome have difficulty with either modulating their voice or they have a sing-song voice. They also have difficulty interpreting inflections and intonations of the speaker. For example, I didn't say she stole my money [but someone did] vs. I didn't say she stole my money [she took something else]. Some strategies include:
- Play "Behind the Screen" where a student is given a list of adjectives or adverbs and asked to count from one to ten in the manner of the adjective or adverb. The rest of the group has to guess what the word might be.
- Another activity would be tone conversation, where a pair of students working together. The first student starts a conversation or reads a script in a tone of voice and second student responds in kind.

h. *Vocalizing Thoughts* – Children with ASD may vocalize their thoughts more often than peers of the same age. They may do this because they are less influenced by peers to keep quiet or because talking to themselves helps them to figure out what they are doing, or it keeps them from feeling lonely. It is important to find out why the person talks to him/her self. Should this area become problematic, encourage the child to whisper rather than speak or to try to 'think it, don't say it' when near other people.

i. *Auditory Discrimination and Distortion* – Some individuals with Asperger's have difficulty following conversations when there is noise or conversation in their environment.
   - Teach the child to ask the person to repeat
   - The teacher can ask the child to repeat what they are suppose to do after a direction
   - Teachers can pause after a statement giving the individual time to process the information.
   - Teachers can use written instruction in addition to verbal instructions.

# Instructional Strategies

When working with students with ASD, an eclectic approach to choosing instructional strategies should be taken.  What works for one child may not work for another; and what works for Billy on Monday might not work for him on Tuesday.  As previously stated, children with ASD fall within a continuum of functioning levels ranging from high functioning children with Aspergers Syndrome to lower functioning children with autism and mental retardation or other conditions.  Regardless of the level of functioning however, studies have shown that these children learn best in a highly structured, visually defined environment.

1. ***What factors should be emphasized in selecting instructional strategies?***
   Instructional strategies should emphasize teacher directed learning and opportunities for developing independent work skills.  Educators should use a variety of strategies in developing individualized education programs that are meaningful and meet the needs of each individual child.

   The teacher's physical proximity to the student should always be considered.  Some children require more assistance than others and the level of assistance may also be dependent upon the required task.  Many children with ASD are tactile defensive and not aware of their physical space so this should be considered in selecting instructional strategies.

2. ***What are the types of prompts to be used to enhance instruction of children with ASD?***
   a. *Teacher Prompt* is a way of providing assistance to the child in order to elicit or ensure the appropriate response and/or behavior.  The degree to which students require prompting should be re-evaluated frequently to ensure that the least restrictive prompt is being used. The goal is for students to learn and then demonstrate a task or behavior independent of a prompt.

      For some students the prompt becomes a relevant detail to the task.  They may be unable to complete the task without the teacher's presentation of the prompt; i.e., the student waits at the end of each step for the teacher to say "what's next."  Sometimes the student may even need the "right" person to give the prompt.  This means that the child has become "prompt dependent." Activities designed to reduce the prompts should then be introduced.

   b. *A Verbal Prompt* is when a student is verbally told to complete a task, change location, or provided clarification for the completion of a task.  Children with ASD may have difficulty understanding verbal directions.  So, it is important for the teacher or parent to determine the child's level of receptive language ability.  If the child does not understand the words, then they are not able to follow the directions.  In this case, picture prompts may be necessary.   Since a child can become dependent upon verbal prompts, as a child demonstrates beginning mastery of a skill, the number of verbal prompts should be decreased.

c. *Gestural or Physical Prompts* range from hand-over-hand assistance to a tap on the shoulder. Gestural prompts are the easiest to fade when working with students. When learning a new task, a student may need more hand-over-hand assistance to appropriately complete the task. For example, Michael, is learning how to cut a piece of paper. He has difficulty simultaneously holding the paper in his left hand, while cutting with his right hand. In order to teach this skill, the teacher puts her hands on top of Michael's as he holds the paper and scissors. She guides his hand while he is cutting the paper. As Michael's fine motor skills improve, the teacher gradually decreases the amount of pressure on his hands until he is able to independently cut the paper.

d. *Visual Cue* is a picture symbol, word card, or list that tells a student what he should do, where he should be, or how he should behave. In the example below, Sara's work schedule tells her **what to do** and in **what order**.



*Located on the bottom left corner of her desk is the written work schedule. She checks it off from top to bottom upon completion of each activity. For further explanation of this work system, see section titled, "Arranging the Learning Environment: **Work Systems."***

Jonathan, a preschooler, uses a picture schedule as a visual cue to indicate **what** his next activity is and **where** it takes place. Jonathan uses photographs in his schedule. The type of visual cue depends upon the child's level of understanding. Children may use objects, black and white picture symbols, or word cards.

To the right of Jonathan's daily schedule is his "free centers choice" board. These are photographs of favorite toys that he uses to communicate which center he will go to next. (See example on next page.)



In the example below, the pictures are visual cues to remind students of the expected behaviors during a social skill lesson. The pictures symbolize what good behavior is: "having a quiet voice", "sitting on your stool", and "raising your hand." The pictures are posted in front of the group and reviewed each time the group begins and ends.
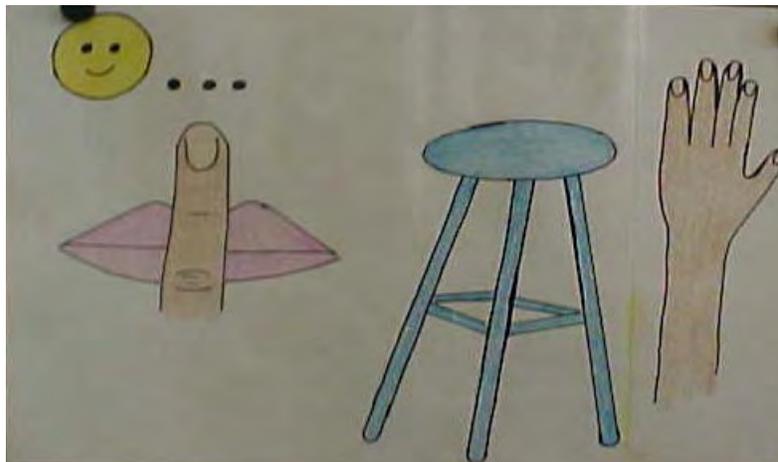


e. *Positional is s*imilar to visual prompts, the position of an item serves as the visual clue. A tricycle near the classroom door indicates it's time to go to the playground. Pencils handed to a student indicate that he is to pass them out to other students in the classroom.

f. *Modeling* is doing exactly what the child is expected to do, step by step, while the student observes. For example: A classroom teacher models how to ask for a toy in the play area while two students watch. The children are then prompted to ask each other for a toy.

**3.** *What aspects of visual structures can be used for an instructional strategy?*
A visual structure incorporates the concrete visual cues into the task. The student understands what to do simply by the presentation of the materials without verbal or physical prompting.

The following are the three key elements to visual structure:

a. *Visual Instruction of tasks* shows the student how to combine and organize a series of parts to obtain the desired outcome. Visual instruction uses the student's visual skills in a positive and functional way. There are different forms of visual instructions. At the most basic level a task can be presented with the necessary materials in a simple, organized manner. The student sees what to do just by looking at the materials. The materials alone define the task. As children are able to independently understand what the objective of the task is, teacher dependence is reduced.

Visual instructions can be provided in several forms:
➢ Materials define the task so the student can see what to do just by looking at the materials.



➢ Jigs are pictures or line drawings that show the layout of specific materials in the correct combination or sequence necessary for the completion of the task.

Types of jigs are:
▪ Cut-out jigs help the student insert specific pieces of a task into their identical shapes which have been cut into thick cardboard or Styrofoam.
▪ Picture jigs provide the visual instruction necessary to assemble a package product.

➢ Picture Dictionary lists the written word for the student's reference. It shows pictures paired with the written word.



➢ Written Instructions tell the student, step-by-step what to do. By task analyzing the directions for the activity, the teacher helps the student to understand what is expected. This approach also teaches them the concepts of "beginning" and "finished." For example, the following directions are written on the top of the page of a worksheet. The directions tell the student clearly how to begin the task, what to do, and what to do when finished with the task

SUBJECT: MATH Worksheet
Directions:
1. Circle each bird on the page.
2. Count the number of circled birds.
3. Write the number in the green box on the bottom of the page.
4. Place this paper in the red finished box on the teacher's desk.

This is a one-page activity that the student can independently complete without teacher prompt or assistance.

b. *Visual Organization* reduces distractions and draws the focus to relevant details by creating boundaries. For example, materials are organized in separate containers and the physical space is limited.



c. *Visual Clarity* refers to how we draw the student's attention to the most relevant and useful information and concepts of a task. For example: If a student is given paper and pencil and asked to write his name, he may just scribble. But if a box is drawn on the paper and he is asked to write his name in the box, he would understand what is expected.



Other visual clarity examples are:

1. Color-coding or highlighting. Important words, phrases, or pictures are highlighted to draw the student's attention. This could be in a text or single worksheet.

2. Labeling. Items and locations in a classroom are labeled to assist the student with ASD understand what an item is, or what it is used for. This also fosters prereading skills for younger students and reinforces reading comprehension skills for older students. For example: chairs, toys and center areas are labeled.

**4. *What are some specific behavior techniques that can be used in instruction?***

    a. *Discrete Trial Training* involves breaking a skill down into discrete steps, teaching one step at a time and taking clear data on mastery the of each step.

| | |
|---|---|
| Stimulus: | The instructor presents an instruction and waits for the child to respond |
| Response: | The child provides a response |
| Consequence: | a.) If response is correct, the consequence is that the instructor reinforces the child by praising or, if necessary rewarding the child. |
| | b.) If the child responds incorrectly, the instructor immediately prompts her, ensuring that she responds correctly |

    b. *Chaining* refers to teaching a behavior by breaking it down into its component skills and teaching them one at a time. This way, the child learns by building on behaviors already in his repertoire. Forward chaining is teaching the first step and progressing until all the steps are mastered.

        Example: Steps for hand washing.
- ✓ turn water on
- ✓ pick up soap
- ✓ rub hands with soap under water
- ✓ put soap down
- ✓ rinse hands
- ✓ turn off water
- ✓ dry hands with paper towel
- ✓ put towel in garbage

Backward chaining is when the behavior is taught beginning with the last step and progressing backwards, toward the first.

The first step to be taught is putting the towel in the garbage; then you work backwards. Data collection should be taken for each step.

    c. *Shaping* is a technique used to teach a behavior that is not in a child's repertoire. When a behavior is shaped, it is taught by reinforcing small increments toward the acquisition of the target behavior. For example, the goal is for Billy to say the word "Mommy."

        Step 1 - Billy is reinforced for saying the sound "mmm"
        Step 2 - Billy is reinforced for saying the sound "mma"
        Step 3 - Billy is reinforced for saying the sound "mmam"
        Step 4 - Billy is reinforced for saying the sound "mommy"

d. *Play* is used for instruction by helping children who do not know how to appropriately play with toys and other children. Play can be an opportunity for the teacher or parent to model "how" to play with toys.  Play is appropriate for young children, as well as for older children.  For example, an 8th grade student may be interested in playing Monopoly with her friends but doesn't know how to take turns.

   Parents and teachers can improve a child's social activities by following the child's lead. This means "listen to" and "watch" what is interesting to a student and copy the child. For example, on the playground, Billy likes to talk about the birds flying overhead.  The teacher may ask him to describe the type of birds he sees, or to count the number of birds. The teacher can then ask him questions about what he saw such as, "How many birds did you count?" and  "What color were the birds?"

e. *Incidental Teaching* is helping a child learn by observing others in the natural environment. This could take place anywhere such as at the snack table or on the playground.  The goal is for the student to observe the desired behavior demonstrated by other students.  He is then encouraged to demonstrate the same behavior.  For example, in the 4th grade classroom, Billy is encouraged to watch other children raise their hands to ask a question.  He is then asked or reminded to raise his hand rather than calling out.

# Social Skills

A primary characteristic of children with ASD is their poor or very limited social skills, which affects their ability to initiate and maintain appropriate peer relationships. They demonstrate widely differing levels of skills and severity of symptoms.

1. ***What are the characteristic social deficits exhibited by children with ASD?***
   - A very concrete understanding of social rules
   - Over-adherence of rules
   - Anxiety
   - Lack of reciprocal communication
   - Interest, but difficulty joining others
   - Lack of understanding body language or social skills
   - Restrictive interest
   - Affectionate, but on own terms
   - Rigidity in thinking
   - Fear or refusal to participate in activities that involve motor skills
   - Problems in taking turns during games
   - Social isolation
   - Lack of empathy
   - Adverse reaction to changes in environment and/or routines
   - Difficulty with initiation and social reciprocity (i.e., maintaining a conversation)
   - Difficulty with pragmatic language
   - Limited range of facial expression
   - Lack of understanding of age-appropriate social norms

   These delays in social functioning affect a child's ability to function in the home, school, and community.

2. ***What are appropriate social goals to teach to children with ASD?***
   - Play skills: individual, in pairs, small groups
   - Concrete to imaginative play
   - Sharing skills
   - Turn-taking skills
   - Playing games with rules
   - Group activities
   - Social skills

3. ***How do I decide what goals and interventions should be targeted?***
   Goals and interventions can be developed after assessing a child's current social skills. Assessment involves using all available data, including formal and informal assessments and data collected by service providers and parents during interactions with the child. Data collection is an ongoing process that can be used to measure child progress program effectiveness, and to identify additional interventions needed by the child.

**4.** ***What strategies are effective in teaching social skills to children with ASD?***
Since social development is an extremely important aspect of education for children with autism spectrum disorders, a child's social behavior with both adults and peers needs to be targeted for intervention. Careful attention must be paid to skill acquisition, maintenance, and generalization.

Different strategies can be used based on the ability level of each child. For the child that is more limited, many of the skills will be taught in an individual teaching setting, such as, eye contact, turn taking, making requests, appropriate use of toys, and play skills. Children who are higher functioning or have Asperger's Syndrome will work on appropriate conversational and pragmatic skills (initiating, turn taking, maintenance, and interrupting), understanding emotions, and developing a repertoire of interests.

Some effective strategies are:
a. *Direct Instruction* is an effective method of teaching new skills that are not in the child's repertoire. Some skills that could be taught using this method include:
   - Attending (both initial and continued attention)
   - Object manipulation/motor skills (i.e., teaching a child to play with a particular object.)
   - Turn-taking (a game that utilizes an object is a good way to teach turn-taking as it provides a visual prompt when it is someone's turn)
   - Imitation skills (i.e., Simon Says or Follow the Leader)
   - Direction following (increases compliance and develops cognitive skills.)
   - Choice making (a skill that can be practiced when engaging in almost any board-game.)
   - Sharing (a crucial first step in understanding others' feelings, and enabling students to work and play together.
   - Social commenting (conversation skills such as "Would you like the red crayon?" "The paper is on the teacher's desk." "Look at my picture.")

b. *Social Stories* are short stories that describe a particular situation or social skills in a specific way to provide information to the person with ASD. They serve to improve his understanding and perspective in a given social situation. They also state in a positive way the accepted social rules or expectations. Social stories can address such issues as rude behaviors, preparing for a new situation, social language, or how to complete an activity. Illustration may increase the effectiveness of a social story.

> ***Why and How I Show People I Love Them***
> I can say, "I love you," to my Mom and Dad.
> I can say, "I love you," to my other relatives.
> I can say, "I love you," to my people who are special to me.
> I can draw pictures to show people I love them.
> My family would like the pictures I draw for them.
> I can smile and look at people to show that I love them.
> I can hug people to show them that I love them.

c. *Comic Strip Conversations* are developed as a way to make confusing social language visually clear. A comic strip is drawn to depict a social situation that was confusing for the child with ASD. The words are then coded with colors, symbols, and fonts to illustrate words, thoughts, and feelings.

d. *Social Skills Groups* teach initiating, maintaining, and responding to social interactions. Methods include role-playing, using social scripts, and providing visuals for outlining conversational points. Activities could be used to demonstrate social difficulties others are having. Social reasoning skills can be illustrated by using scenes from some comedy programs, such as, *Third Rock from the Sun*. A group of aliens takes on human form and comedy is created when they attempt to socialize like humans. Their confusion and errors could be used as discussion points as there are some similarities to those experienced by adolescents with Asperger's syndrome.

e. *Videotaping* has also been an effective method for teaching social skills. Many children with ASD have a fascination with videotapes and this interest can be used to teach social skills. Some children learn from watching themselves or others on videotape. For example, record a particularly difficult part of the day in which the child displays targeted behaviors. Watch the tape with the child and discuss what he is doing and/or could have done differently. A tape of a child performing the appropriate behavior can also be shown to discuss the differences. This could be paired with comic strip conversations to visually display the situation.

f. *Scripts/Role-Plays* involves performing roles in short skits or plays to teach social skills. The students have an opportunity to practice the skills in a non-threatening environment. The scripts and role-plays can provide a visual presentation in a way that is clear for the student.

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Scenario - Jeremy, a fourth grader, without invitation would barge into a group game during recess. He demanded to be the center of attention and take the role of what he considered to be a key player. That is, he wanted to be the pitcher in baseball or the quarterback in football. When peers told him to wait his turn or not to play with them, Jeremy would wrestle the ball away from a peer causing his peers to chase him. On several occasions a fight erupted.

A social script was developed and practiced with Jeremy. After practicing the script with his teacher, the teacher accompanied him during recess to practice using it when he wanted to join a group game. Over time, the teacher's presence was faded.

Social Script – When I want to join a game at recess, I will stand near the children playing the game, but not on the field or in the way of players. I will say, "Can I join in your game?" If my friends say that I can, I will ask, "What position is open?" When I am in the game, I will follow the rules. If my friends tell me not to play because the game has already started or for some other reason, I will say, "OK, but I would like to play next time."

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g. *Classroom Wide Approaches* such as a Lunch Bunch or Friends Club are other methods that will encourage appropriate social skills and peer involvement.  Peer training is an effective method to increase social interactions of students with ASD. Educating peers on the characteristics of ASD and providing suggestions for how they can best interact with individuals with ASD is necessary. The student can also be paired with a peer buddy. (See attached sample)

h. *Incidental Teaching* is a method of instruction that is employed in natural environment (classroom, playground, etc) with the goal of strengthening functional social and communication skills.  Features of incidental teaching are:
   - Activities are of interest to the child.
   - Activities and teaching occurs in the natural social environment throughout the day. These activities may be arranged by the teacher or initiated by the child.
   - Natural reinforcers are employed; i.e., being able to play with a desired toy or eating.
   - Emphasis is on generalizing the functional skills across settings, people, and activities.

For example, John loves to play with the fire trucks. The teacher deliberately places the truck (reinforcer) out of John's reach. John then must approach the teacher to request help in obtaining the truck. As a result he gets to play with the desired object.

i. *Opportunities for meaningful contact* are provided with peers who exhibit appropriate social behavior.

   - Involve the student in shared learning arrangements.

   - Pair with buddies for walking down the hall, on the playground, and during other unstructured times.

   - Vary peer buddies across time and activities, to prevent dependence on one child.

   - Peers may be involved in providing individualized instruction.

   - Cross-age peer supports/buddies can be arranged by assigning an older student to assist the student with ASD.

   - Pair students while attending special school events such as assemblies and clubs.

   - Facilitate involvement in after-school or extracurricular activities.

   - Assist the student with ASD to support his/her classmates or younger children in other classrooms. If your school has an arrangement where a class of older students is paired with a younger class, ensure that the student with autism is also paired, and provide the necessary supports for success.

*5.* *What are the ultimate goals in teaching social skills?*
Children with ASD often have trouble generalizing and they need to be taught specific skills.  Generalization occurs when a behavior demonstrated in one specific situation is also exhibited in other similar situations.  A behavior becomes functional only when it is generalized. For this reason, generalization is one of the most important aspects of learning.  This is especially true when we are talking about socialization.  If skills are taught in school and practiced at home, they will generalize more quickly.  Generalization can be taught by increasing the number of people involved in sessions, changing the setting of the sessions, using various verbal prompts, teaching various responses, and/or doing the tasks at various times of the day.

# Training Peer Partners
(taken from Stone, 2000)

Introducing the program

- Emphasize the goal of  "helping children learn to play"
- Describe the target children (i.e., those who do not talk, make funny noises, etc.)
- Explain the peer's role (i.e., "try your best to get the child to play with you")
- Describe general strategies (i.e., use simple language, use gestures)

Training specific behaviors

1. Initiating interactions with the target child
   - Get the target child's attention (i.e., face him, call his name, tap his arm)
   - Offer a toy and suggest a play idea (i.e., "Let's play ball" and offer ball)
   - Join his activity (i.e., sit nearby, find similar materials, and do what he's doing)

2. Responding positively to initiations and communication
   - Recognize subtle nonverbal communication
   - Repeat his verbalizations

3. Maintaining interactions
   - Comment about ongoing activities (i.e., "You are throwing the ball"; "This is fun."
   - Reinforce interactive play (clap, smile," great", "Gimme 5", exaggerate positive affect)

4. Be persistent: Expect rejection at first but keep on trying

5. Ignore or redirect unusual behaviors

# Vocational/Life Skills

Like all young people, planning and preparation for the transition from school to adult life is important for individuals with ASD.  The transition from home and school to post-secondary study or employment poses difficulties for most students, but individuals with ASD face challenges unknown by others. Ultimately, the goal for all individuals, including students with ASD, is to become a productive, independent member of society.  Students with ASD, need structured learning experiences to learn the necessary skills to perform tasks and to function independently in the workforce or post-secondary setting.

In order for students with ASD to function successfully in school as well as in postsecondary settings, specific behaviors must be mastered.  These behavioral skills should be taught in school and then generalized to the home and the community.

## Essential Functional Life Skills:

Personal Management/Self-Control
- Waiting
- Finishing work
- Taking care of personal and school property
- Being quiet when appropriate
- Working independently
- Changing activities
- Accepting correction

Reciprocal Interactions
- Imitating
- Sharing
- Taking turns
- Sitting and participating in a group
- Greeting
- Asking for or seeking help
- Inviting someone to play

Reciprocating social interactions appropriately
- Listening
- Answering questions
- Giving a reliable yes/no
- Accepting help
- Making a choice

Manner of interaction
- Being polite
- Being kind
- Restraining from aggressive behavior (hitting, shouting)
- Attending while someone is talking

Learning behaviors for specific situations
- With peers when no adults are present
- In church, school, home
- In a store
- With strangers

Abstract social concepts
- Behaving appropriately
- Having a sense of timing
- Being polite
- Showing caring
- Telling the truth
- Understanding and sharing humor

Group behaviors
- Coming when called to group
- Staying in certain places
- Following group rules
- Cleaning up designated areas
- Walking, standing still, and staying to the right

## Planning for Independence

From the minute children are born, they begin to grow toward independence. Parents and adults are eager to help promote children's growth by providing them with opportunities to learn and develop their unique abilities. Life lessons are gradually and developmentally mastered either through our own experiences, or through observation of others.

Individuals with ASD may encounter the same experiences as their non-disabled peers, but they do not process or generalize this information. In addition, they may experience the same sensory levels others do, but may over or under react to touch, sounds, smells, etc. Many individuals with ASD exhibit little interest or internal motivation to learn new information, focusing their attention on their immediate personal needs or perseverating on certain objects.

Parents and educators are responsible for teaching appropriate skills and responses that typically are readily learned by others. Crucial skills and behaviors, which must be taught to individuals with ASD are:
- Understanding the concept of "finish"
- Recognizing and indicating a need for help
- Demonstrating an ability to work independently for short periods of time
- Exhibiting an ability to indicate to another that he is finished
- Understanding "rewards" as consequence of work
- Understanding the concept of "wait"
- Demonstrating the ability to refocus attention when faced with distractions
- Initiating work and play activities
- Demonstrating the ability to perform tasks involving multiple materials
- Demonstrating the ability to use trial and error to problem solve
- Exhibiting an ability to self correct when necessary

The parents of children with ASD must plan for their children's future, but they face special challenges that parents of typically developing children may not encounter. As their child matures, transition planning will help parents to work with educators and other professionals in setting their child's future goals. These goals become the building blocks from which the child's IEP is developed.

Some questions parents should consider when planning for their young child's future are:
- What does your child like to do?
- What can your child do?
- What does your child need to learn to reach his or her goals?
- Will your child develop friendships?
- Are supports needed to encourage friendships?
- Do people in the community know your son or daughter?
- Are supports needed to structure time for recreation or exercise?
- Does your child have any special interests that others may share as a hobby?
- Can you explore avenues for socializing such as religious affiliation or volunteer work?

Additional considerations for long range planning:
- What interests does your child have that may lead to future employment areas?
- What plans do you have for your child's education (after high school)?
- What plans do you have for your child's employment (competitive or supportive)?
- Where can your child go to find employment and training services?
- What transportation will your child use?
- Where will your child live?
- How will your child make ends meet?
- Where will your child get health insurance?

## Vocational and Transition Assessment

Students' parents must be an integral part of the assessment and planning process. They have an important role to play in helping the student acquire appropriate personal-social behaviors, necessary life skills and in moving toward greater independence. Parents also are able to provide useful information about students' interests, skills and motivations.

Before any skills are taught, information must be gathered in regard to the individuals present level of functioning. One of the most effective means of gathering information is through to direct observation of the student in various environments. For example,

Questions to consider during observation are:
- What activities does the student prefer?
- What activities does the student dislike?
- What materials does the student prefer?
- What materials does the student dislike?
- Does the student over or under react to sounds, taste, touch, etc.?
- What are the student's favorite foods or toys?
- How does the student communicate his wants or needs?
- What emotions does the student exhibit and under what conditions?
- What types of prompts does the student require?
- What type of rewards will the student work for?
- Does the student exhibit any behaviors that interfere with his or others learning?

Information from informal and formal assessments is used to develop goals, record progress and maintain student's skills and to help answer the following questions.

1. *What are the life skills the student will need to develop during his formative years and how do they eventually translate into skills that will allow him to function effectively in a workplace?*
   There are several classroom work behaviors that address both in school and postsecondary behavioral expectations. While these behaviors may be introduced and/or practiced in the classroom, it is essential that students are helped to generalize them in community or work environment.

- *Communication* - The student must be able to communicate basic needs, such as asking for help and accessing information. When he does communicate, it must be in a socially appropriate manner. He must possess an understanding of his work routine and expectations of his job. There will be times he will have to initiate contact with his supervisor or other authority figure. He may also be required to relay information to others.

- *Social Skills* - It is conceivable that the student will work along-side co-workers; therefore, he should be taught to tolerate distractions and possible intrusions into his personal space. In order to maintain a favorable environment, he should learn to interact with and respond appropriately to social contacts by his co-workers and supervisors. Since managing break time or down time at work may be difficult, he should have be taught appropriate ways to manage this time. Perhaps most importantly, he must be able to care for himself and maintain acceptable personal hygiene standards.

- *Socially Appropriate Behavior* - The student will be expected to work steadily without disruptions and without displaying or engaging in disruptive behaviors. He must be able to accept correction and supervision without becoming upset. His behavior during his breaks must be socially acceptable.

- *Rate and Production* - The student will be required to work steadily in an independent manner and/or with limited supervision. He must maintain a reasonable production rate across the day and across time. As he becomes more adept at his job, his production rate should increase. He must be able to transition to new tasks in a reasonable period of time with adequate productivity.

- *Accuracy and Quality* - The student must be able to complete tasks with sequenced steps. He will be expected to must demonstrate the ability to prepare his work area and do a variety of tasks, while consistently maintaining the quality of his work over time.

2. ***What are helpful planning strategies for students with ASD?***
   One useful approach developed in Vermont is called MAPS. This is an approach to student and family directed planning for transition. The student and team brainstorm about these five areas related to the student's life:
   - His/her history?
   - Dreams?
   - Fears?
   - Needs?
   - Who is important to him/her?

   This information is then used by the team and student for transition planning. Four areas are considered:
   - Employment
   - Independent living
   - Post-secondary education and training
   - Community participation

*Personal Futures Planning* is an informal planning process that provides an opportunity for a group of people (family, friends, teachers, etc.) to meet with a person with a significant disability to help him/her plan a desirable future. The process focuses on goals for employment and independence, identifies resources to achieve the goals, and plans activities that lead to a successful outcome for the individual.

3.  ***How should I teach Self-Advocacy Skills?***
    It is useful to teach self-advocacy through involving students in their own IEP/ITP development.  Some basic steps in the process are to teach students about the disability laws, help them understand the IEP, involve them in selecting goals and objectives and participate in a meaningful way in the IEP meeting.

    It is also important to help students understand their strengths as well as their limitations. Young people benefit from being taught skills that compensate for their limitations.  They also benefit from knowing about accommodations that help them learn both in school and on the job.

    a.  *School to Postsecondary Transition Planning*
        The student and each member of the CSC, as well as representatives from adult agencies and the community have an essential role to play in the development of goals and activities in the IEP/ITP.

        A variety of training options may be available for young adults. They include:
        -   On-the-job training
        -   Adult education classes
        -   Vocational training
        -   Community colleges
        -   Colleges (4 year institutions)

        It is recommended that teachers and parents explore career information with school guidance counselors.  Two useful organizations that provide postsecondary training options are:
        HEATH - National Clearinghouse on Postsecondary Education for Individuals with Disabilities, and
        NICHCY - National Information Center for Handicapped Children and Youth

        At every stage in the student's school career, teachers should provide them with opportunities to:
        -   Become involved in career exploration activities
        -   Visit with a school counselor to talk about interests and capabilities
        -   Participate in vocational assessment activities
        -   Use information about interests and capabilities to make preliminary decisions
        -   about possible careers:  academic VS vocational or a combination
        -   Make use of books, career fairs, and people in the community to find out more about careers of interest.

*b. In High School - Define Career/Vocational Goals*
- Work with school staff, family, and people and agencies in the community to develop transition plans. Make sure that the IEP includes transition goals that are implemented are assessed.
- Identify and take high school courses that are required for entry into college, trade schools, or careers of interest.
- Identify and take vocational classes offered in high school.
- Become involved in early work experiences, such as job try-outs, summer jobs, volunteering, or part-time work.
- Re-assess interests and capabilities, based on real world or school experiences.  Is the career field still of interest?  If not, re-define goals.
- Participate in on-going vocational assessment and identify gaps of knowledge or skills that need to be addressed.  Address these gaps.

If you decide to pursue postsecondary education and training prior to employment, consider these suggestions from the Autism Society of America:

- Identify post-secondary institutions (colleges, vocational programs in the community, trade schools, etc.) that offer training in a career of interest. Write or call for catalogues, financial aid information, and application. Visit the institution.

- Identify what accommodations would be helpful to address your special needs.  Find out what supports are available for students with disabilities.

## Types of Employment

a. *Competitive employment* requires the individual with ASD to function independently. Students follow the same employment procedures as others in the competitive job market. The individual follows the same rules to apply for employment.  They are:
    - Determine what jobs are available, based on their skills or interests
    - Obtain the job application
    - Complete the job application and return it to the designated location
    - Be prepared to go to an interview if called
    - Promptly attend interview and adhere to appropriate social rules and
    - Attire should be appropriate for the situation
    - Ask and respond to questions in an appropriate manner

b. The goal of *supported employment* is to provide a stable and predictable work environment whereby the individual with ASD can, as independently as possible, be a contributing member of the work force. ASD individuals are integrated into a predetermined workplace. Appropriate workplaces are chosen based on information and data collected from the vocational assessments and pertinent interviews.  The individual's abilities and interests are a priority when determining placement.

Several key factors to consider when selecting *appropriate work situations* include:
- jobs that are predictable and have potential for clearly defined work tasks
- jobs which can be adapted to the individual's need for structure
- employers and co-workers who are receptive to training
- employers and co-workers who are willing to create an environment where an individual is more likely to utilize individual strengths.

c. *Support systems* are used and will vary according to the individual needs. Examples of support systems are:
- <u>Job Coach or Mentor Support Systems</u>. The job coach or mentor is usually a trained professional employed by an agency to provide on-going support for individuals with disabilities. Job coaches teach the individual with ASD the necessary vocational and social skills required in the employment setting. They also educate coworkers and supervisors about autism and act as liaisons between the ASD and their employer. Co-workers may be assigned to provide some support on the job.

- <u>Environmental supports</u>. Examples of environmental supports are the use of visual schedules, task cards, and visual boundaries.

- <u>Sensory supports</u>. These may take into account unusual sensory responses of the individual. Accommodations are made for these discrepancies.

Based on the type and amount of support offered to individuals, various models of employment may be considered. Models include:

- *One to One* - In this model, the individual with ASD requires intensive support. A job coach is located on the work site throughout the workday.

- *Mobile Crew* - In this model, the individuals with disabilities require less intensive support. One to three individuals with ASD move from site to site, completing jobs, such as, housecleaning and lawn care. The job coach is available on the site to provide intermittent support.

- *Group Shared Support Site (Enclave)* - This model allows two to five individuals with ASD to work at one place of business with one job coach providing full time on-site support.

- *Independent* - For individuals who need less support, and have independent work skills, this model reflects a more typical employee situation. One job coach supports 12 individuals with autism, providing flexible support each week, depending on the needs of the individual.
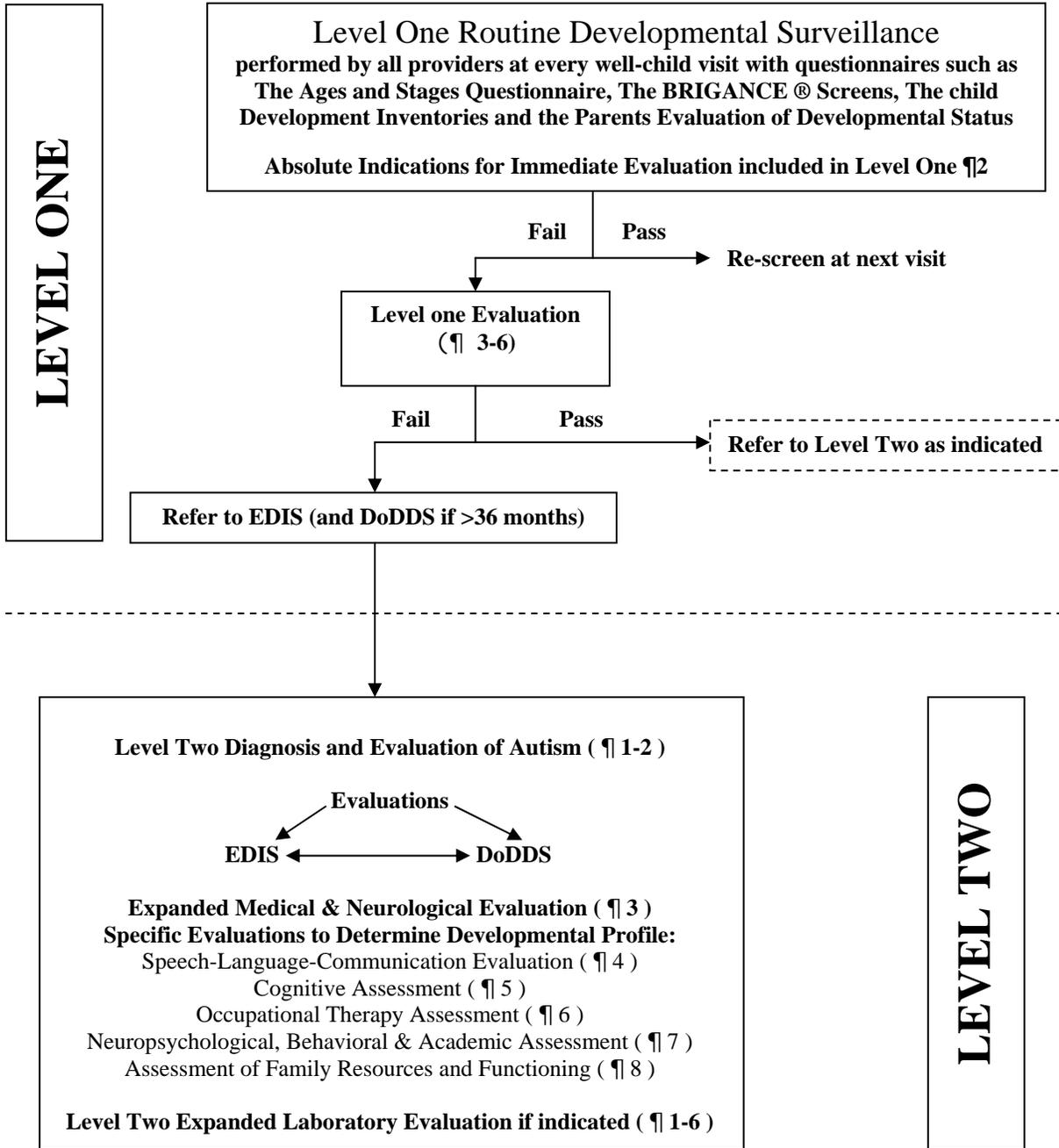
d. *Residential Options*
Some individuals with ASD may not be able to live independently. They may require adult supervision in order to perform everyday tasks and routines. Alternately, some parents may wish to keep their child in their home. In this case, specific plans must be made to arrange

for their child's care, in the event the parents are not able to continue to care for their ASD child. Parents are advised to make these arrangements through a lawyer.  A variety of options are available, depending on the ASD individual's abilities and personal preferences.  They include:

- Individual homes or apartment
- Cooperative housing
- Rent-subsidized apartment
- Room and board
- Dormitories
- Community residence (supported living)
- Supervised apartments
- Adult foster care

Because of the limited number of facilities available, it is essential the individual with ASD and his/her family pursue options as soon as possible.

# Department of Defense Autism Clinical Pathway[1]

## LEVEL ONE

**Level One Routine Developmental Surveillance**
performed by all providers at every well-child visit with questionnaires such as
The Ages and Stages Questionnaire, The BRIGANCE ® Screens, The child
Development Inventories and the Parents Evaluation of Developmental Status

**Absolute Indications for Immediate Evaluation included in Level One ¶2**

**Fail**      **Pass** → **Re-screen at next visit**

**Level one Evaluation
( ¶ 3-6)**

**Fail**      **Pass** → **Refer to Level Two as indicated**

**Refer to EDIS (and DoDDS if >36 months)**

## LEVEL TWO

**Level Two Diagnosis and Evaluation of Autism ( ¶ 1-2 )**

**Evaluations**

**EDIS** ←→ **DoDDS**

**Expanded Medical & Neurological Evaluation ( ¶ 3 )**
**Specific Evaluations to Determine Developmental Profile:**
Speech-Language-Communication Evaluation ( ¶ 4 )
Cognitive Assessment ( ¶ 5 )
Occupational Therapy Assessment ( ¶ 6 )
Neuropsychological, Behavioral & Academic Assessment ( ¶ 7 )
Assessment of Family Resources and Functioning ( ¶ 8 )

**Level Two Expanded Laboratory Evaluation if indicated ( ¶ 1-6 )**

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[1] Modified and adapted from: Filipek, PA, et al. (1999). The Screening and Diagnosis of Autistic Spectrum Disorders
Recommendations Section, *Journal of Autism and Developmental Disorders*, in press.

**Level One: Routine Developmental Screening**

**All professionals involved in early child care should be sufficiently familiar with the signs and symptoms of autism to recognize possible social, communicative, and behavioral indicators of the need for further diagnostic evaluation.**

1. Developmental screening should be performed at every well-child visit and any age thereafter if concerns are raised about social acceptance, learning and behavior. Recommended screening tools include *The Ages and Stages Questionnaire*, *The BRIGANCE® Screens*, *The Child Development Inventories*, and the *Parents Evaluation of Developmental Status*. Also recommended is the use of Specific Developmental Probes, to specifically identify any parental concerns about development. The Denver II (formerly the Denver Developmental Screening Test-Revised) is not recommended as an appropriate developmental screen in this capacity.

2. Failure to meet the following developmental milestones (nearly universally present by the age indicated) is an absolute indication to proceed with further evaluations. Delay in referral for such testing may delay early diagnosis and treatment and affect the long-term outcome.
   - No babbling by 12 months
   - No gesturing (pointing, waving bye-bye, etc) by 12 months
   - No single words by 16 months
   - No 2-word spontaneous (not just echolalic) phrases by 24 months
   - Any loss of any language or social skills at any age.

3. Concern regarding a speech, language, or hearing problem by parent or practitioner should prompt an immediate referral for a formal audiologic assessment, regardless or whether the child "passed: a neonatal hearing screen. Audiological assessment should be performed at centers with qualified and experienced pediatric audiologists, with current audiological testing methods and technologies.

4. Periodic lead screens should be performed in any autistic child with pica.

5. Professionals involved in early child care should also become familiar with and use one of the screening instruments for children with autism: e.g., the Checklist for Autism in Toddlers (CHAT), the Pervasive Developmental Disorders Screening Test (PDDST), or, for older verbal children, the Australian Scale for Asperger's Syndrome.

6. The social communication and play development and behavior of siblings of children with autism needs to be very carefully monitored for autism-related symptoms, language delays, learning difficulties, and anxiety or depressive symptoms.

7. A referral for early intervention should be initiated by the primary care practitioner. Children less than 36 months of age should be referred to EDIS; children over 36 months to EDIS and DoDDS. Health care providers and others need to increase their comfort level in talking with families about autism, which is a treatable disorder with a wide range of outcomes. Thus, information about the benefits of early intervention for children with autism needs to be widely disseminated to health care professionals and others working with young children and families.

**Should be performed by professionals who specialize in the treatment of children with autism.**

1. The diagnosis of autism should be accurately made based on clinical and DSM-IV criteria, and should include a diagnostic instrument with at least moderate sensitivity and good specificity for autism. Such interview instruments include the *Gilliam Autism Rating Scale, The Parent Interview for Autism*, *The Pervasive Developmental Disorders Screening Test-Stage 2*, or the *Autism Diagnostic Interview-Revised*. Direct, structured observation instruments include the *Screening Tool for Autism in Two-Year-Olds*, the *Childhood Autism Rating Scale*, and the *Autism Diagnostic Observation Schedule-Generic*.

2. Diagnostic evaluations must also address factors that are not specific to autism, including language impairment, mental handicap, and presence of over-activity, aggression, anxiety, depression or specific learning disabilities (which can significantly affect outcome and treatment of autistic individuals).

3. An expanded medical and neurological evaluation needs to assess the obstetric, perinatal and developmental histories (including milestones, regression in early childhood or later in life, encephalopathic events, attention deficits, seizure disorder, depression or mania, troublesome behaviors such as irritability, self-injury, sleep and eating disturbances) and pica (possible lead exposure). Family History should specifically probe in nuclear and extended family for autism, mental retardation, Fragile X syndrome, and tuberous sclerosis complex. Family members with affective or anxiety disorder should be identified. The Physical and Neurological Examination should include: longitudinal measurements of head circumference, unusual features (facial, limb, stature, etc) suggesting the need for genetic evaluation, neurocutaneous abnormalities (requiring an ultraviolet-Wood's lamp examination), gait, tone, reflexes, cranial nerves, and mental status including verbal and nonverbal language and play.

4. A speech-language-communication evaluation should be performed by a language pathologist with training and expertise in evaluating children with autism. A variety of strategies should be used in this assessment, including but not limited to direct standardized instruments, naturalistic observation, parental interviews, and procedures focusing on social-pragmatic abilities. Results should always be interpreted relative to a child's cognitive, motor and socio-emotional abilities.

5. A cognitive evaluation should be performed by a psychologist or developmental pediatrician experienced in autism testing, and should include assessment of family (parent and sibling) strengths, talents, stressors and adaptation, as well as resources and supports. Psychologists working with children with autism should be familiar with a range of theories and approaches specific to this population. Psychological instruments should be appropriate for the mental and chronological age, should provide a full range (in the lower direction) of standard scores, including independently scored measures of verbal and nonverbal abilities, should provide an overall index of ability, and should have current norms which are independent of

**Level Two: Diagnosis and Evaluation of Autism**

social ability. Adaptive functioning should be assessed for any child with a mental handicap. Recommended instruments include the *Vineland*

*Adaptive Behavior Scales* and the *Scales of Independent Behavior-Revised*.

6.   Screening and full evaluation for sensorimotor skills (including assessment of gross and fine motor skills, praxis, sensory processing abilities, unusual or stereotyped mannerisms, and the impact of these components on the autistic person's life) by qualified professionals (occupational therapists or physical therapists with expertise in testing persons with autism) should be considered. An occupational therapy evaluation is indicated when an autistic individual is experiencing disruptions in functional skills or occupational performance in the areas of play or leisure, self-maintenance through activities of daily living, or productive school and work tasks. The occupational therapist may evaluate these performance areas in the context of different environments, and through activity analysis, the contributions of performance component abilities (e.g., sensory processing, fine motor skills, social skills) in goal-directed everyday routines.

7.   Neurophychological, behavioral, academic, and cognitive assessments (to include communication skills, social skills and relationships, educational functioning, problematic behaviors, learning style, motivation and reinforcement, sensory functioning, and self-regulation) should be performed.

8.   Assessment of family functioning should be performed to determine the parents' level of understanding of their child's condition and offer appropriate counseling and education. The need for (and availability of) various social services to provide respite and other supports should be assessed. Professionals should assess family resources and family dynamics (in relation to parenting and behavior management strategies).

9.   Re-evaluation at least within a year of initial diagnosis and continued monitoring is an expected aspect of clinical practice, because relatively small changes in developmental level affect the impact of autism in the preschool years.

**Level Two-Laboratory Evaluation may include the following, as indicated:**

**Level Two: Laboratory Evaluation**

1. As recommended by the American College of Medical Genetics, selective metabolic testing should be initiated by the presence of suggestive clinical and physical findings (history of lethargy, cyclic vomiting, early seizures; dysmorphic or coarse features; and mental retardation (or if it cannot be excluded). If there is any question concerning the adequacy of newborn screening, it should be repeated.

2. Genetic testing, specifically DNA analysis for Fragile X and high resolution chromosome studies (karyotype), are indicated for a diagnosis of autism, mental retardation (or if mental retardation cannot be excluded), if there is a family history of Fragile X or undiagnosed mental retardation, or if dysmorphic features are present. It should be understood, however, that there is little likelihood of positive karyotype or Fragile X testing in the presence of high-functioning autism. If a family declines genetic testing, they should be counseled to inform extended family members of the potential genetic risks of this disorder so they may seek appropriate genetic counseling. Although there is no current method to detect autism prenatally, parents of children with autism should be counseled to inform them of the fifty-fold increased risk of having another autistic child (1 in 10 to one in 20, as compared with 1 in 500 in the general population).

3. Prolonged sleep deprived EEG with adequate sampling of slow wave sleep indications include evidence of clinical seizures, history of regression (clinically significant loss of social and communicative function), and where there is a high index of clinical suspicion that epilepsy, clinical or sublinical, may be present. There is inadequate evidence at the present time to recommend EEG studies in all individuals with autism. Other event-related potentials and magnetoencephalography are considered to be research tools in the evaluation of autism at the present time, without evidence of routine clinical utility.

4. Neuroimaging may be indicated by the presence of neurologic features *not explained by the diagnosis of autism* (e.g. asymmetric motor examination, cranial nerve dysfunction, severe headache) in which case the usual standards of practice apply. Routine clinical neuroimaging does not have any role in the diagnostic evaluation of autism at the present time, even in the presence of autistic megalencephaly.

5. Functional imaging modalities (fMRI, SPECT and PET) presently are considered solely as research tools in the evaluation of autism.

6. There is inadequate evidence to support routine clinical testing of individuals with autism for: hair analysis (trace elements), celiac antibodies, allergies (in particular food allergies for gluten, casein, candida and other molds), immunological or neurochemical abnormalities, micronutrients (such as vitamin levels), intestinal permeability studies, stool analysis, urinary peptides, mitochondrial disorders (including lactate and pyruvate) thyroid function tests, or erythrocyte glutathione peroxidase.

**Other Recommendations**

**The role of medical professionals can no longer be limited to just the diagnosis of autism. Professionals must expand their knowledge and involvement to be better able to counsel families concerning available and appropriate treatment modalities, whether educational, empirical, or "just off the web." In addition, professionals must be familiar with the federal law mandates of a free and appropriate education for all children from the age of 36 months, and in some states, from zero to three. Screening tools for older children with milder symptoms of autism need to be made widely available in educational and recreational settings, where these children's difficulties are often most visible, as well as in health and allied health settings. Pediatricians can and should play an important role in raising a suspicion of autism, paving the way to appropriate referral to professionals knowledgeable about autism in verbal individuals.**

1. Existing managed-care policy must change as follows:
   - ♦ Extremely brief well-child visits must increase in duration, with appropriate compensation, to permit the implementation of routine developmental screening as recommended above.
   - ♦ Short specialty visits must also increase in duration, with appropriate compensation, to permit the use of appropriate diagnostic instruments, as recommended above.
   - ♦ Autism must be recognized as a medical disorder, and managed care policy must cease to deny appropriate medical or other therapeutic care under the rubric of "developmental delay" or "mental health condition"

2. Existing governmental agencies who provide services for individuals with developmental disabilities must also change their eligibility criteria to include all individuals on the autistic spectrum, whether or not the relatively narrow criteria for Autistic Disorder are met, who nonetheless must also receive the same adequate assessments, appropriate diagnoses and treatment options as do those with the formal diagnosis of Autistic Disorder.

3. Public awareness and dissemination activities regarding the signs and symptoms of autism must occur throughout communities, to provide information to parents, childcare workers, health care settings, and community centers. Small, attractive fliers targeting symptoms, needs, and outcomes of very young children and also older children should be developed and disseminated widely, in collaboration with the national autism societies and associations, schools, health, and allied health agencies which need to join in this concerted effort.

4. Increased education of health-related and education-related professionals about autism must occur at the pre-service level. Professionals must learn to provide more than a diagnosis and a telephone number for governmental services to parents. Trainees in general and developmental pediatrics, psychiatry, neurology, early childhood education, speech and language pathology, occupational therapy, physical therapy, psychology, nursing, child care providers, public health, education and other disciplines need markedly increased knowledge about the range of symptoms of autism both early and later in life, about the educational and community needs of autistic

individuals and the potential outcomes of autism.  They must also learn how to discuss potential risks of autism with families.

# RATING OF FRIENDSHIP OR TEAM SKILLS CHECKLIST

**Student's Name:** _____    **Location:** _____

**Date:** _____    **Start Time:** _____    **Finish Time:** _____    **Observer:** _____

*Check each time the skill is observed during the indicated timeframe*

| Friendship Skills | | Rating Friendship/Team Skills | | | | | | | | | | | Comments/Observations: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Entry Skills** | *Recognizes the cues* | | | | | | | | | | | | |
| | *Appropriate greeting* | | | | | | | | | | | | |
| | *Welcoming others* | | | | | | | | | | | | |
| **Assistance** | *Given* | | | | | | | | | | | | |
| | *Sought* | | | | | | | | | | | | |
| **Compliments** | *Given* | | | | | | | | | | | | |
| | *Received appropriately* | | | | | | | | | | | | |
| **Criticism** | *Appropriate* | | | | | | | | | | | | |
| | *Copes with* | | | | | | | | | | | | |
| **Accepting Suggestions** | *Incorporating other's ideas* | | | | | | | | | | | | |
| | *Indicates agreement* | | | | | | | | | | | | |
| **Reciprocity** | *Conversation* | | | | | | | | | | | | |
| | *Activities* | | | | | | | | | | | | |
| | *Not dominant* | | | | | | | | | | | | |
| | *Not subordinate* | | | | | | | | | | | | |
| **Interest** | *Listening* | | | | | | | | | | | | |
| | *Looking* | | | | | | | | | | | | |
| **Characterization** | *Chooses friends with similar interests* | | | | | | | | | | | | |
| | *Adapts to the character of others* | | | | | | | | | | | | |
| | *Recognizes bad character* | | | | | | | | | | | | |
| **Pragmatics** | *Keeping on track* | | | | | | | | | | | | |
| | *Avoids monologue* | | | | | | | | | | | | |
| | *Not confused by literal interpretation* | | | | | | | | | | | | |
| | *Appropriate humorous comments* | | | | | | | | | | | | |
| | *Appropriate volume* | | | | | | | | | | | | |

(Dr. Tony Attwood, January 2001)                                                                                                      1

**Student:** _____

| Friendship Skills | | Rating Friendship/Team Skills | Comments/Observations: |
|---|---|---|---|
| **Cooperation** | *Contributes to common goal* | | |
| | *Accepts the rules of the game* | | |
| | *Patient* | | |
| | *Aware of personal body space* | | |
| | *Aware of appropriate touching* | | |
| | *Copes with mistakes* | | |
| | *Copes with being interrupted* | | |
| | *Tells truth* | | |
| | *Gives guidance* | | |
| | *Gives encouragement* | | |
| | *Avoids behaving in a silly manner* | | |
| **Conflict Resolution** | *Compromise* | | |
| | *Avoids aggression* | | |
| | *Age appropriate* | | |
| | *Accepts mistakes of others* | | |
| | *Copes with change* (new ideas, being interrupted) | | |
| | *Does not consciously torment/provoke* | | |
| | *Recognizes the perspectives of others* | | |
| | *Recognition of being unfair* | | |
| | *Not unduly suspicious* | | |
| | *Recognizes unfriendly acts* | | |
| | *Uses verbal persuasion* | | |
| | *Avoids physical response* | | |
| | *Avoids emotional blackmail* | | |
| | *Seeks negotiation* | | |
| | *Seeks compromise* | | |
| | *Seeks referee* | | |
| | *Uses disengagement* | | |
| | *Forgives* | | |

**Student: _____**

| Friendship Skills | | Rating Friendship/Team Skills | | | | | | | | | | Comments/Observations: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Empathy | *Gesture* | | | | | | | | | | | | |
| | *Facial expression* | | | | | | | | | | | | |
| | *Tone of voice* | | | | | | | | | | | | |
| | *Recognizes signs of annoyance* | | | | | | | | | | | | |
| | *Recognizes boredom* | | | | | | | | | | | | |
| | *Recognizes approval* | | | | | | | | | | | | |
| | *Recognizes embarrassment* | | | | | | | | | | | | |
| | *Not possessive of their friend* | | | | | | | | | | | | |
| | *Inhibits comments that might offend* | | | | | | | | | | | | |
| | *Apologizes for mistakes* | | | | | | | | | | | | |
| | *Offers comfort* | | | | | | | | | | | | |
| Avoiding | *Seeks solitude appropriately* | | | | | | | | | | | | |
| Ending | *Closure appropriate* | | | | | | | | | | | | |

**Notes:**

# VOCATIONAL ASSESSMENTS

| INSTRUMENT | AGE RANGE | EMPHASIS |
|---|---|---|
| 1. Career Evaluation System: Series 300 (Goodwill Industries), Chicago, IL) <br> Career Evaluation System <br> 7788 Milwaukee Ave <br> Niles, IL  60648 | 16 → 17, Adults | • Aptitude Test, Career Guidelines, Personnel Selection, Vocational Test, Adolescents, Adults, Career Counseling Leadership, and Performance Test <br> • Measures basic skills and abilities (note the following series: <br> • 100 – Business/Industry <br> • 200 – For Poor readers <br> • 300 – M. R. person |
| 2. Career Scope Version 2.0 <br> Vocational Research Institute <br> 1528 Walnut Street, Suite 1502 <br> Philadelphia, PA  19102 <br> Phone:  (215) 875-7383 <br> Fax: (215) 875-0198 <br> Web site: http://www.vri.org <br> e-mail: info@vri.org | Middle School to Adults | • Self administered interest inventory or aptitude assessment, designed with the inexperienced computer user in mind.  It generates two types of reports – each for a different end use.  The Career Scope Counselor Report for the Professional Career Counselor and the Career Scope.  Assessment Profile for the evaluee. |
| 3. Comprehensive Vocational Evaluation System <br> A Systematic Approach to Visually Impaired and Blind <br> Dial, Jack G. and others <br> McCarron – Dial System <br> P.O. Box  45628 <br> Dallas TX  75245 | Visually Impaired and Blind <br> 12 → Adults | • Blindness, Visual Impairments, Vocational Evaluation Neuropsychology, Rehabilitation, Emotional Adjustment, Spatial Ability, Verbal Ability, Cognitive Ability, Perceptual Motor Learning, <br> • Neuropsychological assessment for person with visual problems.  Measure essential verbal-spatial.  Cognitive, sensorimotor, and emotional coping abilities.  It assesses vocational functioning. |
| 4. Continuing Education Assessment Inventory For Mentally Retarded Adults <br> (Dr. Gertrude A. Barber) <br> The Barber Center Press <br> 136 East Avenue <br> Erie, PA  16507 | 12 → 17, Adults | • Competencies divided into 34 specific skills for assessment of M.R. teenagers and adults. |
| 5. Enderle-Severson Transition Rating Scale (Enderle-Severson, 1991) <br> Practical Press <br> P.O. Box 455 <br> Moorhead, MN  56561-0455 <br> (218) 233-2848 | All disability groups Mild to severe levels of disability <br> Ages 14 → 21 | • The scale is an informal, criterion-referenced instrument. <br> • Subscales include Jobs and Job Training, Recreation, Leisure, Home Living, and Post-Secondary Training and Learning Opportunities. <br> • Scale is completed by the student's teacher and a parent or primary caregiver.  Framework for Transition planning. |

| | | |
|---|---|---|
| 6.  Geist Picture Interest Inventory<br>Western Psychological Services<br>Order Department<br>12031 Wilshire Blvd<br>Los Angeles, CA  90025 | 12 → 17, Adults | • Adult, Educational Disadvantaged, Interest Inventory Secondary School Students, Vocational Interests, Visual Measures.<br>• Identify vocational and vocational interest of disadvantaged and educationally deprived population. |
| 7.  Life Centered Career Education (LCCE)<br>Performance Battery Council for Exceptional Children<br>1920 Association Drive<br>Reston, VA  20191-1589<br>(888) 232-7733 | Mild cognitive disabilities<br>Moderate to severe learning disabilities<br>Mild to moderate behavioral disabilities<br>Grades 7 - 12 | • The battery is a nonstandardized, criterion-referenced instrument providing skill rather than knowledge assessment of critical like skills.<br>• Items are based on skills related to LCCE Curriculum<br>• Estimated time for administration is 3-4 hours. |
| 8.  Life Skills Inventory, (Brigance, 1995)<br>Curriculum Association<br>P.O. Box 2001<br>North Billerica, MA  01862-9914<br>(800) 225-0248 | All disability populations, high school ages and adults<br>Mild cognitive disabilities, with reading grade levels 2 – 8 | • Subscales include Speaking and Listening, Functional Writing, Words on Common Signs and Warning Labels, Telephone Skills, Money and Finance, Food, Clothing, Health, Travel, and Transportation.<br>• Administered individually or in groups; administration may be oral or written.<br>• Criterion referenced assessment, providing specific knowledge and skill assessments for life skill items paired with instructional objectives.<br>• Learning Record Book provided to show color-coded record of performance and instructional objectives generated from the results.<br>• Optional Program Record Book is available to track progress of a group or class; Optional Rating Scales are available to evaluate behavior attitudes, and other traits related to life skills and employability.<br>• Companion Assessment to Employability Skills Inventory (Brigance, 1995) |
| 9.  Mini-Battery of Achievement (MBA)<br>Riverside Publishing Company<br>8420 Bryn Mawr Ave<br>Chicago, IL  60631 | 4 → Adults | • Norm referenced test, attention on the following areas:<br>  • Vocational Rehabilitation<br>  • Occupational Training<br>  (for job placement, decision and research) |
| 10. Quality of Student Life Questionnaire (Schalock & Keith, 1995)<br>IDS Publishing<br>P.O. Box 389<br>Worthington, OH  43085<br>(614) 885-2323 | Mild to severe cognitive disabilities<br>Ages 18 and over | • Subscales include Satisfaction, Competence/Productivity, Empowerment/Independence, Social Belonging/Community Integration.<br>• Administered in interview format<br>• Alternative format is possible by obtaining two independent rating and averaging<br>• Items are rated on a 3-point scale<br>• Administration time is estimate at 20 minutes.<br>• Scores in percentile ranks are based on standardization samples |

| 11. Quality of Student Life Questionnaire (Schalock & Keith, 1995) IDS Publishing P.O. Box 389 Worthington, OH 43085 (614) 885-2323 | All disability populations, ages 14 – 25 Mild through severe levels of disability | • Subscales include Satisfaction, Well-Being, Social Belonging, Empowerment/Control. • Administered in interview format • Alternative format is possible by obtaining two independent rating and averaging • Items are rated on a 3-point scale • Administration time is estimate at 15 minutes. • Scores in percentile ranks are based on secondary and post secondary standardization samples. |
|---|---|---|
| 12. Reading Free Vocational Interest Inventory Elbern Publication P.O. Box 09497 Columbus, OH 43209 | 13 → Adults | • Interest Inventories, Learning Disabilities, Mental Retardation, Nonverbal Test, Vocational Interest, Free Choice Techniques • A non-reading vocational performance test in forced choice format for selecting. |
| 13. Sage Vocational Assessment System Key Systems 2055 Long Ridge Road Stanford, CA 06903 | Disabled population, group or individually administered 12 → Adults | • Cognitive-ability employee attitude, personality traits, vocational aptitude, vocation evaluation, vocational interest aptitude test, aptitude measure, learning impairment, and interest inventories. • A five unit system with 12 related interests. May be used with haring or visually impaired or non-reader. It assesses 11 aptitudes. Also measures temperament factors. |
| 14. Social and Prevocational Information Battery-Revised (SPIB-R) (Halpern, 1986) CTB/McGraw-Hill Monterey, CA 93942 (800) 538-9547 | Adolescents and adults with mild mental retardation or low functioning students with disabilities Designed especially for secondary school students 14 → Adults | • Subscales include Banking, Budgeting and Purchasing Skills, Job Skills and Job-Related Behavior, Home Management, Health Care, Hygiene and Grooming, and Ability to Read Functional Words. • Verbally administered except for items on functional signs. • 277 items in the battery • 20-30 minutes administration time |
| 15. Test for Everyday Living (Halpern, 1979) CTB/McGraw-Hill Monterey, CA 93942 (800) 538-9547 | All junior high students who are average to low functioning Senior high school students in remedial programs, including those labeled as having learning disabilities 12 → Adults | • Subtests include Purchasing Habits, Banking, Budgeting, Health Care, Home Management, Job Search Skills, and Job-Related Behavior. • Verbally administered except where reading skills are critical to an item. • 245 items across seven subtests • Diagnostic at the subtest level • 20-30 minutes estimated administration time per subtest |

| | | |
|---|---|---|
| 16. Transition Behavior Scales<br>Hawthorne Educational Service<br>800 Gray Oak Drive<br>Columbia, MO  65201<br>(573) 874-1710 | Any disability group<br>Mild to severe levels of severity<br>Elementary → Adults | • Subscales include Work-Related Behaviors, Interpersonal Relations, Social/Community Expectations<br>• Ratings are completed by at least three persons<br>• Items are rated on a 3-point scale.<br>• Estimated completion time is 15 minutes<br>• Score in percentile rank are based on national standardized sample |
| 17. Transition Planning Inventory<br>(Clark & Patton, 1995)<br>Pro-Ed<br>8700 Shoal Creek Blvd<br>Austin, TX  78757<br>(512) 451-3246 | All disability populations, ages 14 → Adults<br>Mild through severe levels of disability | • Areas covered in the inventory include Employment, Further Education/Training, Daily Living, Living Arrangements, Leisure Activities, Community Participation, Health, Self-Determination, Communication and Personal Relationships<br>• 0-5 rating scale completed independently by student, parent/guardian, and a school representative<br>• Administration may be self-administration, guided administration, or verbal administration<br>• 56 inventory items plus open-ended items on the student's form (optional on parent form) related to preferences and interests<br>• A profile sheet permits visual comparisons of the respondents' responses to each item<br>• Planning notes form encourages transformation of relevant assessment data into IEP goals, objectives, and interagency linkages |
| 18. Vocational Aptitude Battery<br>Progressive Evaluation System Company<br>21 Paulding Street<br>Pleasantville, NY  10570 | 13 → 17 Adults | • Aptitude test career guidance, job placement academics, aptitude |

# Vocational Evaluation Checklist for an Individual with Autism

**Student:** _____  **Work Setting:** _____

**Evaluator:** _____  **Date:** _____

What are this student's strengths/limitations?

| | Can do | Can do with help | Comments |
|---|---|---|---|
| **COMMUNICATION:** | | | |
| Understands verbal language | | | |
| Requests things desired/needed | | | |
| Expresses refusals | | | |
| Engages in social conversation | | | |
| Initiates communication | | | |
| Uses pictures/gestures to communicate | | | |
| Recognizes words | | | |
| Comprehends sentences | | | |

| | Can do | Can do with help | Comments |
|---|---|---|---|
| **SOCIAL SKILLS:** | | | |
| Initiates social interaction | | | |
| Responds to social interaction | | | |
| Shares with peers | | | |
| Waits when necessary | | | |
| Takes turns with peers | | | |
| Models from peers | | | |

| | Can do | Can do with help | Comments |
|---|---|---|---|
| **WORK BEHAVIORS:** | | | |
| Works accurately | | | |
| Works at appropriate rate | | | |
| Follows rules | | | |
| Stays on task | | | |
| Keeps things in order | | | |
| Finishes a job | | | |
| Works neatly | | | |
| Can do repetitive tasks | | | |
| Can do multi-step tasks | | | |
| Can solve easy problems | | | |
| Remembers steps in activities | | | |
| Can do 2-3 step long sequences | | | |

(Suomi, Ruble, & Dalrymple, 1993)

|  | Can do | Can do with help | Comments |
|---|---|---|---|
| **MOTOR:** | | | |
| Has strength to do job | | | |
| Has gross motor ability | | | |
| Has fine motor ability to do job | | | |
| Has visual motor ability to do job | | | |

|  | Can do | Can do with help | Comments |
|---|---|---|---|
| **FUNCTIONAL ACADEMICS:** | | | |
| Reads | | | |
| Tells time | | | |
| Counts | | | |

| **Where/How does this student do the following:** | | |
|---|---|---|
|  | **Where** | **How** |
| Greets people | | |
| Gives eye contact | | |
| Negotiates | | |
| Initiates | | |
| Waits | | |
| Answer questions: | | |
| Who? | | |
| What? | | |
| When? | | |
| Where? | | |
| Why? | | |
| Shares materials | | |
| Shares food | | |
| Responds to compliments | | |
| Initiates comments | | |
| Carries on 4-6 exchanges on a subject | | |

| **What problem-solving skills does this student have?  What does the student do when:** | |
|---|---|
| Something is missing: | |
| Something is too difficult: | |
| Routine changes: | |
| Someone s/he cares about is absent: | |
| Doesn't know what to do: | |
| Does something incorrectly: | |
| Something doesn't work right: | |
| Corrected: | |

| During work breaks, does the student: | | | |
|---|---|---|---|
| | **Yes** | **No** | **Sometimes** |
| Imitate what others do? | | | |
| Follow a set routine? | | | |
| Imitate appropriate things to do? | | | |
| Pace or engage in self-stimulatory activities? | | | |
| Socially interact with others? | | | |

| What does this student need to complete a job successfully? | | | |
|---|---|---|---|
| | **Yes** | **No** | **Comments** |
| Consistent /clear definition of beginning and finish | | | |
| What is his or her motivation: | | | |
|   "Likes doing" activities with someone | | | |
|   "Likes doing" something preferred | | | |
|   "Likes doing" something of special interest | | | |
|   "Likes doing" something utilizing strengths | | | |
|   "Likes doing" something to get something later | | | |

| How well does the student do the following tasks?  (Indicate approximate time to complete task) | | | |
|---|---|---|---|
| | **Good** | **Fair** | **Poor** |
| Assemble | | | |
| Move items | | | |
| Repetitive cleaning | | | |
| Sequence cleaning | | | |
| Cooking | | | |
| Collating | | | |
| Typing | | | |
| Filing | | | |
| Computer work | | | |
| Calculator | | | |
| | | | |

**What preference/aptitudes for jobs does this student demonstrate?  As reported by:**

**Family members:**

**Past experiences:**

**Observations:**

**Other comments:**
      **Vocational assets:**

      **Vocational liabilities and suggestions for support:**

      **Specific recommendations:**

# WORK BEHAVIOR CHECKLIST

STUDENT:_____     SCHOOL:_____

EVALUATOR:_____     DATE:_____


*Code each behavior as **MS** – Mastered Skill; **ES** – Emerging Skill; **ND** – Not Demonstrated*

## Communication:
_____ Communicates basic needs (i.e., asking for help, accessing information)
_____ Initiates contact with supervision
_____ Relays needed information
_____ Understands work routine and expectations


## Social Skills:
_____ Interacts with co-workers and supervisors
_____ Works along-side co-workers
_____ Cares for personal hygiene needs
_____ Responds appropriately to social contacts
_____ Manages free time during breaks


## Social Appropriate Behavior:
_____ Works continuously without disruptions
_____ Works without displaying/engaging in major disruptive behaviors
_____ Accepts correction/supervision without becoming upset
_____ Exhibits acceptable behavior during break time


## Rate and Production:
_____ Works continuously
_____ Leaves job site only at appropriate times
_____ Works with limited supervision
_____ Works independently and increases production
_____ Works without disruptions in group settings
_____ Maintains a reasonable production rate across the day and across time
_____ Transitions to new task in reasonable period of time with adequate productivity


## Accuracy and Quality:
_____ Completes tasks with sequenced steps
_____ Demonstrates consistency over time
_____ Demonstrates ability to prepare work area
_____ Demonstrates ability to do a variety of tasks and maintain quality


(Shirlington, DeWeese, & Dalrymple, 1986)