Guidelines for Educating Students with Autism Spectrum Disorders

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Table of Contents

User Guide 5
- **Introduction and Purpose of the Guidelines** 5
- **Recommended Use of the Guidelines** 5
- **Limitations: What the Guidelines are Not Intended to do** 5
- **Sources** 5

Foundational Competencies 6
- **Introduction to Autism and Autism Spectrum Disorders** 6
  - What is Autism and Autism Spectrum Disorders 6
  - Categories of Autism Spectrum Disorder 7
- **Characteristics** 7
  - Primary Characteristics 7
  - Secondary Characteristics 7
  - Strengths 8
- **Educational Definition** 10
  - Individual with Disabilities Education Act (2004) – 34 CFR Part 300.8(c)(1) 10
  - Virginia Special Education Regulations Primary Characteristics 10
- **Medical Definition** 11
  - Diagnosis of Autism Spectrum Disorder 11
- **Comorbid Disorders** 12
- **Prevalence** 12

The Special Education Process 13
- **Identification and Referral** 13
- **Evaluation** 13
- **Determination of Eligibility** 14
- **Individualized Education Program (IEP) Development** 15
  - Present Level of Academic Achievement and Functional Performance 15
  - Goals 15
  - Benchmarks/Short-term Objectives 16
  - Progress Reports 17
  - Accommodations and Modifications 17
  - Accommodations for Assessment 17
  - Placement 17

Medical Intervention 18

Providing an Effective Education 18
- **Goals of Education and Intervention** 18
- **A Basis in Research** 19
  - Definition of Evidence-Based Practice 19
  - Research Design and Publication 20
- **Using a Multi-modal Approach** 21

Assessment Frameworks and Procedures **23**
Standardized Assessment Tools 21
Curriculum-based Assessment 22
Data-driven Assessment 23
Individual Services and Supports **23**
Placement 23
Least Restrictive Environment (LRE) 23
Inclusion Opportunities 23
Modifications and Accommodations 24
Related Services 25
Educational Curriculum **25**
General Curriculum 30
Functional Curriculum 26
Mixtures of Curriculum 26
Focus Areas for Educational Intervention **27**
Social Development and Peer Interaction 27
Communication 28
Activities of Daily Living 29
Play and Leisure 29
Attention 30
Executive Functioning 30
Academic Performance 30
Motor 31
Sensory Processing 31
Sexuality 32
Self-determination 32
Restricted and Repetitive Patterns of Behavior 33
Interfering Behavior 33

Important Considerations in Educational Programming **34**
Early Intervention **34**
Generalization **34**
Assistive Technology **35**
Assistive and Augmentative Communication **36**
The Educational Environment **36**
Organization and Structure **36**
Physical Environment 36
Schedules 37
Transitions 37
Timekeeping 37
Supplies 37
Rules 37
Classroom Management **37**
Personnel **38**
Systematic Instruction **39**
Intensive Instruction **39**
Instructional Strategies **40**

Ensuring Students' Ability to Access Education **41**
Functional Behavior Assessment 41
Steps to Conducting a Functional Behavior Assessment 41
Developing and Implementing a Behavior Intervention Plan 44
Program Evaluation 45
Monitoring Student Progress 45
Data Collection 45
Data Analysis 46

Professional Collaboration **46**

Family Involvement **47**

Professional Development **47**
Training Topics **48**
Creating Professional Development **48**

Virginia Skill Competencies **49**

Guardianship **49**

References **50**

Appendices .....
Appendix A: Data Collection 56
Appendix B: Some Considerations When Developing Effective IEPs 57
Appendix C: Instructional Strategies 59
Appendix D: Diagnostic tools 61
Appendix E: Virginia Skill Competencies 62
Appendix F: Examples of Data Driven Assessment 71

Table and Figures

Table 1: A Comparison of Characteristics between Autism, Asperger's Disorder and PDD-NOS 9
Figure 1. The Instructional Process 26
Figure 2. Implementing Instructional Interventions 41

Commonly Used Acronyms

ABA ..... Applied Behavioral Analysis

ADDM ..... Autism and Developmental Disabilities Monitoring Network

ASD ..... Autism Spectrum Disorder

BIP ..... Behavior Intervention Plan

CDC ..... Centers for Disease Control

DD ..... Developmental Disabilities

DSM-IV-TR ..... Diagnostic and Statistical Manual (Fourth Edition, Revised)

FAPE ..... Free Appropriate Public Education

FBA ..... Functional Behavioral Assessment

FCT ..... Functional Communication Training

DEA ..... Individuals with Disabilities Education Act (2004)

IEP ..... Individualized Education Program

IFSP ..... Individualized Family Service Plan

JA ..... Joint Attention

LEA ..... Local Education Agency

MDT ..... Multidisciplinary Team

NET ..... Natural Environment Teaching

NLP ..... National Language Paradigm

NOS ..... Not Otherwise Specified

PBIS ..... Positive Behavioral Interventions and Supports

PDD ..... Pervasive Developmental Disorder

PECS ..... Picture Exchange Communication System

PLEP ..... Present Levels of Educational Performance

RT ..... Pivotal Response Training

SAT ..... Student Assistance Team

EA ..... State Educational Agency

TEACCH ..... Treatment and Education of Autistic and related Communication Handicapped Children

VDOE ..... Virginia Department of Education

User Guide

Introduction and Purpose of the Guidelines

Students with Autism Spectrum Disorder (ASD) provide unique challenges and opportunities for educators[1]. With appropriate interventions students with ASD can progress along developmental levels. The increasing prevalence reported in public schools has created a call for educational assessments and practices that are uniquely suited for students with ASD, and a call for educators and service providers who are skilled at their selection and implementation. These guidelines are intended to serve as a resource primarily for educators, but may also be helpful to parents, medical professionals and other providers when they are making informed choices about the education of students with ASD. While these Guidelines address students from infancy through early adulthood in the school setting, it is recognized that this is a lifelong process.

Recommended Use of the Guidelines

Educators, family members and practitioners are encouraged to use this document as a resource when creating educational programming for students with ASD, recognizing that all services ***must be tailored to the individual***. The adoption of a particular recommendation must be made while considering the unique needs of the individual and the present circumstances.

- ✶ This document should be read in its entirety. No section(s) should be read in isolation from the rest of the document.
- ✶ Following a review of the document, a provider or parent may wish to refer to particular sections.
- ✶ Consult the references and review the literature that is the basis for the section.
- ✶ Supplement the information available in the Guidelines with additional and newly published information, as appropriate.

Limitations: What the Guidelines are Not Intended to do

These guidelines offer an overview of the current best practices for educating individuals with ASD. **The Guidelines are not a standard of practice for the education of individuals with ASD in Virginia.** Rather, they are intended to serve as a resource for families, educators, service providers and others who seek to design educational programming for such students.

The inherently individual nature of ASD, the broad range and combination of abilities of individuals, and the legal mandates for individualized instruction necessitate thoughtful, informed consideration in educational programming design. Continuity across autistic disorders allows these Guidelines to address both the specific disability category of autism, as well as the more broadly defined group of Autism Spectrum Disorders.

The inherently individual nature of ASD, the broad range and combination of abilities of individuals, and the legal mandates for individualized instruction necessitate thoughtful, informed consideration in educational programming design.

The contents of the Guidelines represent the "recommended practices" available at the time of its creation. Additional information about ASD and the strategies and supports needed to provide an effective education continue to evolve. It is recommended that the readers of these Guidelines also seek out more recently published information to supplement the information contained within this document.

Sources

An extensive body of literature is now available outlining comprehensive information regarding

[1] *Iovannone, et al. (2003)*

educational practices, supports, and processes that are successful for students with ASD. Statutes, case laws, regulations, and policies provide a framework for expectations in educational goals and development of individualized educational programming. Peer-reviewed educational, medical, and psychological literature inform recommended practices and educational supports.

The abundance of information on approaches for students with ASD can be confusing and even conflicting at times. Recently, the literature related to ASD has provided comprehensive reviews of extant research to determine whether a strategy or program is effective for individuals with ASD. These reviews have brought clarity to the discussion as they have identified the level of scientific evidence available for various supports and strategies and have provided specific information about the skills and age groups to which these strategies have been applied. Such research efforts have been utilized to create these Guidelines and direct educational components and considerations. Comprehensive sources include, but are not limited to:

- Simpson, R. L. (2005). Evidence-based practices and students with autism spectrum disorders. Focus on Autism and Other Developmental Disabilities, 20(3), 140-149.
- National Research Council. (2001). *Educating children with autism.* Committee on Educational Interventions for Children with Autism. Division of Behavioral and Social Sciences and Autism. Washington, DC: National Academy Press.
- Iovannone, R., Dunlap, G., Huber, H., Kincaid, D. (2003). Effective Educational Practices for Students with Autism Spectrum Disorders. *Focus on Autism and Other Developmental Disabilities.* 18(3): 150-165.
- National Professional Development Center on Autism Spectrum Disorders (NPDC-ASD)[2]
- National Autism Center (2009). Evidence-Based Practice and Autism in the Schools: A Guide to Providing Appropriate Interventions to Students with Autism Spectrum Disorders. Available at: http://www.nationalautismcenter.org/pdf/NAC%20Ed%20Manual_FINAL.pdf
- Council for Exceptional Children. (2009). What every special educator must know: The international standards for the preparation and certification of special education teachers. Content Standards for Special Education Teachers of Individuals with Exceptional Learning Needs with Developmental Disabilities and/or Autism (6th Ed.)

Foundational Competencies

Introduction to Autism and Autism Spectrum Disorders

What is Autism and Autism Spectrum Disorders

Autism Spectrum Disorders (ASD) are a group of complex neurological developmental disabilities with core features that include significant social and communication challenges and restricted, repetitive and stereotyped patterns of behavior [3,4,5]. In addition, individuals may experience unusual responses to sensory stimulation, such as certain sounds or the way objects look. ASD is believed to be a chronic, lifelong disorder with no definitive etiology or cure [6]. Sometimes called Pervasive Developmental Disorders (PDD), ASD can often be reliably detected by the age of 3 years and in some cases as early as 18 months.

[2] *The National Professional Development Center on Autism Spectrum Disorders is a multi-university center to promote the use of evidence-based practice for children and adolescents with autism spectrum disorders. It's webpage can be accessed at* http://autismpdc.fpg.unc.edu/

[3] *CDC (2009)*

[4] *APA DSM-IV (1994)*

[5] *Johnson (2007)*

[6] *NRC (2001)*

Categories of Autism Spectrum Disorder

ASD is a descriptive umbrella term that encompasses five different diagnostic categories. Despite some similarities in areas of impairment, each category does have unique characteristics and diagnostic criteria. The diagnostic categories within ASD are:

- **Autistic Disorder**
- **Asperger's Disorder**
- **Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS)**
- **Rett's Disorder**
- **Childhood Disintegrative Disorder**

ASD is a "spectrum disorder" meaning that although similar symptoms are shared, each person with ASD is affected in a different way. Symptoms can occur in any combination and can range from very mild to quite severe. The cognitive abilities of students with an ASD range from above average intelligence to severe intellectual disability.

Of the five disorders above, autism, Asperger's Disorder, and PDD-NOS are the most common; therefore, this document focuses primarily on these three categories. Although Rett's Disorder and Childhood Disintegrative Disorder (CDD) present differently than the other ASDs, the characteristics and educational concerns are similar to those of students with ASD and may benefit from the same practices.

Characteristics

Primary Characteristics

There are three major areas of development impacted by ASD:

Social Interaction: The individual displays difficulties in relating to people and demonstrating social reciprocity. There is impairment in peer relations and social interactions. The individual may have limited interest in such relations or may seek interaction in unusual ways. The use and understanding of nonverbal forms of communication may be limited. Emotional expression and regulation are greatly restricted. The capacity to play in an age appropriate or functional manner may be absent or delayed. There may be an inability to engage in imaginative activities.

Communication: Many aspects of the communication process are impaired. Understanding others' verbal and nonverbal language and communicative attempts (receptive language) may be a challenge. Use of communication (expressive language) is limited in function and/or frequency. Verbal language may be altogether absent. If present, the style and communicative patterns will likely be atypical and can include echolalia, unusual vocal intonations and/or difficulties with volume. The use of communication may be repetitive, restricted, or used only to get desires met. Vocabulary and word use may be limited or used inappropriately.

Restricted, Repetitive, and Stereotypical Patterns of Behavior: The individual often exhibits stereotyped and repetitive movements with his or her body or objects. There may be great distress over changes and insistence on following routines. The individual may have an extreme preoccupation with or attachment to an object or topic of interest. Play or leisure activities are likely repetitive and restricted.

Secondary Characteristics

In addition to the primary characteristics, a number of secondary characteristics have been identified and are common in individuals with ASD. They include:

Imitation: The individual may have difficulty imitating gross, fine and/or oral motor movements. Additionally, imitation of verbal patterns may be impaired or absent. If imitation skills are present, the person may demonstrate difficulty using skills

appropriately in context or generalizing to new or novel situations.

Theory of Mind: The individual has impairment in understanding the way other people think or feel.[7] The person may understand simple causes of feelings and emotions, but have difficulty understanding more complex causes. This often results in not comprehending reasons for others' behavior or actions.

Executive Functioning: Planning and executing actions may be impacted. There may be impairment in controlling behavior as well as self-regulation and response inhibition. Impulsivity is often common.

Motor: The individual may have difficulty performing gross and/or fine motor activities. There may be impairment in balance and coordination.

Sensory: Hyper- or hypo-sensitivity to sensory stimulation may be present. Sensory abnormalities have been documented in the areas of visual, auditory, gustatory, olfactory, tactile, proprioceptive, and vestibular systems.[8]

Strengths

There are a number of strengths associated with ASD:

Memory: The individual may remember information, both relevant and irrelevant, for long periods of time. Small details may be easily recalled. Chunks of information are often stored together and may be used functionally to perform tasks and complete activities.

Visual Processing: The individual may be able to demonstrate intense focus on visual details. Visual information is often readily understood and applied meaningfully. Presentation of information visually may help compensate for attention and auditory processing difficulties.

Intense Focus: There may be a strong ability to concentrate on information, an activity or topics for extended periods of time. This may be especially true if it is an activity or topic of specific interest.

Table 1, right, describes the symptoms and characteristics associated with autism, Asperger's Disorder, and PDD-NOS.

[7] *Baron-Cohen & Swettenham, 1997*

[8] *Anzalone & Williamson, 2000*

Table 1: A Comparison of Characteristics between Autism, Asperger's Disorder and PDD-NOS *(Source: Schall & McDonough, 2009)*

Characteristic	Presentation in Autism	Presentation in Asperger's Disorder	Presentation in PDD-NOS
Cognitive and Intellectual Ability	More individuals display intellectual disabilities. Cognitive abilities range from gifted to severely impaired	More individuals display average to above average abilities. Cognitive abilities range from gifted to mildly impaired	Individuals with PDD-NOS display abilities across the entire range of intellectual ability
Social Interaction	Social skill deficits in all areas of interaction. Social skill errors and misunderstandings can present as problem behavior	Social skill deficits in all areas of interaction. Social skill errors and misunderstandings can present as problem behavior or social language difficulties	Individuals display social skill deficits, but may not meet full criteria in this category for either autism or Asperger's Disorder
Communication	More individuals display late acquisition of language and lifelong language delays and disorders including increased use of idiosyncratic and echolalic language. Most individuals have significant challenges displaying and understanding nonverbal communication	Most individuals acquire language on time, but display significant challenges with the social use of language (also called pragmatics). Many display difficulties with reciprocity in communication and understanding and using nonverbal communication	Individuals display communication deficits, but may not meet full criteria in this category for either autism or Asperger's Disorder
Patterns of Behavior	More individuals display unusual motor movements and stereotypes such as flapping hands, rocking, jumping, etc. Many individuals resist changes in routine and engage in nonfunctional rituals.	Many individuals converse about intense interests to the exclusion of reciprocal interaction with others. Some individuals display motor stereotypes, but to a lesser degree than those with autism. Many individuals resist changes in routine and engage in non-functional rituals.	Individuals may display restricted and stereotyped patterns of behavior, but may not meet full criteria in this category for either autism or Asperger's Disorder
Secondary Characteristics	Many individuals display challenging behavior including aggression, self-injurious behavior, darting or wandering away, and over activity. Some individuals with higher intellectual abilities may also experience anxiety disorders and depression. Many individuals also display varying patterns of hyperresponsiveness and hyporesponsiveness to sensory stimulation	Many individuals display challenging behavior including aggression, self- injurious behavior, darting or wandering away, and over activity. Many individuals may also experience anxiety disorders and depression. Many individuals also display varying patterns of hyperresponsiveness and hyporesponsiveness to sensory stimulation	Some individuals display challenging behavior including aggression, self-injurious behavior, darting or wandering away, and over activity. Some individuals with higher intellectual abilities may also experience anxiety disorders and depression. Many individuals also display varying patterns of hyperresponsiveness and hyporesponsiveness to sensory stimulation

Educational Definition

The Individual with Disabilities Education Act[9] (IDEA; 2004) and the 2010 Virginia Regulations Governing Special Education Programs for Students with Disabilities in Virginia provide a definition of autism. Educators use the educational definition when determining whether a student is eligible for special education and should receive such services under the disability category of autism. Due to the pervasive needs of this population, the majority of students with a medical diagnosis will be found eligible for special education services in public schools.[10]

Individual with Disabilities Education Act (2004) – 34 CFR Part 300.8(c)(1)

(i) Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a student's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

(ii) Autism does not apply if a student's educational performance is adversely affected primarily because the student has an emotional disturbance, as defined in paragraph (c)(4) of this section.

(iii) A student who manifests the characteristics of autism after age three could be identified as having autism if the criteria…of this section are satisfied.

Virginia Special Education Regulations Primary Characteristics

Virginia uses the same definition of autism provided in IDEA (2004). Based on this definition, Virginia delineated specific criteria for eligibility within the category of autism that provides guidance for educators and parents.[11] According to the 2010 Virginia Special Education Regulations, an eligibility team in Virginia may determine a student has autism if:

Because of their shared learning characteristics and unique social difficulties, students determined to have an educational need and meet criteria for autism, regardless of level of severity or function, should receive special education and related services within the category of autism (National Research Council, 2001).

1. There is an adverse effect on the child's educational performance due to documented characteristics of autism, as outlined in this section; and
2. The child has any of the Pervasive Developmental Disorders, also referenced as autism spectrum disorder, such as Autistic Disorder, Asperger's Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Pervasive Developmental Disorder – Not Otherwise Specified including Atypical Autism as indicated in diagnostic references.
   a. Students with Asperger's Disorder demonstrate the following characteristics:
      (1) Impairments in social interaction, such as marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction; failure to develop peer relationships appropriate to developmental level; a lack of spontaneous seeking to share enjoyment, interests, or achievements with other

[9] *All references to IDEA are to the 2004 reauthorization of IDEA, unless stated otherwise.*

[10] *OSEP indicates that the number of children served is approximately 72% of those estimated by the CDC to have ASD; however, some unquantifiable number children in the CDC estimation are below age six and/or served in private schools or early elementary schools, and therefore are not represented in OSEP's data.*

[11] *OSEP (2006)*

people (i.e., by a lack of showing, bringing, or pointing out objects of interest); or lack of social or emotional reciprocity are noted; and

(2) Restricted repetitive and stereotyped patterns of behavior, interests, and activities such as encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus, apparently inflexible adherence to specific, nonfunctional routines or rituals, stereotyped and repetitive motor mannerisms, persistent preoccupation with parts of objects.

b. Students with autistic disorder, in addition to the characteristics listed in subdivisions 2 a (1) and 2 a (2) of this subsection, also demonstrate impairments in communication, such as delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime). In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others, stereotyped and repetitive use of language or idiosyncratic language, or lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level is noted.

c. Students with Pervasive Developmental Disorder - Not Otherwise Specified or Atypical Autism may display any of the characteristics listed in subdivisions 2 a (1), 2 a (2) and 2 b of this subsection without displaying all of the characteristics associated with either Asperger's Disorder or Autistic Disorder.

Medical Definition

The medical community diagnoses a person with an ASD based on criteria set forth by the American Psychological Association in the most recent edition of the Diagnostic and Statistical Manual (DSM-IV-TR). The medical definition provides a unique definition for each of the three diagnostic categories including Autistic Disorder, Asperger's Disorder, and PDD-NOS. For the purpose of this document, the definitions provided by IDEA (2004) and the Virginia Special Education Regulations (2010) will be utilized since these are the criteria that must be met to receive special education services under the category of autism. More information about the medical definition and how it is used for diagnosis can be found in the subsequent section "Diagnosis of Autism."

Diagnosis of Autism Spectrum Disorder

There are no medical tests for diagnosing ASD. However, there are a number of appropriate instruments and techniques that may be used. An accurate diagnosis must be based on observation of the individual's social, communication and sensory functioning as well as patterns of behavior. A comprehensive evaluation includes developmental history, observations, direct interaction, and parent interview. Professionals compare development against diagnostic/eligibility criteria, whether medical/psychological or educational. Assessment may be completed by a number of professionals, including psychologists, neurologists, pediatricians, or psychiatrists who are knowledgeable about and experienced in assessing ASD.

Assessment in the public school system is conducted for the purposes of establishing eligibility for special education services and gathering information to assist in planning an individualized program for the student.

Differences and similarities between a medical diagnosis and educational eligibility are critical to understand. The term diagnosis is most often used in assessments conducted in the private sector,

often at medical facilities. Medical and psychological professionals diagnose ASD using criteria set forth by the Diagnostic and Statistical Manual-IV-TR (DSM-IV-TR, 2000).

The criterion for eligibility for special education under the category of autism is independent from a medical diagnosis.[12] Assessment in the public school system is conducted for the purposes of establishing eligibility for special education services and gathering information to assist in planning an individualized program for the student. For special education eligibility, a school-based evaluation committee uses diagnostic criteria outlined in IDEA (2004) and the Virginia Special Education Regulations (2010).

Based on the distinctions between a diagnosis and identification of eligibility, it is possible that a student who has been medically diagnosed with ASD may not be eligible for special education services. Conversely, some students who are eligible for special education services may not have a medical diagnosis. A disability must have an adverse effect on an individual's education to be considered eligible for special education services. There is no regulatory requirement within the Regulation Governing Special Education for a medical diagnosis of ASD yet, if a parent shares such an evaluation with the school team the information must be considered by the local educational agency (8VAC20-81-170).

The importance of individually designed education for those with ASD has been well established. Parents and educators should seek assessment as soon as signs become evident. Eligibility evaluation can lead to procurement of appropriate services and supports while a medical diagnosis resulting from a comprehensive assessment may help parents and educators make more comprehensive treatment decisions. Special education eligibility teams should work collaboratively with medical and psychological professionals when possible to ensure a thorough and accurate assessment.

Comorbid Disorders

Many individuals with a diagnosis of ASD are also effected by comorbid disorders, or associated conditions. To provide an appropriate and effective education, understanding the whole individual, including any other disorders or conditions is essential. Presence of comorbid disorders require the educational team to consider whether the student has educational needs requiring services under an additional disability category.

Comorbid disorders may be medical or psychiatric and may or may not receive an official medical diagnosis. Some present from an early age while others develop over time. Onset during puberty is common. Frequently reported comorbid disorders include:

- Seizures and epilepsy
- Anxiety
- Depression
- Attention difficulties
- Bipolar Disorder
- Obsessive Compulsive Disorder

Prevalence

ASDs are not rare. In fact, in 2009 the Centers for Disease Control (CDC) determined that approximately 1 out of every 111 (0.9%) 8-year-old children are clinically diagnosed with an ASD.[13] The CDC also determined that males are more likely than females to be diagnosed with ASD.

The number of individuals clinically diagnosed with ASD has increased dramatically over the last fifteen years in Virginia and the nation. While a true increase in prevalence cannot be ruled out,[14] this increase may be due, at least in part, to such factors as expanded classification criteria, policy and practice changes, increased awareness, and case confirmation strategies.[15] The American Academy of Pediatrics closely links the prevalence of ASD to a history of changing criteria and diagnostic categories.[16] Notably, the prevalence rates for Autism alone have remained stable.

[12] *McFarlane & Kanaya (2009) What does it mean to be autistic? Inter-state variation in special education criteria for autism services. JC&FS*

[13] *CDC (2009)*

[14] *CDC, Surveillance Summaries. (2009) MMWR Morbid Mortal Wkly Rep. 58(SS 10): 1-20*

[15] *Levy, et al. (2009).*

[16] *Johnon (2007)*

Similarly, there has been a steady and noticeable increase in the number of students eligible for special education services under the autism category. Autism was first included in the Code of Federal Regulations as a special education eligibility category in 1990, and states were required to offer autism services by the 1992-93 school year.[17] Prior to this time, students may have been served under different disability categories, a phenomenon known as "diagnostic substitution.[18]" As of 2007, 258,305 students ages 6 through 21 and 39,434 students ages 3 through 5 across the nation are identified and receive special education and related services under the "autism" classification.[19] This represents approximately 4% of all students who received special education and related services.

The Special Education Process

The Individuals with Disabilities Education Act (2004) is a federal law that ensures all children with educationally-impacting disabilities, from birth through age 21, receive a free, appropriate public education that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living.

Identification and Referral

A referral is the first step in the special education process. A student who is thought to have a disability that adversely impacts his or her education, such as an ASD, must be evaluated in all areas of suspected disability. Anyone who suspects a student has educational needs requiring specialized services and supports, including the parent or legal guardian, can make a referral for an evaluation. This typically involves providing a written or verbal request to the local special education administrator in the individual's home school.

Once an evaluation request is made, a team consisting of the parent or guardian and professionals from various disciplines convene for a school based team meeting. The purpose of this meeting is to discuss the needs of the individual and make a determination regarding evaluation. If determined that an evaluation is warranted, the components are delineated and a timeline for completion set.

Evaluation

If an evaluation is needed, the parent or legal guardian must provide written consent before any testing can be done. A parent is not obligated to consent to testing, though the school division may seek the right to evaluate a student without parent permission through due process (information regarding due process as well as other dispute resolution options may be found at: http://www.doe.virginia.gov/special_ed/resolving_disputes/index.shtml).

All assessments, meetings and other events necessary to complete the eligibility process must be done within 65 business days. Evaluations must be appropriate given the characteristics of the student (i.e., age, gender, native language, and cognition) and the suspected area of disability.

Assessment of students for whom ASD is suspected should be multidisciplinary and comprehensive. A formal psychological assessment by a psychologist experienced in evaluating individuals with ASD should be at the core of the evaluation. A component of this assessment should be the use of multiple well-recognized and substantiated diagnostic tools. This is imperative because of the subtle symptomology present in some students with the disability. There is no single definitive assessment for suspected ASD; each relies on the clinical judgment and skill of the professional by whom it is administered. The use of multiple tools will ensure accurate findings.

[17] *National Information Center for Children and Youth with Disabilities. (1996); McFarlane & Kanaya (2009).*

[18] *McFarlane & Kanaya (2009); Office of Special Education Programs. (2006a).*

[19] *USDOE (2006)*

The assessments chosen must be tailored to assess specific areas of suspected disability and educational need. Assessment of students for whom ASD is suspected should be multidisciplinary and comprehensive. A formal psychological assessment by a psychologist experienced in evaluating individuals with ASD should be at the core of the evaluation. A component of this assessment should be the use of multiple well-recognized and substantiated diagnostic tools. This is imperative because of the subtle symptomology present in some students with the disability. There is no single definitive assessment for suspected ASD; each relies on the clinical judgment and skill of the professional by whom it is administered. The use of multiple tools will ensure accurate findings. Appendix D contains a list of recommended measures to identify the presence of ASD.

Selection of assessments must consider any impairment the student might have and assess all areas of suspected disability. Several domains must be evaluated to get a thorough and accurate understanding of the student. Assessment of intellectual functioning may be conducted to help frame the interpretation of many observations about the student. A comprehensive assessment typically includes a speech-language evaluation to examine speech, social, and pragmatic skills. An occupational therapy evaluation assesses motor and sensory concerns. Assessment of academic achievement identifies areas of strength and need related to educational content. Further, evaluation of adaptive behavior identifies level of functional independence in the natural environment. In addition to these core areas, other domains may need to be assessed. They include processing, attending, and skills related to executive functioning.

Assessments utilized by the eligibility team should be selected with care. Some assessments are specifically designed for students with autism or ASD. The evaluating professional must determine each assessment's degree of appropriateness. Usually, assessments for the purpose of eligibility include a mix of criteria-based and normative assessments.[20] At times, a non-standardized assessment must be administered. This is permissible and should be considered during eligibility deliberations. However, the team must ensure that all assessments considered reflect the student's actual abilities or achievements rather than reflecting deficits.

Medical evaluations and diagnostic reports conducted outside of the educational arena should be considered as components of the evaluation. There are a number of medical or psychological conditions associated with ASD. It is important to identify and address such concerns as they can limit or impact development and educational achievement. Information obtained from medical evaluations may provide new information about the student and result in better and more comprehensive intervention decisions.

Determination of Eligibility

A team, including the parents, reviews all applicable existing information to determine whether a student is eligible for special education and related services under the IDEA (2004). To be eligible for special education and related services, the student must meet the criteria for at least one of thirteen disability categories, of which one is autism. Following a determination of eligibility for special education and related services, the Individualized Education Program documents need only identify "child with a disability," rather than the disability category.

For a student who is eligible for special education and related services, an Individualized Education Program must be developed within 30 calendar days from eligibility of determination. In the event a student is not eligible under IDEA (2004), the local education agency may wish to consider whether the student is eligible for protection under Section 504 of the Rehabilitation Act of 1973, as revised (information on Section 504 is available at *http://www.doe.virginia.gov/federal_programs/civil_rights/index.shtml*).

[20] *Scott (2000)*

Individualized Education Program (IEP) Development

A student's IEP is the cornerstone of his or her special education. Ultimately, the IEP must be reasonably calculated to enable the student to receive educational benefits in the least restrictive environment. Considerations for developing an effective IEP are available in Appendix B.

Present Level of Academic Achievement and Functional Performance

Sometimes called the "Present Level" or "Present Level of Performance," this is a narrative-style description of how the student is performing academically and functionally in school, as well as ways in which the student's disability affects his or her participation in the general curriculum. It is based on all the information gathered on the student to date and should be written in understandable language. The "present level" should provide enough detail that even someone who does not know the student could imagine him or her during the school day. The components of a "present level" might include:

- The student's disability and how it affects involvement and progress in the general education curriculum;
- Assessment information and instructional needs;
- Student preferences and parent input regarding postsecondary and adult/continuing education (when applicable);
- Independent living and community participation;
- Adult services (when applicable); and
- Student's unique instructional needs.[21]

Ultimately, the present level of performance lays the foundation for the rest of the IEP document. Everything that follows should address or link to some part of the "present level" description. For the student with ASD, it is crucial that the present level include a comprehensive and accurate description of the student's current performance in areas related to all areas of need. Due to similarities present across ASDs, in addition to skills related to academic performance the present level should typically include a description of abilities related to the following:

- Communication
- Language
- Social
- Peer interaction
- Play / Recreation
- Interfering behaviors
- Adaptive behavior
- Work habits including attention span, distractibility and organization

Goals

Based on the student's present level of academic achievement and functional performance, the IEP team, including the parents, creates goals for the student. To identify relevant goals, the team determines the emerging skills and areas of need for the student. The goals serve as a roadmap for the upcoming year.

> ***There should be a direct link between educational goals and the acquisition of knowledge and skills that support independence, social responsibility and community integration.***

> ***The ability to write measurable goals is one of the most important aspects of IEP development. Because these goals represent the skills a student will work on during the upcoming year, data must be collected to determine acquisition and to make programmatic decisions.***

Goals should not be a simple restatement of the Standards of Learning (SOL) or the Aligned Standards of Learning (ASOL), regardless of level. Furthermore, a student's IEP must address all areas of need, regardless of whether or not they are commonly associated with the identified disability. There should be a direct link between educational goals and the acquisition of knowledge and skills that support independence, social responsibility and community integration.[22]

All goals should be appropriate, meaning:

[21] *VDOE (2005)*

[22] *National Research Council (2001)*

- ✶ achievable in one year;
- ✶ designed to meet the student's needs that result from the student's disability to enable him or her to be involved in and make progress in the general education curriculum; and
- ✶ designed to meet each of the student's other educational needs that result from his or her disability.

Additionally, goals should be phrased positively and must be measurable. The ability to write measurable goals is one of the most important aspects of IEP development. Because these goals represent the skills a student will work on during the upcoming year, data must be collected to determine acquisition and to make programmatic decisions. A measurable IEP goal has seven components, each of which answers a "w" or "h" question: who, what, how, where, when, with, and which. The following IEP goal illustrates these seven components:

By the end of the first quarter, Jasmine will independently use augmentative communication to request food and drink across all settings at least 10 times per day as measured by a teacher-made checklist and teacher observation.

Cue Word	Description	Example
Who	Use the student's name	"Jasmine will…"
What	What specific skill or behavior will be achieved?	"…use augmentative communication…"
How	At what level or in what manner will the skill be achieved?	"…to request food and drink…"
Where	Where will the skill be achieved? Consider the setting in which the skill must be mastered. Is the skill being taught in a self-contained, one-on-one environment or should the skill be mastered across settings?	"…across all settings…"
When	By when will the skill be achieved?	"By the end of the first quarter…"
With	With what level of success?	"…independently …at least 10 times per day…"
Which	Which measure will be used to gauge progress	"…as measured by a teacher-made checklist and teacher observation."

Benchmarks/Short-term Objectives

The IEP team must document in each child's IEP the team's consideration of whether or not to include benchmarks or short-term objectives in the IEP. Benchmarks/short-term objectives are required for students who take alternate assessments aligned to alternate achievement standards. For all other students, benchmarks or short-term objectives are optional.

Benchmarks/short-term objectives are smaller components or sequential steps of meeting the IEP goals. As with goals, benchmarks/short-term objectives should support independence, social

Goal:	By October 15, Alonzo will demonstrate conversational skills by independently responding, initiating and taking two conversational turns with peers during center time.
B/STO	By October 15, Alonzo will respond to a question or comment made by a peer by making a relevant statement or question on 9 out of 10 trials.
B/STO	By October 15, Alonzo will initiate a conversation with a peer a minimum of 3 times per day.
B/STO	By October 15, Alonzo will take two conversational turns providing a relevant statement or question on 9 out of 10 trials.

responsibility and community integration.[23]

The following Benchmarks/Short-term Objectives ("B/STO") illustrate this concept:

Goal:	By October 15, Johnny will recite his full address with 100% accuracy on 9 out of 10 trials
B/STO	By September 15, Johnny will recite his street address with 100% accuracy on 9 out of 10 trials.
B/STO	By October 1, Johnny will recite his street address, city and state with 100% accuracy on 9 out of 10 trials.
B/STO	By October 15, Johnny will recite his street address, city, state, and zip code with 100% accuracy on 9 out of 10 trials.

Benchmarks/short-term objectives may also provide for progress measures that should be mastered en route to the annual goal. The following illustrates this concept:

Progress Reports

For each goal, the IEP team must determine how it will know when the student has mastered the goal. A student's progress on each annual goal must be measured and regularly reported to the student's parents. The IEP team chooses the most appropriate ways to measure the progress. Some examples of measures are data collection, tests, checklists, and observation. It is best to use a measure that allows for frequent data collection to be sure that a student's recorded performance is a true representation of ability. An example of data collection is provided in Appendix A. The IEP team must also determine how often the progress reports will be provided. At the very least, progress reports on IEP goals must be provided as often as report cards are provided.

Accommodations and Modifications

The IEP must include the special education and related services as well as supplementary aids and services that will be provided to the student. These are commonly known as "accommodations and modifications" because they often take the form of accommodations (preferential seating, one-on-one support, additional time) or curricular modifications (variance from the prescribed Standards of Learning).

Accommodations are changes in ***how*** a student interacts with the learning environment. They are changes that allow for access to learning and to demonstrating knowledge. Examples might include changes to physical space, allowable time, equipment, and alternative formats and presentations of materials.

Modifications are changes in ***what*** a student is expected to learn, and can include changes to content, performance expectations, and instructional levels.

Accommodations for Assessment

According to the *No Child Left Behind Act of 2001* students, including those with disabilities, are legally required to participate in state- and divisionwide assessments. This helps to ensure that schools, school divisions, and states are held accountable for the achievement of these students. Students with an IEP must be provided the appropriate accommodations necessary to participate in these tests. Making determinations about accommodations required of a student with ASD is a significant component of developing an IEP. Team members, including parents, must engage in a thoughtful process that determines the necessary accommodations to facilitate the student's access to grade level instruction and full participation in state/division assessments.

Placement

An important part of the IEP is the "placement" of a student with disabilities. Special education itself is not a place; it is a set of services and supports. ***Where*** a student with disabilities receives his or her education is the individual's placement. Placement is based upon the needs of the student, as defined in the present level of performance and IEP goals, and should be among the last decisions made by

[23] *National Research Council (2001)*

the IEP team. School divisions must offer at least these placements, which are listed from the least restrictive to the most restrictive:

- regular classes;
- special classes;
- special schools;
- home instruction; and
- instruction in hospitals and institutions.

Medical Intervention

Autism spectrum disorders are recognized as neurobiologically-based disorders. Individuals with ASD often require ongoing monitoring and care by a medical professional to address a number of conditions such as seizures, anxiety, depression, obsessive compulsive disorder, gastro-intestinal disorders, or sleep difficulties. Medications may be a component of treatment, each with its own impact and potential side effects. The care should take place under a qualified medical professional who has experience with children with ASD. It is essential for educators to stay abreast of medically related conditions and treatment plans. Further, to provide appropriate support for the student, educators must collaborate with families and medical professionals by providing information or data regarding observations made in the school setting.

It is essential for educators to stay abreast of medically related conditions and treatment plans. Further, to provide appropriate support for the student, educators must collaborate with families and medical professionals by providing information or data regarding observations made in the school setting.

At the root of these goals are the same expectations outlined for all students. Education provides opportunities for acquisition of knowledge and skills that lead to personal independence and social responsibility.

Providing an Effective Education

Goals of Education and Intervention

There are many different goals for the education of students with ASD. At the root of these goals are the same expectations outlined for all students. Education provides opportunities for acquisition of knowledge and skills that lead to personal independence and social responsibility.[24] The IDEA was established to ensure all children with disabilities have this opportunity. According to IDEA (2004), the primary purpose of the free, appropriate public education is to prepare students with disabilities for employment and independent living.

For a student with ASD, considerations regarding independence and responsible participation in a social world may include different goals from those targeted for more typical students or students with other developmental disabilities. There are many skills that are part of an academic curriculum that lead to independence and social responsibility. However, educational goals for students with ASD often need to address language, social, behavioral, and adaptive goals that are not part of standard curricula (NRC, 2001).

[24] *Kavale and Forness (1999)*

A Basis in Research

Educational interventions and instructional methodologies must be validated by "scientifically-based research.[25]" The terms "scientifically-based research" and "evidence-based practices" are often used interchangeably to describe appropriately validated practices.

Although the last twenty years have seen an expansion in available educational practices for students with ASD, not all are validated and not all validated practices are appropriate for all students. Educators of students with ASD must be knowledgeable of the range of educational practices (including interventions, methodologies, and accommodations), and must be able to appropriately choose and implement such practices based on individual student need.

Definition of Evidence-Based Practice

According to IDEA (2004) and federal and state regulations, scientifically-based research means research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs and includes research that:

- ✶ Employs systematic, empirical methods that draw on observation or experiment;
- ✶ Involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
- ✶ Relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators;
- ✶ Is evaluated using experimental or quasi-experimental designs[26] in which individuals, entities, programs, or activities are assigned to different conditions and with appropriate controls to evaluate the effects of the condition of interest, with a preference for "random-assignment" experiments, or other designs to the extent that those designs contain "within-condition" or "across-condition" controls;
- ✶ Ensures that experimental studies are presented in sufficient detail and clarity to allow for replication or, at a minimum, offer the opportunity to build systematically on their findings; and
- ✶ Has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review.[27]

In accordance with federal regulations[28] and thorough analysis of peer-reviewed literature and publications, the National Professional Development Center on Autism Spectrum Disorders (NPDC-ASD)[29] developed a formal definition for evidence-based practices. This definition is based on rigorous criteria and is widely accepted as a comprehensive definition to identify effective practices.

The NPDC defines evidence-based practices for individuals with ASD as those practices for which efficacy is established through peer-reviewed research in scientific journals using one of the following: [30]

- ✶ **Randomized or quasi-experimental design studies**: Two high quality experimental or quasi-experimental group design studies
  - High quality randomized or quasi-experimental design studies do not have critical design flaws that create

[25] *NCLB; IDEA*

[26] *These are described below in "Research Design Explained"*

[27] *(20 USC § 9501(18); 34 CFR 300.35); 8 VAC 20-81-10*

[28] *(20 USC § 9501(18); 34 CFR 300.35); 8 VAC 20-81-10*

[29] *The National Professional Development Center on Autism Spectrum Disorders is a multi-university center to promote the use of evidence-based practice for children and adolescents with autism spectrum disorders. It's webpage can be accessed at http://autismpdc.fpg.unc.edu/*

[30] *The National Professional Development Center on Autism Spectrum Disorders (2010)*

confounds to the studies, and design features allow readers/consumers to rule out competing hypotheses for study findings.

- **Single-subject design studies**: Three different investigators or research groups must have conducted five high quality single subject design studies
  - High quality in single subject design studies is reflected by a) the absence of critical design flaws that create confounds and b) the demonstration of experimental control at least three times in each study.

- **Combination of evidence**: One high quality randomized or quasi-experimental group design study and three high quality single subject design studies conducted by at least three different investigators or research groups (across the group and single subject design studies).

Research Design and Publication

To be considered evidence-based, research must go through an objective and scientific review. It is often published in a peer-reviewed journal or publication. Peer-reviewed literature (also known as refereed literature) is scholarly work that generally represents high-quality original research in the field. Prior to publication, the literature is subject to a screening process by the journal based on predetermined standards of quality. Next, the article is reviewed by peer-reviewers who have expertise in the area of research. If accepted for publication, the manuscript is considered to be high quality evidence. Several of the current peer-reviewed journals in the field of ASD include: Focus on Children with ASD and Developmental Disorders, Journal on Autism and Developmental Disabilities, Research in Autism. Journal of Early Intervention.

Knowledge of research methodology is important for examining the quality of research studies. The most commonly referred types of educational research methodologies include:

(1) **Experimental or Quasi-experimental Group Designs** are used to examine the effectiveness of a particular intervention (or combination of interventions) on a group of students. In these type designs, the intervention is delivered to a group of students with similar characteristics and traits and pretest and posttest measurement occurs to determine the effectiveness (or outcome) of the intervention. These results are then compared with another group of students with similar characteristics and traits who did not receive the intervention or may have received another intervention. Participants are randomly assigned across the two groups in an experimental group design study; whereas, in quasi-experimental Group Designs randomization does not occur.

(2) **Single Subject Designs** are experimental designs, but rather than using a between group comparison to examine the effectiveness of an intervention, a within participant analysis occurs (i.e., the individual participant serves as his/her own group). Using a deductive reasoning approach, single subject design methodology begins with an experimental analysis of an intervention on a single or small group of participants and through systematic replication increases the applicability of the intervention to a larger group of participants. Evaluating the effectiveness of the intervention occurs through repeated measurement of observable behaviors in the presence and absence of the intervention. An additional component of single subject design methodology is the evaluation of the acceptability or social validity of an intervention.

(3) **Correlational Designs** are quantitative research designs, but differ from experimental research methodology in that causal relationships between the dependent and independent variables

cannot be inferred. In correlational design methodology, randomized assignment of two groups does not occur. Rather, analyses are conducted that determine the "degree" of the relationship in which the changes in the dependent measure(s) are influenced by the intervention. Analyses used include multiple regression, hierarchical linear modeling and structural equation modeling. Although correlational designs are a critical part of research, unfortunately, they cannot be utilized to determine a causal relationship between changes in the behavior as a result of the intervention. They can; however, be used to identify (or explain) mediating or moderating variables that may influence individuals responsiveness to various interventions.

(4) **Qualitative Designs** include various research methodologies (e.g., case study, ethnography, action research) that can be systematically employed to help researchers understand the qualities of a particular intervention (or research area of interest). Qualitative research is considered a type of scientific research in that data is generated through various methods (e.g., interviews, focus groups, etc.) to obtain empirical findings. However, the overall purpose of qualitative designs is different than other research methodologies. In general, qualitative research designs are not typically used to document the effectiveness of an intervention; but rather, to examine variables, such as the social validity or other factors that influence the effectiveness of that intervention.

Using a Multi-modal Approach

Just as individuals on the autism spectrum are affected differently and to varying degrees, the most effective interventions for individuals with ASD vary based on an individual's characteristics, strengths, areas of need, and learning styles[31]. Autism Spectrum Disorder is not a "one size fits all" disability and accordingly, it would be narrow-minded to suggest that an effective education should take a "one size fits all" approach. There is not one single universally effective methodology for all students with ASD. The highest quality educational programs incorporate a variety of empirically validated practices that are specifically selected to address the multitude of needs for any given student. Intervention must be properly matched to the particular student, the skill being taught, and the environment in which it is being used.

There is not one single universally effective methodology for all students with ASD.

Assessment Frameworks and Procedures

A comprehensive, multidisciplinary assessment is an integral part of the educational planning and instructional programming process for students with ASD. The use of appropriate assessment tools assists educational personnel in determining individualized goals and outcomes for developing an appropriate IEP. Due to the idiosyncratic communicative and social characteristics of individuals with ASD, accurate assessment of an individual's strengths and needs can be a challenge. Individuals with ASD may not always be able to understand instructions associated with assessments and may also have difficulty responding to test items. They may exhibit off-task behaviors, distractibility and variable motivation. Therefore, the use of a variety of assessment tools that can most accurately (and authentically) identify an individual student's strengths and needs across a variety of skills and instructional settings is recommended. Depending on the individual, specific skill set, and settings, a variety of assessment tools are typically employed including (1) standardized identification and assessment tools, (2) informal and curriculum-based assessment, and (3) data driven assessment.

Standardized Assessment Tools

Standardized identification and assessment tools can be useful in helping with eligibility determination as well as the educational planning process. Although each student with ASD has unique skills and strengths, a comparison of how the individual's

[31] *Simpson (2005)*

skills are displayed in relation to same age peers can provide educators with useful information. Assessments may be conducted to measure a student's skills in a variety of areas. There are four areas that comprise a core assessment. A language assessment that captures both expressive and receptive functioning yields information not only about knowledge of language concepts but also its functional use and application. Assessment of pragmatic communication and social skills provides important data about the social abilities of the student. Adaptive behavior helps determine areas of need required for independence. Finally, an academic assessment is helpful for the purpose of framing educational content. In addition to the core assessment, other areas may require evaluation. They include attention and skills related to executive functioning.

Although standardized assessments can be useful for determining skill levels of individuals with ASD, it is also important that school personnel are cognizant that standardized tests (particularly IQ or other assessments of intellectual functioning) often provide inaccurate results for these students. As a result, IQ and other standardized intellectual measures may underrepresent an individual's skills, including intelligence.[32] It is important to consider such variables when interpreting scores.

Few standardized assessment tools have been developed specifically for use with students with ASD. They include:

- Psychoeducational Profile - Third Edition (PEP-3; Schopler, Lansing, Reichler, & Marcus, 2005)
- Adolescent and Adult Psychoeducational Profile (AAPEP; Mesibov, Schopler, Schaffer, & Landrus, 1988)

Because there are so few assessments specifically designed for students with ASD, other standardized measures must be used to assess students' skill levels across a variety of domains. Therefore, when conducting formal assessment to assist in the educational planning process, educators must select evaluations based on a number of factors including:

- Area of disability
- Purpose of the assessment
- Population on which it was normed (age, race, ethnicity, gender)
- Testing format (Is it appropriate for the student?)
- Provision of a full range of standard scores
- Appropriate for both the chronological and mental age of the student
- Subsequent revisions to the assessment
- Recently administered assessments

Curriculum-based Assessment

Although formal assessments can be useful in the initial diagnosis and eligibility process, the use of informal developmental scales and curriculum-based assessments (CBAs) can often provide a more authentic and accurate assessment of a student's ability across a variety of environments and settings. Curriculum-based assessments provide an assessment of an individual's learning style, preferences, strengths, and needs. Additionally, these tools can be used to document progress toward mastery of learning objectives. In particular, CBAs provide an assessment of an individual's progress and needs in relation to a particular curriculum. The following are examples of several informal evaluations and CBAs that educators may find helpful when assessing and planning education programs for students with ASD.

- Brigance Diagnostic Inventory of Basic Skills (Brigance, 1983).
- The Assessment of Basic Language and Learning Skills - Revised (ABLLS-R; Partington, J., 2006)
- The Verbal Behavior Milestones Assessment and Placement Program (VBMAPP) (Sundberg, M.L., 2008).
- Assessment of Social and Communication Skills for Children with Autism (Quill et al., 2000)
- Hawaii Early Learning Profile (HELP) (Parks, M.A., 1997)

[32] *Lord & Volkmar (2002)*

Data-driven Assessment

Standardized and CBAs provide valuable information; however, the use of functional assessments that include ongoing data collection is one of the most useful aspects of assessment. This type of assessment is instrumental in assessing true ability and performance in the educational arena. In other words, a data-driven assessment answers the question "How does this individual function in his/her natural environment?" The most common method for data-driven assessments is the use of direct observational procedures; however, interviews or ratings scales completed by individuals who observe students across settings can also be useful in gathering pertinent information. Data-driven assessments are typically conducted to examine the use of functional skills, such as functional communication, social, self-help, vocational, and activities of daily living. Additionally, a data-driven assessment is often used to examine the functions of challenging behaviors that may interfere with an individual's participation in various school and community settings (commonly referred to as a Functional Behavioral Assessment [FBA]). Through the use of direct observational procedures (and interviews or rating scales) of an individual's strengths and needs across various settings and the demands of these settings, educators are able to gather information for designing an individualized curriculum to help facilitate functional skills across natural environments. For examples of data-driven assessments, see Appendix F.

Individual Services and Supports

Placement

Due to the learning characteristics of students with ASD, school divisions must provide a full continuum of placement options. This requires a flexible model that is able to address the individual needs of these students. Placement options range from total inclusive settings where students with ASD receive their education alongside nondisabled peers to private placement in residential programs for individuals with disabilities. Within that range, a wide variety of plans can be created to meet the distinct needs of each student. Using the continuum concept makes it more likely that each student will be placed appropriately in an environment that is specifically suited for him or her.

Due to the learning characteristics of students with ASD, school divisions must provide a full continuum of placement options. This requires a flexible model that is able to address the individual

Least Restrictive Environment (LRE)

The IDEA (2004) requires that students with disabilities be educated in the "least restrictive environment" (LRE) appropriate to meet their needs. When faced with the challenge of selecting an appropriate placement for a student, parents and professionals need to understand the intent of this law. The IDEA (2004) recommends that consideration of the LRE will begin with placement in the regular education classroom. However, IDEA (2004) recognizes that it is not appropriate to place all students in this setting. What is required is individualized consideration of all settings in terms of curriculum content, teaching methods employed, socialization opportunities, and all other key aspects of the educational program. Determination should be based on what will best meet the learning needs and develop the strengths of the student with ASD. Placement can never be based on the diagnosis or disability category.

Placing a student with ASD in a regular classroom will likely require individualized supports specifically chosen to address the distinctive learning needs.[33] Supports in the form of accommodations and modifications must be identified and implemented. More information on accommodations and modifications is provided in a subsequent section.

Inclusion Opportunities

Most students with ASD require direct instruction in communication and social interaction. They also benefit from the opportunity to learn from and with peers who do not have ASD. Teaching students how to form relationships, understand the feelings of others,

[33] *Harrower & Dunlap (2001)*

and develop appropriate social skills is likely just as important as academic learning when considering the future potential of the individual. Because social development is the greatest area of need, schools carry an important responsibility to work this into the curriculum whether the student with ASD is in the regular educational setting or the special education classroom.[34] Failing to provide students with ASD with social and learning opportunities is likely to substantially impede development.

An important consideration regarding placement is the amount of inclusion with peers. Inclusion is the practice of placing individuals with disabilities into settings and situations with their peers without disabilities. Providing inclusive experiences allows the individual with ASD to observe, learn, and practice social and communication skills in the very place they will use them. The degree of inclusion should be driven by the student's needs as determined by the IEP team, not by the division's convenience. Teams must assure a balance between direct, specialized instruction and inclusion. For many students with Asperger's Disorder, for example, their educational program is unbalanced with too much time in inclusion and not enough direct instruction in social communication and interaction. Likewise, students with ASD who also have a significant intellectual disability frequently experience the opposite; too much direct instruction time in self contained special education environments and not enough inclusive opportunities.

Teaching students how to form relationships, understand the feelings of others, and develop appropriate social skills is likely just as important as academic learning when considering the future potential of the individual. Because social development is the greatest area of need, schools carry an important responsibility to work this into the curriculum whether the student with ASD is in the regular educational setting or the special education classroom.

Inclusive experiences, therefore, require planning and coordination among team members. It is necessary to ensure the student is appropriately supported. This is especially important given the intense challenge students with ASD face in social functioning. To increase the success of inclusion experiences and maximize learning, educational teams have to:

- ✶ Balance inclusive experiences with a student's need for direct, specialized instruction;
- ✶ Select the inclusive environment that will result in the students meeting their goals;
- ✶ Assure that supports and instructional strategies are provided which will result in student learning; and
- ✶ Develop easy, informative, and effective communication between team members.

Modifications and Accommodations

Accommodations and modifications are tools and procedures that provide equal access to instruction and assessment for students with disabilities. They provide necessary supports for learning, becoming independent, and demonstrating social responsibility. According to the National Transitional Longitudinal Study (2007), regardless of the educational placement (special education classes, vocational classes, general education classes) most students with ASD will require curricular modifications, accommodations, and learning supports throughout their educational career.

Accommodations and modifications are determined by the IEP team. For students with ASD, there are many important factors to consider based on their unique learning characteristics. The list below provides a number of critical considerations. This is not an exhaustive list. Further, supports will vary significantly based on the student. Each area of potential accommodation or modification should be considered individually and be based on educational need.

- ✶ Completion of arrival, departure, and transitions;
- ✶ Organization of possessions and materials;
- ✶ Completion of classroom routines;

[34] *Harrower & Dunlap (2001)*

- Impact of classroom / school design and structure;
- Ability to follow schedules;
- Ability to follow rules;
- Impact of sensory stimulation;
- Organization of assignments;
- Completion of assignment;
- Completion of testing;
- Written performance;
- Participation in cooperative work;
- Completion of homework;
- Level of stress and agitation;
- Ability to communicate;
- Comprehension of language;
- Independence with self-help skills; and
- Interaction with peers.

Related Services

The pervasive nature of ASD often results in the need for a wide array of services to address the myriad of needs and impact on educational performance. Students with ASD are four times more likely to receive educational and school-based services than students with other disabilities.[35] Currently, students with ASD are most likely to receive speech language therapy, occupational therapy, and behavior management programs.

According to the *2010 Virginia Regulations Governing Special Education Programs for Children with Disabilities,* "related services" means transportation and such developmental, corrective, and other supportive services that are required to assist a student with a disability to benefit from special education. Related services include:

- speech-language pathology and audiology services;
- interpreting services;
- psychological services;
- physical and occupational therapy;
- recreation, including therapeutic recreation;
- early identification and assessment of disabilities in students;
- counseling services, including rehabilitation counseling;
- orientation and mobility services;
- medical services for diagnostic or evaluation purposes;
- school health services and school nurse services;
- social work services in schools; and
- parent counseling and training.

The list of related services is not exhaustive and may include other developmental, corrective, or supportive services if they are required to assist a student with a disability to benefit from special education.

Educational Curriculum

Curriculum is an organized program of instruction designed by a team of professionals that responds to the changing needs of individuals and supports growth toward independence and lifelong learning. Considerations of curricula involve much more than what to teach. Comprehensive curricula include the following: (a) scope and sequence of content taught, (b) the ways in which goals are prioritized, (c) the design of the educational environment, (d) educational materials, and (e) the range of instructional strategies incorporated. To put succinctly, curricula considerations include both ***what*** is taught and ***how*** it is taught.

Determining curricula is an ongoing process to ensure individualization and appropriateness. Evaluation of all curricular components should occur on a regular basis. Progress should be monitored frequently and adjustments made accordingly. Figure 1 on the next page shows how data informs educational practice and instructional strategies through the instructional process.

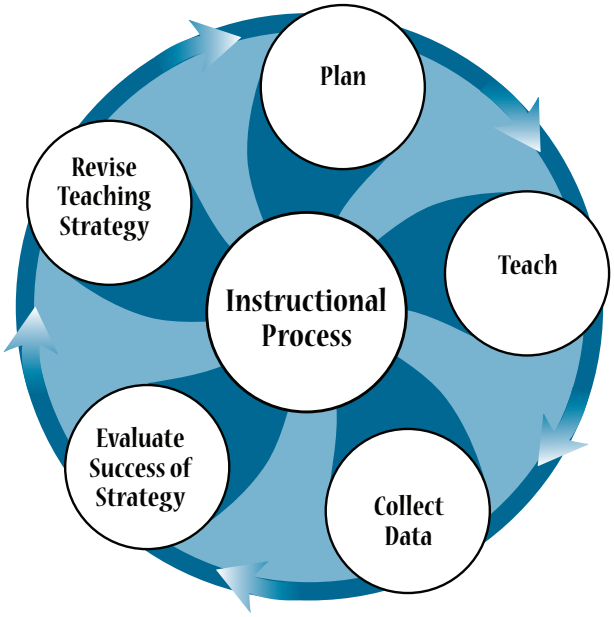
Determining curricula is an ongoing process to ensure individualization and appropriateness.

To determine an appropriate curriculum there should be a thorough evaluation of the following:

- Social behavior
- Language and communication

[35] *Mandell, Walrath, Manteuffel, Sgro & Pinto-Martin (2005)*

Figure 1: The Instructional Process



- ✶ Adaptive behavior
- ✶ Motor skills
- ✶ Atypical behaviors
- ✶ Academic performance
- ✶ Work habits including attention span, distractibility, and organization
- ✶ Level of independence
- ✶ Motivation and interests
- ✶ Access to typical peers
- ✶ Need for individual versus group instruction
- ✶ Need for multi-context (school, within school, community) instruction
- ✶ Continuity of programming across contexts

General Curriculum

In Virginia, the minimum curricular expectations for academic achievement is found in the Virginia Standards of Learning Curriculum Framework or the ASOL Curriculum Framework, as determined to be appropriate for a student with a disability by the IEP team. The Virginia Standards of Learning Curriculum Framework is the "general curriculum," to which students with disabilities must have access to the greatest extent possible. While adhering to the requirement that students with disabilities have access to the general education curriculum, the IEP team will determine additional curricular components. To implement the IEPs curricular components, educational professionals will determine appropriate instructional methodologies and whether accommodations are required.

Functional Curriculum

For some students, educational needs will be so immediate that functional skills may be the dominant curricular focus, with the goal that the Aligned Standards of Learning and Standards of Learning will have more applicability. A functional curriculum is one focused on practical academic and life skills is usually taught in community-based settings or natural environments with concrete materials that are a regular part of everyday life. The purpose of this type of instruction is to maximize the student's generalization of his/her skills to real life. Learning with a functional curriculum is critical to helping some students with ASD reach their potential as active participants in home, school, and community environments.

A functional curriculum is one focused on practical life skills and usually taught in community-based settings or natural environments with concrete materials that are a regular part of everyday life.

Mixtures of Curriculum

Often there is a balance that needs to be met when developing IEPs for students with ASD. There is not one curriculum mode that suits each person. The student's age, current level of functioning, and parental input must be considered when developing a comprehensive program that will address the needs of a student. It may be necessary to use a mixed-method curriculum to recognize a student's individual knowledge, readiness, language, learning style, and interests. A mixed curriculum is most likely to be built around existing general curriculum and to involve teachers' alterations, modifications and enhancements. The intent of a mixed curriculum is to maximize each student's growth and individual success by meeting each student where he or she is and assisting in the learning process.

Too often students with Asperger's Disorder who have the academic skill to graduate with a standard

or higher designation diploma do not receive specialized instruction in important social and functional living skills that would increase their outcomes. Thus, too many students with higher academic abilities are not able to achieve successful employment or independent living because of the lack of specialized instruction in these important areas. A student with ASD who is able to manage complex academic work should not have to sacrifice their academic goals to receive instruction in functional and social skill needs. They should not have to choose between receiving specialized instruction in functional work and daily living skills or academic rigor. Instead, IEP teams should be flexible and take advantage of the extra time provided to students with disabilities to meet their functional *and* academic instructional needs.

Focus Areas for Educational Intervention

ASD encompasses an extremely broad continuum of features in individual students.[36] This results in unique learning characteristics that differ widely from typical learners as well as learners with other types of disabilities (Simpson, 2005). The multidimensional nature of this disorder provides a complex set of issues for educators. Adding to the complexity is the presence of a wide array of abilities and difficulties. Students with ASD may have a spectrum of skills. This means that his or her abilities may be significantly delayed in some areas of development and advanced in others. It is important to note that educators sometimes confuse these splinter skills as representing a student's overall ability. When such assumptions are made, significant errors may result in reported levels of performance and related goals and educational methods. For example, if a student with ASD has a splinter skill in mathematical operations, a student may not understand mathematical quantitative and positional concepts. Focusing on the area of strength and overlooking the area of need will result in more uneven growth of skills. Likewise, failing to encourage functional use of splinter skills can be a missed opportunity. Splinter skills can represent opportunities for future employment if they are nurtured to functional use. Sometimes, splinter skills can be used as a strategy to assist the student's learning in other areas.

Too often students with Asperger's Disorder who have the academic skills to graduate with a standard or higher designation diploma do not receive specialized instruction in important social and functional living skills that would increase their outcomes.

Due to the complexity of ASD, it is crucial for educators to take into account the tremendous array of needs. The following section outlines focus areas for educational intervention for students with ASD.

Social Development and Peer Interaction

Characteristics of Social Development and Peer Interaction:

Qualitative impairment in social interaction is regarded as the hallmark characteristic of ASD. Students with ASD demonstrate qualitative differences in social interaction and often have difficulty establishing relationships. Social ability ranges from being socially aloof, to being socially remote, to being overly social but acting inappropriately or odd. The difficulties demonstrated with social functioning should not be seen as a lack of interest or unwillingness to interact with others; ineffective interactions may result from an inability to distill social information from the situation and a deficiency or absence of appropriate skills to respond. Individuals with ASD may not notice important social cues and may miss necessary environmental or personal information needed to be successful. Further, they may demonstrate impairment in the use of behaviors and communication needed to regulate a social situation.

Social skill development is an essential curricular area for students with ASD, as well as a crucial component of any intervention plan for changing problem behaviors. Being capable in social

[36] *Johnson (2007)*

situations allows the individual to successfully participate in meaningful life activities. Lack of social understanding impacts all aspects of community involvement including work, school, interpersonal relationships and recreational activities. In order to help students, it is necessary to carefully assess their social competencies to determine which social skills must be directly taught. Students with ASD do not learn social skills incidentally by observation and participation. It is generally necessary to target specific skills for explicit instruction and to provide support for using the skills in social situations.

Being capable in social situations allows the individual to successfully participate in meaningful life activities.

Instructional Focus Areas:

- Joint attention
- Nonverbal interaction
- Imitation
- Peer interaction
- Turn taking
- Sharing
- Social reciprocity
- Emotional reciprocity
- Self-regulation
- Group interaction/participation
- Self-awareness
- Perspective taking
- Social rules
- Social hierarchy

Communication

Characteristics of Communication:

All people with ASD experience language and communication difficulties, although there are considerable differences in abilities among individuals. Impairment is present in both understanding and use of communication. Communication skills can range from nonverbal, gestural, use of single words, use of phrases, all the way to fluid speech and language. For some with Asperger's Disorder, language skills can even be advanced. Those with extensive language generally have deficits in the area of pragmatics (the social use of language.)[37] Some students with ASD may appear as though communication is unimportant.

This is likely not an intentional action but rather an inability to understand the need to communicate, how to communicate, or even what to communicate. Engagement in echolalia, the repetition of another person's speech without communicative intent, is especially common in autistic disorder. Also common is perseveration on a word or phrase, or using the same word or phrase to convey different messages. Those with Asperger's Disorder may be quite verbal, but may limit their communication to only a few all-consuming topics, may use overly formal language, or display atypical speech patterns.[38]

Helping students with ASD develop communication skills so they can request, interact socially, share and seek information, express emotions, and protest or escape aversive situations must be a priority.

Being able to communicate with others is perhaps the most important consideration for students with ASD and may be one of the greatest challenges for educators and families. Most people are unaware of the complexity of the development of typical language and communication skills, because for most children, this occurs seemingly automatically. Many students with ASD have not developed the skills needed for spontaneous communication, and must therefore be taught. Helping students with ASD develop communication skills so they can request, interact socially, share and seek information, express emotions, and protest or escape aversive situations must be a priority. Supporting all forms of communication, including verbal, signing, pictorial and augmentative devices promote learning. For those with limited or no verbal communication, teaching a combination of forms (e.g. verbal and pictorial, pictorial and sign) is often beneficial.

Instructional Focus Areas:

- Motivation to communicate
- Function of communication

[37] *National Research Council (2001)*

[38] *Johnson (2007)*

- Means of communication
- Ability to understand and use nonverbal communication, such as gestures and other subtleties of communication, such as personal space
- Conversational skills
- Voice quality
- Pragmatic skills

Activities of Daily Living

Characteristics of Self-help and Independence Skills: Activities of daily living refer to personal care activities necessary for everyday living. Although the range of skills can be defined more or less broadly, virtually all categorizations include a focus on self-care skills related to basic biological functions and include such activities as eating and toileting. Other activities pertain to personal, home and community living skills, with applicable areas for young children including dressing, grooming, cleaning up and safety-related behaviors. Impairment in activities of daily living may be present in any student with ASD regardless of ability. For example, the seven-year-old student with autism may not dress himself independently, while the seven year old with Asperger's Disorder may have difficulty with buttons and snaps on clothing.

One of the fundamental goals of education is that a student acquires the skills needed to function as independently as possible in the world. There are many behaviors that typically developing students learn without specialized teaching, but require specific instruction for those with ASD. For students with Asperger's Disorder this may entail instruction related to activities involving fine motor skills such as tying a bow, or organizational tasks such as packing a book bag. Teaching adaptive skills, with specific plans for generalization across settings, is an important educational objective for every student with ASD.

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Instructional Focus Areas:

- Toileting
- Personal hygiene
- Dressing
- Eating
- Schedules
- Routines
- Material preparation
- Organization
- Task completion
- Cleaning up
- School independence
- Home independence
- Safety
- Health care
- Community independence
- Transportation related skills

Play and Leisure

Characteristics of Play, Recreation, and Leisure: Purposeful play, recreation and leisure – the ways in which we spend our personal time and develop interests that result in relationships and employment choices – may not naturally occur for students with ASD. These students, therefore, may not play in a manner that is beneficial for development. Skill deficits and interfering behavior often inhibit productive play. Instead of playing with toys in imaginative or symbolic ways, they may perseverate on objects, use them for self-stimulation, or engage in repetitive acts. Play in students with ASD is often solitary. An assumption should not be made that the student does not want to play with peers, but instead, may not have the skills needed to interact successfully.

Educational programs for students with ASD often need to include a play or leisure component to help develop skills and teach the student how to use spare time productively. Students may need support in finding appropriate tasks and learning activities, then expanding time on task. Developing activities that can be enjoyed at home and school are both important.

Instructional Focus Areas:

- Concrete play

- Parallel play
- Time on task
- Dramatic play
- Social play
- Games
- Rule following
- Using strategy

Attention

Characteristics of Attention:

Individuals with ASD fail to receive information in the same way as their peers due to atypical patterns of attending. Those with ASD have difficulty sustaining attention for extended periods of time and also shifting attention appropriately. Attending may be impacted by the individual's restricted range of interests. Impairment is also common in controlling the direction of the attention. Attending to irrelevant aspects of a situation may lead to missing key information or attending to meaningless components.

Use of structure and supports can help mediate the impact of attention difficulties. Systematically providing instruction designed to improve skills related to attending and time on task may be necessary. For many students, especially those who have strong cognitive abilities, it may be helpful to teach them to identify when they are attending or on task. This is a valuable skill that can be used in a myriad of real life contexts to increase independencies.

Instructional Focus Areas:

- Sustained attention
- Saliency (what is important)
- Shifting attention

Executive Functioning

Characteristics of Executive Functioning:

Executive functioning incorporates the mental processes needed to plan and execute actions. Present are deficits in the cognitive abilities that allow the individual to perform such tasks efficiently and successfully. Individuals with ASD are reported to have challenges in many components related to executive functioning including organizing, working memory, impulse control, inhibition, and mental flexibility, as well as the initiation and monitoring of actions. This results in impaired performance in problem solving and planning for future behavior.

Executive functioning skills are clearly required for learning. Further, they are needed for goal-directed behavior.[39] Similar to attending, direct instruction targeting relevant components of executive functioning may be required. For example, a student may benefit from receiving direct instruction on inhibiting a response or learning how to problem solve. Additionally, to facilitate independence, structure and supports are often a requisite component of the educational plan.

Instructional Focus Areas:

- Goal setting
- Planning
- Task completion
- Sequencing steps
- Organization skills
- Initiation
- Inhibition
- Pacing
- Self-monitoring
- Emotional regulation

Academic Performance

Characteristics of Academic Performance:

Academic performance, for this discussion, refers to tasks related to traditional reading and mathematics skills as well as science and social studies. The cognitive abilities of students with ASD vary significantly and are impacted by their social and communication skills. ASD may affect aspects of cognition, which in turn impacts important areas of thinking and learning. Students will likely have difficulty with abstract concepts and nuances and have a greater ability to learn material by rote than by symbolism and analogy.[40] These factors are likely to result in challenges in learning academic content.

Adding further concern is the possibility of uneven skill development. Abilities may be significantly

[39] *Verte (2006)*

[40] *National Research Council (2001); Klin and Shepard, 1994)*

Often, strengths of the student with ASD can be used to support their learning in areas of difficulty.

delayed in some areas of development and advanced in others. Some may demonstrate advanced development or giftedness. Possible areas of giftedness include memory, focus, calculation, block design, music and art.[41, 42]

Targeting academic skills is obviously a federal and state requirement. Determining what skills to target and how they are taught are important considerations for each student. Students may require adaptations or modifications to academic work. Making content concrete and understandable and focusing on higher level language skills may be beneficial. Often, strengths of the student with ASD can be used to support their learning in areas of difficulty.[43] Determination of instructional content is discussed further in other sections of this Guide.

Instructional Focus Areas:

- ✶ Reading
- ✶ Mathematics
- ✶ Science
- ✶ Social Studies

Motor Skills

Characteristics of Motor Skills:

Gross and fine motor deficits are frequently present in individuals with ASD. In the area of gross motor, the person may appear to be clumsy or uncoordinated. Participation in physical education or group games may be a challenge. With regard to fine motor, the person may have poor, slow, or labored penmanship. They may have difficulty with activities of daily living such as buttoning, zipping or snapping. Decreased or increased muscle tone may be present making performance of everyday activities difficult. Motor planning may also be impacted resulting in problems executing steps to a motor activity such as kicking a ball or tying a shoe.

These deficits may result in decreased awareness of the environment, diminished learning, and difficulty with the completion of even routine activities. Motor development plays an important role in learning. Young students typically use motor skills to explore the environment, engage in physical activities, and develop basic academic skills, such as handwriting. Instruction regarding motor skills should target activities needed for increased independence and social interaction. For example, opening a straw wrapper will increase independence at lunch. Learning to throw a ball may increase social interaction at recess. As with most skills, for the student with ASD, practice is necessary. Instruction often requires direct focus with opportunities for execution each day. It is often necessary to elicit the services of an occupational therapist to address motor functioning.

Instructional Focus Areas:

- ✶ Motor control
- ✶ Postural stability
- ✶ Muscle tone
- ✶ Handwriting
- ✶ Coloring
- ✶ Cutting
- ✶ Playground related skills
- ✶ Activities of daily living related skills

Sensory Processing

Characteristics of Sensory Processing:

Sensory motor processing involves the ability to take in information from the environment, organize it, make sense of it and execute a response. When the system is working correctly, this happens automatically and we move and respond smoothly. When the sensory system is not functioning appropriately, there may be interference, distractions, and difficulty with behavior. There are seven senses we use. These include visual, auditory, olfactory, oral, tactile, proprioceptive (registration of where your body is in space and in relation to objects), and vestibular (balance and movement). Over sensitivity and/or under sensitivity to sensory input is common. Sensory experiences can be distorted and confusing. It is not unusual for an individual to be hypersensitive

[41] *Johnson (2007); Williams (2005)*

[42] *National Research Council (2001)*

[43] *National Research Council (2001)*

(overly sensitive) in one or more senses (i.e., noise and light) and hyposensitive (under sensitive) in others (i.e., pain and cold). The preferences and combination of preferences or aversions towards certain sensory experiences is highly individualized.

In response to sensory sensitivities, students with ASD may avoid or attempt to avoid activities that contain certain stimulation. For example, the individual who is sensitive to noise may attempt to avoid a loud cafeteria. Conversely, the individual who is under-stimulated may seek activities that will provide the desired input. An example is a student who craves proprioceptive input may frequently crawl under his desk or under a bean bag. The draw to certain stimuli can be strong enough to create a fixation. These sensory abnormalities make everyday life challenging and detract from learning experiences.

Parents and teachers must work together to identify the sensory profile of the student and to determine appropriate strategies to address each. A professional who is knowledgeable about sensory motor processing should be consulted for specific strategies for any individual. Generally, this professional is an occupational therapist.

Instructional Focus Areas:

- ✶ Coping skills
- ✶ Desensitization
- ✶ Self-management
- ✶ Self-awareness
- ✶ Self-advocacy in communicating sensory needs
- ✶ Ability to proactively or appropriately seek means to receive desired sensory experiences

Sexuality

Characteristics of Sexuality:

Sexuality is a natural part of life that each person has the right to express. The social, communication, and sensory difficulties present in individuals with ASD can impede sexual development. Challenges with sexuality can take many forms. There may be difficulty with expression as the individual may not know what is considered appropriate or inappropriate behavior. Issues related to time and place are common. Unacceptable social contact or problems with privacy may also be a concern.

Sexuality can lead to personal dignity, higher quality of life, and interpersonal relationships. Therefore, it is critical not to overlook this area. Teaching techniques regarding sexuality must be functional and concrete and include the broad range of issues related to this area.

Instructional Focus Areas:

- ✶ Understanding one's own body
- ✶ Appropriate care
- ✶ Rules for sexual expression
- ✶ Privacy
- ✶ Social contact

Self-determination

Characteristics of Self-Determination:

Attaining the goals of economic independence and self-sufficiency depends upon first being self-determined. Self-determination is essentially the ability to make meaningful choices in one's own life free from undue external influences. Individuals with ASD may have little to no experience with expressing personal preferences, making decisions based on those preferences and assuming personal responsibility. This may be attributed to issues with cognition, communication, or simply a lack of opportunity.

Promoting self-determination means addressing skills, knowledge, and attitudes students will need to take more control over and responsibility for their lives (Clarke, et al. 2004). Educators not only must teach self-determination but also refrain from unnecessarily imposing limitations on self-determination. Increasing instruction in self-determination requires incorporating opportunities into all aspects of the day. This can be easily done by increasing occasions for

Attaining the goals of economic independence and self-sufficiency depends upon first being self-determined.

choice making and control. While a student with ASD may not be able to execute all components of self-determination, there are portions of even complex skills such as decision-making or problem-solving in which students can participate, thus making them more self-determined.

The Virginia Department of Education's *I'm Determined* project provides direct instruction, models and opportunities to develop and practice skills related to self-determination. Additional information can be found on the project Web site (*https://php.radford.edu/~imdetermined/*).

Instructional Focus Areas:

- Making choices
- Accessing resources
- Communicating preferences
- Making decisions
- Setting attainable goals
- Time management
- Identifying problems and solutions
- Advocating for accommodations
- Self-awareness
- Developing greater awareness of individual needs

Restricted and Repetitive Patterns of Behavior

Characteristics of Restrictive and Repetitive Behaviors:

Students with ASD often demonstrate unusual and distinctive patterns of behaviors, including preoccupation with objects or parts of objects, intense interest in specific topics, or an intense need for sameness. Students may engage in stereotyped, or repetitive motor movements, which commonly manifest as finger flicking, hand flapping, unusual eye gazing, habitual toe walking, and or spinning.[44]

It is common for such behaviors to interfere with the student's education. Stereotypies can interfere with learning new behaviors and task completion and perseverations may limit motivation.[45] These behaviors may also impact social performance. For example, a narrow range of interests may dominate conversations, and conversations may be one-sided. At times, safety may be a concern as safety awareness is absent or limited. When developing an educational plan, restricted and repetitive patterns of behaviors must be identified and careful consideration given to their impact. For those behaviors that interfere with functioning or reduce safety, intensive instruction to reduce or mediate the impact of the behavior may be necessary.

Many of the restricted and repetitive behaviors associated with ASD may be caused by a number of different factors, such as a hypersensitivity or hyposensitivity to sensory stimulation, difficulties in understanding social situations, limited play skills, difficulties with changes in routine, and anxiety. When planning instruction, educators need to consider the behavior and its function for that individual student and develop a plan accordingly. Successful teaching strategies should focus on making environmental adaptations to decrease interfering behavior and help the student learn other more appropriate behaviors that will serve the same function.

Instructional Focus Areas:

- Communication skills
- Social skills
- Play skills
- Coping skills
- Self-management
- Safety awareness

Interfering Behavior

Characteristics of Interfering Behavior:

Some individuals with ASD display challenging behavior that can interfere or be a barrier to successful inclusion and learning. Interfering behavior can take many forms and range in severity. Tantrums are common. Behavior may elaborate into self-injury, aggression, or property destruction. Most interfering behaviors serve a specific function in the life of the student and are a form of communication.

An important aspect of educational planning is to address behavior through conducting a functional behavior assessment and incorporating a behavior intervention plan. In order to change the behavior

[44] *Johnson (2007)*

[45] *Johnson (2007)*

we must assess the function of problem behavior and teach a functional skill that will accomplish the same outcome for the person (also called a replacement behavior).[46] With this view, it is important to understand that problem behavior is not something that has to be suppressed. Instead, problem behavior is something that serves a purpose and should be appropriately replaced. More information on addressing interfering behaviors in the following "Ensuring Student's Ability to Access Education" section.

Instructional Focus Areas:

- ✶ Communication skills
- ✶ Social skills
- ✶ Play skills
- ✶ Coping skills
- ✶ Self-management
- ✶ Safety awareness

Important Considerations in Educational Programming

Early Intervention

Parents of students with ASD generally identify concerns by the age of 12 to 18 months.[47] Some parents noticed symptoms from birth, while other parents describe normal development until around 16 to 20 months. While research indicates that the time of onset does not predict the eventual outcomes experienced by students with ASD, new data make it clear that students who are diagnosed early and who participate in appropriate intervention programs for at least 25 hours per week generally have better outcomes, including less restrictive future educational environments.[48] Children suspected of having an ASD should enter into an early intervention program as soon as concern is identified.[49]

Generalization

Students with ASD have difficulty applying learned skills in new or novel situations, a concept known as "generalization." Accounting for generalization should be a core component of the educational curriculum. The student's ability to generalize should be considered across a variety of circumstances: time, settings, materials, and persons. Each is explained below:

Time – maintenance of the skill over time, especially after the conclusion of instruction.

Settings – ability to apply the skill outside of the environment in which it was acquired, for example, in other areas of the school building or division, at home, and in the community.

Materials – ability to transfer the skill to other examples of the same item.

Persons – ability to apply the skill regardless of who is in the environment and with whom the student is interacting.

For many students, careful planning must occur to ensure generalization of skills. Students must practice skills using a variety of environments, materials and people. When assessing skill mastery, generalization should be included in data collection.

The following strategies may assist in fostering skill generalization:

- ✶ Include realistic environmental features in skill instruction and teaching environments.
- ✶ Conduct skill instruction in as naturally occurring environments as possible.
- ✶ Conduct skill instruction in a variety of settings with a variety of instructors.
- ✶ Pair skill instruction with naturally occurring, positively rewarding consequences.
- ✶ Transfer mastered skills to a variety of environments.

[46] *O'Neill, Horner, Albin, Sprague, Storey, & Newton (1997)*
[47] *Zwaigenbaum (2009)*
[48] *Johnson (2007)*
[49] *NRC (2001)*

Assistive Technology

Assistive Technologies (AT) are the tools and strategies that provide students with disabilities access to applications (hardware or software) that assist with interactions and learning. Educational and Assistive Technologies give students with disabilities greater access to the general education curriculum and settings, and greater possibilities to master content, interact with others and increase independence. In addition, AT can significantly impact self-expression, self-esteem, and overall quality of life.

According to IDEA (2004) and the *2010 Regulations Governing Special Education Programs for Children with Disabilities in Virginia*, Assistive Technology means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a person with a disability. Assistive technology services refer to any service that directly assists the person with a disability in the selection, acquisition, or use of an AT device. The term includes:

1. The evaluation of the needs of a student with a disability, including a functional evaluation of the student in the student's customary environment;

2. Purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices for students with disabilities;

3. Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing assistive technology devices;

4. Coordinating and using other therapies, interventions, or services with AT devices, such as those associated with existing education and rehabilitation plans and programs;
5. Training or technical assistance for a student with a disability or, if appropriate, that student's family; and
6. Training or technical assistance for professionals (including individuals providing education or rehabilitation services), employers, or other individuals who provide services to employ or are otherwise substantially involved in the major life functions of that student.

Care must be taken to consider AT for the range of learning needs identified in a student with ASD. AT considerations should not be limited to expressive communication needs. AT can be considered for at least the following areas of need according to Virginia Department of Education's "Assistive Technology: A Framework for Consideration and Assessment (2008)":

- ✶ Writing
- ✶ Spelling
- ✶ Reading
- ✶ Mathematics
- ✶ Study/organizational skills
- ✶ Listening
- ✶ Communication
- ✶ Activities of daily living
- ✶ Recreation, leisure and adaptive play
- ✶ Positioning, seating and mobility
- ✶ Computer access

Assistive Technology can be of different levels and complexities and can be considered no-tech, low-tech, mid-tech, or high-tech tools. It is not the complexity of the tool that is the consideration, but the impact on the student. Examples of ATs include:

Reading and writing software – Alphasmart, Neo, Intellitalk, books on tape

Low technology reading and writing materials – pencil grip, electronic spell checkers, editing tools

Computer peripherals – intellikeys, switches, touchscreens

Other – computers, iPad, iTouch, assistive technology applications, calculators, digital cameras

Augmentative and Alternative Communication

Assistive and Augmentative Communication (AAC) is a type of Assistive Technology for communication. Difficulty with communication is a critical issue for students with ASD. Communication impairments can impact an individual's ability to either communicate with others (expressive communication) and/or receive communication from others (receptive communication). AAC interventions assist individuals with communication impairments to increase skills in this area and to become more competent communicators.

It is critical for IEP teams to consider AAC for any student with ASD. For some students, AAC may act as the primary mode of communication. For others, it may be a secondary form. AAC may supplement or augment verbal communication providing the means for the student to communicate more effectively and efficiently. In many instances, it even fosters increased verbal communication. Research has demonstrated that AAC often results in increased verbal production (Schlosser & Wendt, 2008).

There is not one single AAC system appropriate to all students with ASD. An array of technologies and systems is available. Each draws on different skills and takes advantage of different strengths. Individuals with ASD have been successful using low-technology AAC systems such as gestures or sign language as well as concrete visual-spatial systems (e.g., photographs, pictures, written words). Technological advances in AAC have provided a "voice" to many individuals through voice output communication aids and talking word processors.

Choosing the appropriate AAC system depends upon a proper assessment of an individual's current ability to communicate, or "communicative competence." There is currently not a standard assessment protocol available nor is there an autism- or ASD-specific AAC assessment. Determination of AAC interventions requires a team approach and a careful analysis of the student's abilities, performance related to receptive and expressive communication, and his or her potential for change through instruction. Immediacy of need for increased or improved communication is a vital consideration and may often be a decisive factor.

It is important for IEP teams to consider AAC for any student with ASD. For some students, AAC may act as the primary mode of communication. For others, it may be a secondary form. AAC may supplement or augment verbal communication providing the means for the student to communicate more effectively and efficiently. In many instances, it even fosters increased verbal communication. Research has demonstrated that AAC often results in increased verbal production (Schlosser & Wendt, 2008).

The Educational Environment

Individuals with ASD benefit from an environment that is structured and that provides predictability and organization. Professionals and parents should work together to create an environment that promotes consistency and enhances independence. Structure is a key consideration for all educational settings regardless of whether it is a general education or special education classroom, or another setting in the school such as the cafeteria, art room, or playground. The following considerations are critical for providing structure and predictability.

Organization and Structure

Physical Environment

A poorly planned or ill-designed physical learning environment can sabotage learning by imposing distractions, creating sensory reactions or producing anxiety. The physical environment must be simplistic and organized with clearly defined

physical boundaries. Minimize distractions, both auditory and visual. Intended paths of travel and item locations should be obvious. Different activities should occur in specific, obvious locations. Convey the purpose of an area with pictures. Matching pictures can be included on a daily picture schedule and/or transportable pictures carried by a student navigating the room.

Schedules

The use of schedules can help the student to be aware of upcoming activities, assignments, and events. A daily schedule can make the day more predictable and less anxiety provoking. A weekly schedule can relieve uncertainty about upcoming events. The schedule should reveal whether it is a typical day or a day with unusual events. In the case of unusual events, preparation should take place well before its actual occurrence. A schedule should be based on the needs of the student. This means the length of the schedule, level of detail and symbolic representation should be individualized. Any one or more of the following can be used to represent activities and events:

- Physical Objects
- Photographs
- Drawings
- Written language[50]

Individuals with ASD benefit from an environment that is structured and that provides predictability and organization. Professionals and parents should work together to create an environment that promotes consistency and enhances independence.

Transitions

Transitioning is a significant issue for students with ASD. This may include transitioning from one activity to another, from one setting to another, or from one teacher to another. Individuals with ASD may not be aware of naturally occurring environmental cues signaling a change, whether routine or unusual. Further, they may not be aware of what is happening next. Advanced preparation for the transition and the pending activity can prevent students from feeling anxious, frustrated, and overwhelmed. Clearly defined expectations can increase knowledge of the rules, while reinforcement for appropriate behavior may provide the necessary motivation. When choosing how to prepare for a transition, consideration should be given to how the student best receives information and reasons for the transition difficulties.

Timekeeping

Understanding temporal relations, or the passage of time, is difficult for many individuals with ASD. Providing an appropriate timekeeping device or strategy to indicate the length of an activity can reduce anxiety and support independence. A clock, stopwatch, alarm and hour/minute glass are examples of timekeeping pieces that can be provided to an individual student or class.

Supplies

Organization of materials can be problematic resulting in difficulty preparing for class activities, working on assignments and even completing daily routines. Arrangement of materials should be carefully planned to orchestrate accessibility and easy management. Additional organization measures such as labeling or color coding may be helpful.

Rules

Class rules are an important component of an orderly educational environment. Rules should be minimal (no more than five) and easy to comprehend and apply. Rules can be represented in a format that is readily understood by the student. This may include pictures, drawings and/or words. Steps should be taken to ensure the student with ASD knows, understands, and can apply the rules in a variety of situations.

Classroom Management

Classroom management for a classroom with a student with ASD, whether general education or special education, is going to be a mix of traditional

[50] *Dyrbjerg (2007)*

It is crucial that teachers spend time outside of school hours to create a classroom management system that will optimize direct instruction of students, engagement, and result in learning, while minimizing chaos or confusion for staff and students.

and nontraditional classroom management techniques. Traditional techniques entail such strategies as creating rules, lesson plans, routines, and classroom procedures, while nontraditional techniques include such strategies as using visual supports, providing schedules, and collaborating with many adults in a single day.

An important part of managing a classroom for a student with ASD is teaming. In many cases, as a classroom teacher, you are a member of a team that includes 2-4 other adults that will work with you on a daily basis. This may occur within the classroom or other school settings. As the classroom teacher, you will often be expected to be the instructional leader. With so many people working with one student, each party involved will need to build their collaboration and communication skills efficiently. Collaboration helps students with ASD to function better in the home, community, and throughout the school building.

For those receiving services in a classroom for students with disabilities (ASD or otherwise) classroom management becomes a challenge and an acute need. Typically, there are multiple adults, often consisting of one classroom teacher and at least one paraprofessional, working in a small space. There are frequent transitions between activities and room locations as activities for this group may be short in duration due to learning needs. Effective instruction requires teachers to ensure students receive sufficient amounts of adult attention in one-to-one and very small group instruction to meet individualized goals, further adding to the need for effective classroom management.

It is crucial that teachers spend time outside of school hours to create a classroom management system that will optimize direct instruction of students, engagement, and result in learning, while minimizing chaos or confusion for staff and students.

There are a number of strategies to assist with this endeavor:

- ✶ Providing a written plan for classroom roles and responsibilities will be helpful in creating an organized and effective classroom staff team.
- ✶ Establishing a job chart that is visually displayed will help all teaching staff understand their individual responsibilities and shared tasks.
- ✶ Assigning staff to an activity, a location of the room, or specific students will ensure all students receive adult attention as needed and will reduce confusion regarding roles and responsibilities.
- ✶ Providing written instructions for implementing programming, whether it is for skill acquisition or behavior support, and verbally discussing them prior to instruction, will ensure everyone is knowledgeable of the program.
- ✶ Matching class activities with staff strengths and interests will create motivation and enhance learning.
- ✶ Working together to have each person establish their morning break (if applicable) and lunch time during activities which can be handled by a smaller amount of staff members will help ensure staff are available during key periods and instructional sessions.

Personnel

As noted above, in many cases there is a team of parents and professionals who support a student with ASD. Professionals typically include a general education teacher, special education teacher, speech/language pathologist, and occupational therapist. Others, such as a guidance counselor or physical therapist, may also be part of the team.

Another potential service provider is the paraprofessional. Paraprofessionals are essential to the learning process for students with ASD. When professionals collaborate with them, paraprofessionals can play an essential role in supporting students academically, socially and behaviorally.

Schools are faced with urgent and impactful decisions regarding staffing of personnel. According to the Virginia Regulations Governing Special Education Programs for Students with Disabilities in Virginia (2010), when providing services to a student with autism, there should be one teacher for every six students or one teacher and one paraprofessional for every eight children. It goes without saying that schools must first and foremost abide by state law. However, careful consideration must be given to the pervasive and tremendous needs of this group of students. The challenge is how to provide differentiated curricula that are adapted to the social, cognitive, and communication needs of students with ASD. Low student-teacher ratios are frequently needed to provide an appropriate education. It is strongly recommended that each student's needs are evaluated on an individual basis to make staffing determinations.[51] For professionals and paraprofessionals to effectively support this group, there is a strong consensus in the research literature that all working with a student with ASD must be qualified to do so.[52] Professionals must be familiar with theory and research concerning best practices for students with ASD including instructional methodologies, assistive technology, augmentative and alternative communication, inclusion, adaptation of the environment, language interventions, social supports, behavior supports, assessment, and the effective use of data collection systems (NRC, 2001). Proper education and training can help shape the specific skills needed to work in a class with students with ASD and is essential for professionals to provide effective and accessible instruction that optimizes learning outcome for students with ASD.

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Systematic Instruction

Systematic instruction is required to teach students with ASD to be more independent and capable. Systematic instruction refers to instruction that is organized and follows a logical order. The sequence of instruction proceeds methodically from the easiest and most basic elements to more difficult and complex material. Instructional activities are adapted to the student's age, abilities, and learning style.

Through systematic instruction, the level of difficulty gradually increases while support is provided. Teachers and parents may need to break complex tasks down into subtasks and reinforce in small, teachable steps. By scaffolding learning, the student's frustration will be minimized and learning maximized.

It is important to remember, while the premise of instruction is to teach in a sequential order, students with ASD may have highly developed skills in one area and be delayed in another. Further, as students age, their educational needs will change. Educators should be careful not to assume instruction should be provided according to standard developmental markers or in a conventional progression. It may be beneficial for many not to teach in a direct linear fashion but instead to teach based on the actual needs and strengths of the student.

Intensive Instruction

Active engagement in intensive instructional programming is also required for optimal progress. Intensity of intervention refers to: (a) number of intervention hours per week; (b) amount of

[51] *Scheuermann, Webber, Boutot, & Goodwin, (2003); Simpson, (2003)*

[52] *Simpson (2004)*

intervention provided throughout the year, including summer months; and, (c) the degree of active engagement on the part of the student. For progress to occur in social and cognitive abilities, communication skills, adaptive skills, amelioration of behavioral difficulties, and generalization of abilities across multiple environments, instruction may be provided through a full range of formats. These include one-to-one instruction, small group instruction, student-initiated interactions, teacher-initiated interactions, and play and peer-mediated interactions.

Although there is no definitive level of sufficient intensity appropriate for every student with ASD, it is generally agreed that more quality intervention produces better outcomes. The NRC (2001) recommended students with ASD be actively engaged in systematic and intensive educational intervention.[53] The level of intervention intensity is an individualized determination and is based on the specific needs of the student and the skill taught.

The following considerations may be used when deciding the level of instructional intensity:

- ✶ Assess the need for individual versus small group versus whole group instruction;
- ✶ Assess the need for year-round services (extended school year);
- ✶ Assess individual's and family's strengths and needs in regard to programming; and
- ✶ Assess ongoing data to modify the type or quantity of instruction.

The level of intervention intensity is an individualized determination and is based on the specific needs of the student and the skill taught.

Instructional Strategies

Instructional strategies implemented with students with ASD need to be evidence-based. This requires the strategy to have credible empirical research as a foundation. There are a number of instructional strategies identified as effective for this population. Contrary to the rhetoric found in public media, there is not just one single approach or program superior to others for all students with ASD.[54] Although programs for students with ASD may differ in philosophy and relative emphasis on particular strategies, they share many common goals.[55] Appendix C presents a list of those strategies that have been demonstrated as evidence-based according to the National Professional Development Center on Autism Spectrum Disorders. Additionally, Appendix C details the type of skills best matched to the strategy.

There are a number of instructional strategies identified as effective for this population.

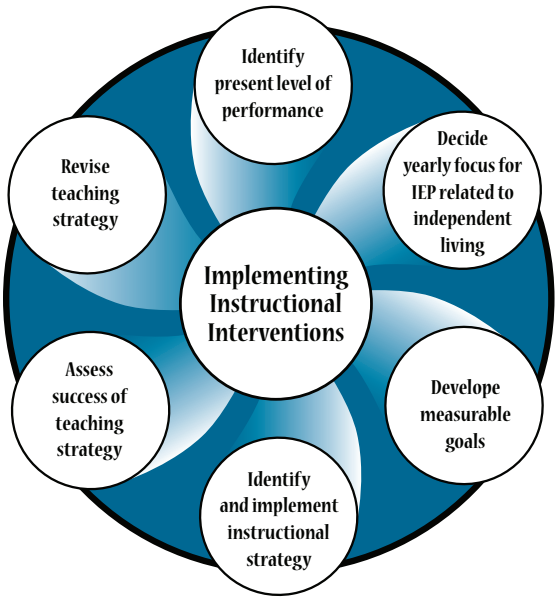
As instructional strategies are employed there are several important considerations. First, teachers can feel confident implementing any of the strategies above provided they are able to implement the strategy with fidelity. In other words, instructional strategies chosen for students with ASD should be implemented by knowledgeable and skilled individuals. Second, teachers must ensure they have used the strategy to teach an appropriate skill or skill set. Individual strategies may be effective only when used to teach identified skills and not when universally applied to any skill. Finally, it is important to verify the success of the strategy through data collection. Not all

It is important to verify the success of the strategy through data collection. Not all strategies will be effective with all students. Progress must be evaluated on an individual basis and changes made accordingly.

53 NRC (2001)
54 Iovannone, et al. (2003)
55 Myers (2007)

strategies will be effective with all students. Progress must be evaluated on an individual basis and changes made accordingly. In order to implement instructional strategies, educators should follow the steps in Figure 2 below:

Figure 2. Implementing Instructional Interventions



Ensuring Students' Ability to Access Education

Problem and interfering behaviors are among the most challenging issues faced by schools (and parents) in their efforts to educate students with ASD. Such behaviors reduce instructional time and efficacy, alienate others, and can result in more restrictive placements. Problem and interfering behavior is generally viewed as maladaptive, responsive, or communicative rather than malicious. As such, behavior must be evaluated in context for proper understanding or intervention.

Management of problem behavior can be complicated by communication barriers. A decrease in problem behaviors may require an alteration to the environment or instruction, instruction in alternate forms of communication, and an increase in self-determination opportunities.

Functional Behavioral Assessment

Assessing the function of problem behavior and using the assessment results to design a behavioral intervention plan is fundamental to effective management of problem or interfering behavior. In fact, interventions based on functional behavioral assessments usually result in significant reductions in problem behavior.[56] This is because most problem behaviors serve an adaptive function and are reinforced by their natural consequences.[57]

The appropriateness of curricular demands for a particular student's competency, also known as "environmental fit," is an important consideration when assessing problem behavior of students with ASD.[58] For some students with ASD, the function of problem behavior is to escape from or avoid undesirable situations.[59]

The following model for conducting a Functional Behavioral Assessment (FBA) and creating a Behavioral Intervention Plan (BIP) is drawn from the Virginia Department of Education's Functional Behavioral Assessment, Behavioral Intervention Plans, and Positive Intervention and Supports: An Essential Part of Effective Schoolwide Discipline in Virginia, which can be found at: *http://www.doe.virginia.gov/support/student_conduct/functional_behavioral_assessment.pdf*

STEPS to Conducting a Functional Behavioral Assessment

STEP 1. Verify the Seriousness of the Problem

Experience has shown that many classroom problems can be eliminated by consistently applying standard strategies of proven effectiveness. In an effort to address minor problems so they do not grow into larger ones, school personnel usually introduce one or more of these strategies before initiating a functional behavioral assessment. When

[56] *Blakely-Smith (2009)*
[57] *Johnson/Myers (2007)*
[58] *Blakeley-Smith (2009)*
[59] *Blakeley-Smith (2009)*

it is clear the behavior manifested by a student cannot be resolved through standard means, as well as in response to situations for which the law requires a functional behavioral assessment and a behavioral intervention plan, then school personnel should consider initiating a FBA.

Other factors to consider in identifying the seriousness of a behavior include:

- The degree of discrepancy between the student's behavior and acceptable behavior or that of his/her classmates.
- The frequency and/or duration of a behavior.
- The degree to which the behavior interferes with the education of the student or other students in the class.
- The safety of the student and other students and staff.
- Cultural differences expectations.

STEP 2.
Define the Problem Behavior

Before determining the techniques to be used to conduct a functional behavioral assessment, the teacher and the IEP team should define the problem behavior in observable and measurable terms. If descriptions of behaviors are vague, such as "Jack gets angry," multiple difficulties will arise. Primarily, it is essential that each observer and team member are able to agree on the occurrence of a behavior, in order to collect meaningful data or conduct useful observations. Vague or subjective definitions will lead to exceedingly variable and inaccurate results. Objective and measurable definitions, such as "Jack attempts to hit staff with his hand," will lead to more accurate data collection.

Furthermore, lack of an observable and measurable definition will make it impossible for the team to reliably identify the function the behavior serves, decide on an appropriate intervention, or devise an appropriate way to evaluate its success. Later, after more information has been collected, the team can refine the definition of the behavior by including multiple examples and non-examples of the behavior.

STEP 3.
Collect Information on the Reasons Behind (Potential Function(s) of) the Problem Behavior and Maintaining Variables

Once the IEP team has defined the problem behavior, team members can begin to observe the student and the school environment to determine the exact nature of the behavior. The team generally collects information on the times, conditions, and individuals present when problem behavior is most versus least likely to occur; the events or conditions that typically occur before (antecedents) and after (consequences) the behavior; and other relevant information regarding the problem behavior.

The team might begin the assessment process by conducting a series of classroom observations. An examination of these data may suggest times and settings in which to conduct further observations to document the variables that are most predictive of inappropriate student behavior. It also may be useful to observe situations in which the student performs successfully to compare conditions that evoke appropriate versus inappropriate behavior. For example, Jalene may perform successfully in science class but routinely disrupt the history class by calling out and refusing to complete her work.

Depending on the behavior of concern, it is usually beneficial to conduct indirect assessments in addition to direct observations to assist in identifying the likely reasons behind the problem behavior. Indirect methods include a review of the student's cumulative records, such as health, medical, and educational records, as well as structured interviews with teachers, other school personnel (e.g., bus driver, cafeteria workers), or the student of concern. Gaining knowledge of the student's strengths and preferences is also useful.

Teachers know that events affecting a student outside the classroom may increase the likelihood of classroom problems. Both past and present events can increase the chance that the student will pose a challenge in the classroom. These "setting events" can range from a longstanding pattern of negative classroom interactions, to a fight with another child at the bus stop, to a chronic headache. For these

reasons, interviews conducted with the student and his or her parents or guardian can be an important source of information in understanding the function(s) of the problem behavior.

The collection of data must be individualized to fit the situation. Data must yield information needed to determine the precise function and maintain variables for this particular student and problem behavior. It is important to collect multiple types of data to gain a thorough understanding. It is also important to have more than one person involved in collecting data since multiple sources will be much more likely to produce an accurate picture. This is especially true if the problem behavior serves various functions under different circumstances.

STEP 4.
Analyze Information Collected on the Problem Behavior

Once the IEP team is satisfied that sufficient information has been collected, the next step is to determine what is known about the problem behavior and the context in which it occurs. Such an analysis helps the team to decide whether there are any specific patterns associated with the behavior. The team carefully reviews the information to look for any patterns of events that predict when and under what circumstances the behavior is most or least likely to occur, what is maintaining the behavior, and the likely function(s) of the behavior.

Upon review, the team may conclude that Charles disrupts class by yelling each time the teacher asks him to complete work that is too difficult. In this example, Charles's behavior typically leads to his removal from class and the difficult task. In collecting information on student behavior, teams understand that even an occasional event or unusual condition cannot be ruled out as a reason for the problem behavior.

STEP 5.
Develop a Hypothesis about the Function and Maintaining Variables of the Problem Behavior

Next, the IEP team formulates a hypothesis statement, or "best guess," regarding the likely function(s) of the problem behavior. The statement relates to what the student receives, avoids, or may be communicating with the problem behavior. The hypothesis can then be used to predict the social and/or academic environmental context under which the behavior is most likely to occur and the possible reason(s) why the student engages in the behavior. A hypothesis statement should contain three parts: the antecedent and/or setting event to problem behavior, a description of the behavior, and the hypothesized function of the behavior. For example: When Charles is told to transition from a desired activity like computer time to a less desired activity like class work at his desk, he is likely to scream, throw his work, and hit others in order to avoid his work.

STEP 6.
Verify the Hypothesis Regarding the Function and Maintaining Variables of the Problem Behavior

Before proceeding with an intervention, it is usually a good idea to take time to modify various classroom conditions in an attempt to verify the IEP team's hypothesis regarding the likely function(s) and maintaining variables of the behavior. For instance, the team may hypothesize that during transitions between activities, Maurice runs around the classroom in order to gain teacher attention and avoid changing activities. Thus, the teacher provides a visual schedule and more choices for Maurice to help him learn to transition appropriately rather than inappropriately and gain teacher attention for making successful transition between activities. If this strategy produces a positive change in Maurice's behavior, then the team can assume its hypothesis was correct and a behavioral intervention plan can be fully implemented; however, if Maurice's behavior is unchanged, then a new hypothesis needs to be formulated.

In some instances, it may not be necessary or appropriate to manipulate classroom conditions to observe their effects on student behavior. For example, with severe acting-out behavior, the team should immediately implement an intervention and evaluate its impact against any available assessment information. Based on that evaluation, the team should be ready to make any necessary adjustments in the plan.

Developing and Implementing a Behavior Intervention Plan

STEP 1.
Develop and Implement a Behavioral Intervention Plan

After collecting enough information to identify the function(s) and maintaining variables of the student behavior, the IEP team must develop or revise a behavioral intervention plan (BIP). The plan should include positive strategies, program modifications, and the supplementary aids and supports required to address the behavior, as well as any staff supports or training that may be needed. Although, it is always the hope that these proactive strategies alone will decrease the problem behavior significantly, it is also essential that it is clear to those involved how the behavior should be handled when it does occur to ensure consistent consequences. Many teams develop an intervention plan that includes one or more of the following strategies or procedures:

- ✶ Teach the student more acceptable behavior that serves the same function as the inappropriate behavior (e.g., ways to get peer attention through communication).
- ✶ Modify the classroom setting events (e.g., lessen task demands when headache is present or after week break from school).
- ✶ Modify the antecedent events (e.g., post schedule, warn of upcoming transition).
- ✶ Modify the consequent events for the problem behavior (e.g., ignore, redirect, provide reminder of rules).
- ✶ Modify the consequent events for positive or appropriate behavior (e.g., precise praise, verbal and nonverbal feedback).
- ✶ Modify aspects of the curriculum and/or instruction (e.g., provide multilevel instruction, shorten instructional session).
- ✶ Introduce a reinforcement-based intervention (e.g., student contract).

For the majority of problem situations, there is more than one solution that can result in a positive outcome. Generally, a behavioral intervention plan includes steps to accomplish the following:

- ✶ Manage any recurrent episodes of the problem behavior.
- ✶ Teach the student appropriate way to replace the problem behavior.
- ✶ Ensure frequent opportunities for the student to engage in and be reinforced for demonstrating acceptable behavior.

Most authorities agree that it is usually ineffective to use punishment as the only means of addressing student misconduct. With behavior intervention, the emphasis is on teaching students new skills with which to become more effective and efficient learners.

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The success of an intervention plan rests on the student's engaging in the appropriate behavior without continued external support. Accordingly, teams may need to incorporate strategies to promote the maintenance, durability, generality, and longevity of appropriate student behavior. One strategy is to structure positive peer interactions; another is to instruct the student to use self-talk, self-cueing, self-management or self-reinforcement.

In some cases, supplemental aids and supports may be necessary to help the student to maintain the appropriate behavior. For example, the student may need to work in a specially designed workstation in order to decrease distraction from everyday classroom noise and movement. Supports may also include curricular modifications to decrease a student's avoidance of academic situations or

instruction to increase the student's verbal skills and ability to respond appropriately to stressful situations.

STEP 2.
Evaluate Fidelity in Implementing the Plan
It is good practice for the IEP team to monitor the accuracy and consistency with which the intervention plan is implemented. To do so, the team might spell out the various components of the intervention plan, along with the individual(s) responsible for its implementation. Then, a checklist of steps or a script—a step-by-step description of the intervention and its application, can be developed for each person responsible for implementing the plan.

STEP 3.
Evaluate the Effectiveness of the Intervention Plan
A second evaluation procedure should be developed to evaluate changes in the behavior itself. Initial or baseline information should serve as a standard against which to judge any changes in behavior. Evaluating the effects of the intervention will yield data upon which the team can judge future changes in the intervention plan. Subsequent review of the data or student behavior is essential to determine the effects of the intervention across time.

STEP 4.
Modify the Intervention Plan
IDEA (2004) states that a behavioral intervention plan must be reviewed and revised any time the IEP team feels that an adjustment is necessary. The circumstances that may warrant such a review include the following:

- ✶ The student no longer exhibits problems in behavior, and the team terminates the plan.
- ✶ The situation has changed, and the plan no longer addresses the student's needs.
- ✶ The IEP team determines during a manifestation determination review that the behavior intervention strategies are inconsistent with the student's IEP or placement.
- ✶ The original plan is not producing positive changes in the student's behavior.

In the end, the process of functional behavioral assessment is not complete until we see meaningful changes in student behavior.

Program Evaluation

Monitoring Student Progress

One of the most important aspects of educational programming for students with ASD is ongoing monitoring of their progress toward target goals as outlined on their IEPs. It is only through close monitoring that a teacher can determine whether a skill has been mastered and a student is ready for the next level or whether a student is not progressing at an acceptable rate and a program change is warranted. Through careful scrutiny, a teacher can make determinations regarding implementation of all aspects of the IEP including frequency and duration of intervention.

Data Collection

Although there are a number of ways to monitor student progress toward goals (e.g., teacher made tests, anecdotal notes, etc.), the most accurate and sensitive method is systematic, ongoing data collection of direct observable skills and behaviors. Observation and systematic data collection allows teachers and other educational staff to objectively evaluate the effectiveness of instructional strategies on the acquisition of new skills and the reduction of behaviors that may be interfering with a student's learning. In other words, systematic data collection will provide the evidence that lets teachers know if their instructional strategies are working.

To begin the data collection process, educators need to determine the most appropriate measurement for accurately evaluating the change in the target skills and behaviors. Below are common types of data collection used in an educational setting:

- ✶ Occurrence (Whether the skill/behavior occurred)

- ✶ Frequency (How many times the skill/behavior occurred)
- ✶ Duration (Length of time the skill/behavior occurred)
- ✶ Latency (Length of time elapsed between instructional cue and performance of the skill/behavior)
- ✶ Prompt (Level of assistance required to perform the skill/behavior)

It is essential that the measurement system matches the type of behavior change expected. For example, when measuring a student's peer-related social initiations, frequency of initiations may be the most accurate measure. If the skill is to increase the amount of time a student spent interacting with a peer, duration would be the unit of measure. When measuring putting on a coat, the level of prompt needed may be the most appropriate. Depending on the targeted skill, permanent product measures, such as teacher made pretest and posttest or a written assignment, may also be used.

After the unit of measure is established, a method for collecting and recording data is determined. There is no one-way to collect data across all different skills and behavior. Therefore, educators need to select a data collection method or form that is most appropriate for helping to gather the information that reflects a change in the target behavior. The method should allow educators to maximize instructional time while gathering accurate and thorough information.

It is only through close monitoring that a teacher can determine whether a skill has been mastered and a student is ready for the next level or whether a student is not progressing at an acceptable rate and a program change is warranted.

Data Analysis

Once the data is collected, it needs to be summarized in a way that can assist the teacher in seeing learning trends. It is critical for data to be analyzed regularly to make programmatic decisions. Therefore, it is essential for data to be summarized in a clear and succinct manner to make this an easy and efficient process. Systematic evaluation of the data will help determine if the student's skills and behaviors are progressing in the desired direction and provide evidence on the effectiveness of the instructional strategies. If progress is not indicated as expected, the teacher will know that changes in the instructional strategies, supports, and/or IEP objectives need to occur.

To provide a clear, visual depiction of the student's performance, it is beneficial for data to be graphed. The graphs can be systematically evaluated using different data analysis techniques to determine if the student is making progress toward their goals and objectives. As the saying goes, a picture is worth a thousand words. Whether the student is working on increasing a skill or decreasing a problem behavior, graphs are "pictures" that help evaluate the effectiveness of instruction.

Professional Collaboration

Successfully educating students with ASD requires collaboration amongst a variety of professionals and stakeholders. Friend and Cook (2007) define interpersonal collaboration as "a style for direct interaction between at least two co-equal parties voluntarily engaged in shared decision making as they work toward a common goal." For example, a speech/language pathologist and special education teacher may work together towards improved communication skills for a student with ASD. Additionally, a variety of collaborative teams can support and further the education of students with ASD (Friend and Cook, 2007):

- ✶ **Multidisciplinary Teams** — comprised members who represent a number of perspectives and disciplines, but with less frequent meetings.

- **Interdisciplinary Teams** — comprised members who represent a number of perspectives and disciplines, but with more frequent meetings.

- **Transdisciplinary Teams** — professionals perform their related tasks interactively and, through role release, may share or blend their roles, and one or two team members may be responsible for delivering interventions.

- **Student-Centered Problem-Solving Teams** — building-level, problem-solving teams to assist teachers in accommodating students with behavioral or learning issues in their classrooms.

- **Teacher Assistance Teams** — Three elected teachers, a referring teacher and, when appropriate, parents and other specialists. A general education teacher defines the issue and the team develops alternative interventions and then chooses the preferred intervention.

Collaborative teams cannot make or alter decisions that must be made by the IEP team. For example, if a student with ASD is presenting with problem behavior that is disrupting the learning environment or his access to the general curriculum, it may be that the IEP team needs to conduct another FBA and revise the BIP.

Family Involvement

Family members can be the most stable, influential and valuable people in a student's environment.[60] Family members are often the first to recognize that a student may have an ASD. The pervasive nature of ASD and difficulties generalizing from school to home and community environments make parents essential partners in the education of students with ASD. While parents should not be expected to provide educational programming, regular communication regarding the student's educational programming and progress is essential. The degree of a family's collaborative involvement will vary from family to family, and it is important for educators to consider the range of obligations and demands faced by parents. Educators must also demonstrate an awareness and respect for the culture, language, values and parenting styles of the families of students with ASD.

Educators can support family involvement in many ways, such as:

- Inform parents about the range of educational and service options
- Inform parents about disabilities and education
- Communicate regularly regarding the student's progress
- Address educational concerns
- Ensure parents are supported as active participants in the development of their child's IEP
- Provide parents with opportunities to meet regularly with the education professionals serving their child

Professional Development

Advances in the understanding of ASD and educational interventions for this group are being made every day. Ongoing training for educators and stakeholders ensures all are well-equipped with a broad and current knowledgebase. In addition to these benefits, participation in professional development can provide a network of collegial support for educators and stakeholders.

Professional development takes many forms and is available at convenient times and locations. Training programs include both pre-service and in-service training. Training can take the form of conferences, presentations, online, webinar, college courses, and more. In order for training to be truly effective, technical assistance in the educational setting is essential. Adults benefit from the same teaching strategies as children. Providing hands-on assistance in the form of modeling and coaching can help an

[60] *Iovannone (2003) quoting Dunlap 1999*

In order for training to be truly effective, technical assistance in the educational setting is essential. Adults benefit from the same teaching strategies as children. Providing hands-on assistance in the form of modeling and coaching can help an educator to actually implement training content and to apply it effectively.

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Supplementing ongoing professional training with regular reading of peer-reviewed journals and scholarly books on topics pertinent to ASD will help educators and stakeholders have as current a knowledgebase as possible. New information is constantly available and best practice depends upon ongoing professional development.

Training Topics

Identifying who needs training and the specific training needs should occur prior to their involvement with students with ASD. Training should focus on at least the following topics:

- Characteristics of individuals with ASD
- Medical implications of conditions associated with ASD
- Assessment and diagnostic tools
- Using assessments for program development and evaluation
- Curriculum adaptation
- Instructional strategies
- Communication
- Assistive technologies
- Team collaboration
- Data collection
- Use of data for program modification
- Current legal issues
- Behavior management
- Functional behavioral assessment/ behavior intervention planning
- Transitions
- Social skills
- Promoting independence
- Motor skills

Creating Professional Development

Professional development for professionals who work with these students must be meaningful, practical and occur within the context of students with ASD and larger school reform efforts. Effective professional development should be based on the following standards, which are modeled after those suggested by Leko & Brownell (2009):

- Relevance – align professional development with teachers' goals and needs; local, state and national standards and accountability mechanisms; and schoolwide curricula.

- Content-focused – help participants understand how interventions and the general education curricula or IEP goals fit together.

- Incorporate real situations – use actual physical environments and real situations, including student assessment data and lesson plans.

- Discussion – have professionals to have meaningful discussion about what is happening in their classes and any concerns they might have.

- Bring in experts – bring in experts from the divisions, local universities or elsewhere to provide instruction on specific topics.

- Incorporate technology - ease communication and networking by incorporating technology.

- Collaboration – have teachers work together to problem-solve concerns. Encourage exploration into how collaboration can be expanded and improved to impact student outcome.

- ✶ Coherence – ensure that professional development opportunities are part of a coherent program in which one activity builds upon another and is followed-up by further activities.

- ✶ Effective strategies – highlight the most effective research-based interventions and review new research regarding existing interventions.

- ✶ Demonstrate – demonstrate effective implementation of interventions. Allow participants to observe experts implementing interventions and to be observed practicing appropriate skills.

- ✶ Decision-making – provide instructional frameworks that can guide teachers' decision- making within specific content areas.

- ✶ Plan classroom implementation – link ideas learned in professional development within the educational environments of the participants.

- ✶ Communities of Practice – use professional development to establish communities of practice in which professionals engage in ongoing problem solving, which may occur online.

- ✶ Follow-up – follow-up with professionals and provide feedback on their instruction.

Virginia Skill Competencies

The Virginia Autism Council published the *Skill Competencies for Professionals and Paraprofessionals in Virginia Supporting Individuals with Autism across the Lifespan.* This document provides a comprehensive list of knowledge and skill competencies required of any professional or paraprofessional who serves a student with ASD. These competencies can guide professional development planning. The document is available at *www.autismtrainingva.org* and is reproduced in Appendix E.

Guardianship

In Virginia, at age 18 all rights – including education and special education related rights transfer from the parent/guardian to the individual. This is true for students with ASDs regardless of severity or ability. The presumption of the law is that at age 18 a person is able to manage the business and affairs of their life, and gives them the right to contract, consent, sue, bank and undertake all other legal activities on their own behalf.

For some students with ASD, this level of independence is not safely realized and he or she may require a legal guardian and/or conservator to tend to their affairs. This may be surprising to unprepared parents.

Parents are encouraged to consult an attorney regarding the court's procedures for declaring an adult student incapacitated or appointing a guardian and/or conservators. Information is available at the Virginia Department of Education regarding options available to parents and adult students with disabilities regarding the student's option of designating a power of attorney or when the student is not competent to participate in special education matters.
(See Virginia Regulations, at 8VAC20-81-180; Web site: *http://www.doe.virginia.gov/special_ed/regulations/state/regs_speced_disability_va.pdf*.)

Determination that an adult is incapacitated and appointment of guardians and conservators must take place through the judicial system by court order. The process can take several months to complete, but may be begun in advance of the student's 18th birthday. Additional information can be found on the Virginia Department of Education's Web site under the title, Transfer of Rights For Students with Disabilities Upon Reaching The Age of Majority In Virginia (August, 2004).

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APPENDIX A:
Data Collection

Data Sheet
Correct / Incorrect Behavior

Target Behavior: Jake will state his full address.

Date	Elements: ✓ =correct ✗ = incorrect n/a = not attempted							Notes
	1	2	3	4	Maple Street	Anytown	VA	
	9/12	✗	n/a	n/a	n/a	n/a	n/a	n/a Frustrated
9/12	✓	n/a	n/a	n/a	n/a	n/a	n/a	Uncertain
9/15	✓	n/a	n/a	n/a	n/a	n/a	n/a	Confident
9/15	✓	✗	n/a	n/a	n/a	n/a	n/a	Frustrated
9/28	✓	✓	n/a	n/a	n/a	n/a	n/a	Confident

Data Sheet
Occurrence of Behavior

Target Behavior: Callie will state one thing she did at school when asked by adult.

Date	Time 1	Time 2
3/12/09	"Ate lunch"	"Played with Megan"
3/13/09	"Ate lunch"	"Ate lunch"
3/14/09	"Played at recess"	No response
3/15/09	No response	"Went to music class"

Data Sheet
Frequency of Behavior

Child's Name: Jamal Robinson

Target Behavior: Jamal will use a spoon to feed himself pudding, yogurt, and other solid foods for a minimum of 10 bites.

Date	Time/Activity 1: Breakfast	Time/Activity 2: Lunch
2/1/09	III	IIII
2/4/09	II	IIII
2/8/09	IIII	~~IIII~~

APPENDIX B:
Some Considerations When Developing Effective IEPs

Individualized Education Programs are developed by a team and must be designed to provide a student with ASD a free appropriate public education in the least restrictive environment.

IEP forms can vary between school divisions. Whatever form the IEP takes, some elements are required and some are recommended for consideration. Although it is permissible to create a draft IEP in advance of the meeting, the final IEP must be the product of the full IEP Team.

Below are some items members of the IEP team may wish to consider when developing the IEP. Be sure to consult the IDEA and federal and state regulations for a more complete understanding of IEP requirements.

IEP Team Members

Some members of an IEP team are required by law, while others are permissive. Even when a particular title or competence is required, the particular individual chosen may vary.

Required Members (Some roles may be filled by the same individual):

- Parent(s)
- Student (when appropriate)
- Special Education Teacher of the child
- General Education Teacher of the child (if applicable)
- Representative of the school system who is knowledgeable about the general curriculum and the availability of resources and able to supervise specially designed instruction
- An individual who can interpret the instructional implication of evaluation results.

Optional Members to Consider:

- Family members
- Physicians
- Counselors
- Social Workers
- Other professionals

Present Level of Performance/Academic Achievement

The present level of performance or academic achievement should provide a clear picture of what the students can do currently (as it relates to his or her education).

Required Components:

- Academic achievement
- Functional performance
- How the child's disability affects involvement and progress in the general education curriculum
- If included, test scores must be self-explanatory or accompanied by an explanation

Additional Considerations:

- Preferences
- Motivators
- Student's short- and long-term ambitions
- Positive phrasing
- Strengths
- Needs
- Parent concerns
- Student concerns

Annual Goals/Benchmarks/Short-Term Objectives

These goals set forth what the IEP team believes the student should and can do within one year. Goals should represent both academic and functional skills.

Required Components:

- Goals should be designed to meet needs that result from the child's disability and that interfere with involvement in and progress in the general education curriculum
- Goals should be designed to meet other educational needs that are a result of the child's disability
- Benchmarks/short-term objectives (for students who take alternative assessments)

Additional Considerations:

- ✶ Are the goals meaningful?
- ✶ Are the goals clear on exactly what the student will do, how it will be done, where it will be done and when it will be done?
- ✶ What is the appropriate level of mastery?
- ✶ What is the appropriate number and sequence of trials for goal attainment?
- ✶ What is/are appropriate measurements of goal progress?
- ✶ Is the goal meaningful?
- ✶ How will the parent be informed of progress?

Related Services and Supplementary Services

Required When:

- ✶ Necessary to advance appropriate towards attaining annual goals
- ✶ Necessary to be involved and progress in the general curriculum
- ✶ Necessary to participate in extracurricular and other nonacademic activities
- ✶ Necessary to allow for participation with other children with disabilities and children without disabilities.

Additional Considerations:

- ✶ When are they necessary?
- ✶ Where are they necessary?
- ✶ How will they be provided (e.g., – teacher determination, student request)
- ✶ Start/finish dates?
- ✶ Length of time services will be provided?

Placement

A major goal of IDEA is meaningful, appropriate integration of students with disabilities into society, including the general education environment. Students with disabilities must be educated in the least restrictive environment possible given reasonably available supports and services. Each more restrictive placement must be justified by the IEP team.

Required Considerations:

- ✶ The goals and, if any, short-term objectives of the student
- ✶ Supplemental aids and services
- ✶ Potential harmful effects on the student or on the quality of services that he or she needs
- ✶ Continuum of placements

Transition

At age 14, the IEP team must begin to consider educationally-relevant issues related to becoming an adult.

Required Considerations:

- ✶ IEP goals – including postsecondary goals – necessary for transition
- ✶ Transition services

Additional Considerations:

- ✶ Ability of family/guardians to continue support

Appendix C: Instructional Strategies

The 24 Evidenced-Based Instructional Strategies for Children and Youth with ASD (Source: The National Professional Development Center on Autism Spectrum Disorders, 2009).

Evidence-Based Strategy	*Brief Description of Strategy*	*Skills Best Taught or Intervention Addressed by Strategy*
Antecedent-Based Interventions	*Modifying the environment, antecedents, or setting events to prevent the need for challenging behavior*	*In response to problem behavior and after a functional behavior assessment has been completed*
Computer Aided Instruction	*Use of a computer to teach communication or academic skills. There are some programs currently being used to teach social skills as well.*	*Communication Skills; Academic Skills; Limited Evidence for Social Skills*
Differential Reinforcement integrated into Self Management Plans	*Providing positive reinforcement for the absence or lower rate of a problem behavior*	*In response to problem behavior*
Discrete Trial Training	*One staff to one student instructional approach that relies on repetitive practice of small skills or parts of skills. Also relies on the careful presentation of antecedents and manipulation of consequences to strengthen responses*	*Small discrete receptive skills that require a verbal, signed or behavioral response. Best used with young children between the ages of 2 to 9 years old.*
Extinction	*Behavioral procedure designed to weaken behavior by removing a previously identified reinforcement for that behavior. When implemented properly, the behavior frequently increases before decreasing due to pattern call 'extinction burst.' Frequently implemented in conjunction with differential reinforcement of another behavior (DRO)*	*In response to a problem behavior where the reinforcement is known. Care should be taken to avoid use with dangerous problem behaviors.*
Functional Behavior Assessment	*Systematic assessment of behavior to discover the underlying reinforcement for and the function of problem behavior. Strategies include: indirect assessment (interviewing those who have personally observed the behavior, reviewing past records and history); direct assessment (observation of the behavior using an Antecedent, Behavior, Consequence analysis; and hypothesis development) (analyzing existing data and proposing hypothesis regarding the function of the behavior).*	*To assess the function of problem behavior*
Functional Communication Training	*Replacing a problem behavior with a communication behavior*	*In response to problem behavior after a functional behavior assessment has been completed*
Naturalistic Intervention	*Providing cues, prompts, and instruction in natural environments to elicit and reinforce communication and social behaviors*	*Communication skills and behaviors Social skills and behaviors*
Parent-Implemented Interventions	*Parents receive direct training and implement individualized interventions for their children with ASD in their home or community.*	*Used with a variety of skills, but evidence is limited to children with ASD between 2 and 9 years old.*
Peer Mediated Instruction	*Teaching peers without disabilities to interact with and cue positive social behavior*	*Social interaction and social networking*
Picture Exchange Communication Systems (PECS)	*Learners with ASD are taught to use a picture card to communicate basic wants and needs to others in their environment. This method relies on teaching individuals to make an exchange with the picture card to the 'listener.'*	*Social Communication, especially requesting behaviors.*

Evidence-Based Strategy	*Brief Description of Strategy*	*Skills Best Taught or Intervention Addressed by Strategy*
Pivotal Response Training	*Applying the principles of applied behavior analysis to natural environments to teach pivotal behaviors including motivation, responding to multiple cues, social interaction, social communication, self management, and self initiation*	*Social communication and interaction behaviors*
Prompting Procedures	*Verbal, gestural, physical, model, and visual prompts and prompting systems including least to most prompts, simultaneous prompts, and graduated guidance*	*A wide variety of skills*
Reinforcement	*Strengthening any behavior by providing a consequence that increases the likelihood that the behavior will occur again. Includes positive reinforcement, tokens, point systems, graduated reinforcement systems*	*A wide variety of behaviors*
Response interruption/ Redirection	*Providing another activity that appears to serve the same function as a problem behavior, e.g.,: Offering popcorn in place of eating a pencil (pica)*	*Problem behaviors that appear to serve a self stimulatory function*
Self Management	*A wide array of interventions to increase appropriate behaviors and decrease problem behaviors for learners across the spectrum including social conversation, sharing, giving compliments, anger management, habit reversal, etc.*	*Behaviors that are able to be defined and practiced by the person with ASD*
Social Narratives	*A written intervention where social situations and responses are described in detail. Social stories (developed by Carol Gray) are included in this category*	*Social Skills*
Social Skills Groups	*Up to 8 individuals with ASD practice social skills and social interactions in a group with an adult facilitator*	*Social Skills*
Speech Generating Devices (Voice Output Communication Assistance, VOCA)	*An electronic device that has small to large screens where a picture indicates what will be said when pressed.*	*Communication*
Stimulus Control	*Using reinforcement to teach a person to perform a certain behavior under very specific stimuli.*	*Behavior and Academic Skills*
Structured Work Systems	*Designing the environment so that work is visually displayed and expectations for completion are visually presented as well.*	*Transitions between activities and Academic Skills*
Task Analysis	*Teaching skills with many steps a few steps at a time with reinforcement following each step.*	*A wide variety of skills*
Time Delay	*Used with structured prompting procedures, the instructor delays the implementation of a prompt and reinforces demonstration of a behavior prior to prompting*	*In response to behaviors that are displayed only when a prompt is presented.*
Video Modeling	*Using video to show the correct way of responding to a variety of social situations.*	*Academic skills, communication, and social skills*
Visual Supports	*Providing an array of information in visual formats including the daily schedule and steps to complete a task, social behaviors, and communication supports how to transition between activities.*	*A wide variety of skills*

Appendix D: Diagnostic Tools

Autism Diagnostic Interview-Revised (ADI-R; Lord, Rutter, & Le Couteur, 1994: Rutter, LeCouteur, & Lord, 2003)

Autism Diagnostic Observation Schedule - Generic (ADOS-G; Lord, et al., 2000; Lod, Rutter, DiLavore, & Risi, 1989)

Autism Screening Instrument for Educational Planning- Second Edition (ASIEP-2; Krug, Arick, & Almond, 1993)

Childhood Autism Rating Scale-Second Edition (CARS-2; Schopler, et al., 2010)

Gilliam Autism Rating Scale-Second Edition (GARS-2; Gilliam, 2006)

Gilliam Asperger's Disorder Scale (GADS; Gilliam, 1995)

Asperger Syndrome Diagnostic Scale (ASDS; Myles, Brock, & Simpson, 2001)

Vineland Adaptive Behavior Scale - Second Edition (Vineland II; Sparrow, Cicchetti, & Balla, 2005)

Appendix E: Virginia Skill Competencies

The Virginia Autism Council's 2008 Skill Competencies for Paraprofessionals an Professionals Supporting Individuals with Autism Across the Lifespan in Virginia, which is available in full at autismtrainingva.org and reproduced in part below

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
1. General Autism Competencies Statements				
Understands the characteristics and diagnosis of autism as defined by the most recent version of the Diagnostic and Statistical Manual and definition/description of the Virginia Department of Education.	✓	✓	✓	✓
Lists and explains the defining characteristics of autism (Communication, patterns of stereotypical behavior, socialization and social skill development) and the impact on the individual.	✓	✓	✓	✓
Lists and explains the associated characteristics commonly present in autism (ex: difficulties in sensory processing, motor skills, theory of mind, and imitation) and the impact on the individual.	✓	✓	✓	✓
Lists and explains the associated cognitive characteristics and learning styles commonly present in autism (ex: difficulties in executing functioning, attending, planning, abstract thinking, problem solving) and the impact on the individual.	✓	✓	✓	✓
Describes typical child development (ex: communication, sensory motor, cognitive, behavior, and social skill development).	✓	✓	✓	✓
Describes the continuum of Autism Spectrum Disorders and the basic differences between each including Autism, Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS), Asperger Disorder, Retts Disorder, and Childhood Disintegrative Disorder (CDD).	✓	✓	✓	✓
Describes the range of possible behaviors across the lifespan.	✓	✓	✓	✓
Describes potential courses of development and outcomes in individuals with autism from infancy to adulthood.		✓	✓	✓
Describes the current understanding of etiology and prevalence of autism.		✓	✓	✓
Understands the impact of common medical issues (ex: seizure disorders, chronic otitis media, chronic constipation or diarrhea) and treatments (ex. psychotropic medications and possible side effects, use of special diets) for persons with autism.	✓	✓	✓	✓
Assesses and communicates critical health related information to team members, especially collaborating with parents and medical personnel.		✓	✓	✓
Identifies health-related resources available to persons with autism.		✓	✓	✓
Documents medications that individuals are taking and the side effects they might experience.		✓	✓	✓
Develops and teaches the use of communication tools to assist the person in self-reporting health related concerns.		✓	✓	✓
Differentiates between self-inflicted injuries and potential abuse/ neglect related injuries.	✓	✓	✓	✓
Suggests and requests adaptive equipment and assistive technology when appropriate.	✓	✓	✓	✓
Understands the implications of 'dual' diagnoses (autism and any other diagnosis from the latest version of the Diagnostic and Statistical Manual of Mental Disorders) and co-morbidity.	✓	✓	✓	✓
Lists behaviors that could indicate the presence of an additional mental health or disability diagnosis.		✓	✓	✓
Discusses concerns and shares observations regarding possible additional diagnoses with team, which includes parents, when dual diagnosis is suspected.	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Implements behavioral and mental health recommendations given to the team by specialists such as psychiatrists or psychologists.	✓	✓	✓	✓
Shares reports of behavioral and symptomatic changes to medical professionals who are supervising care for persons with autism and co-morbid disorder(s).		✓	✓	✓
2. Environmental Structure and Visual Supports Competencies Statements				
Understands the importance of the environment and provides a setting that is safe, structured, and promotes independence.	✓	✓	✓	✓
Provides safe environments that are free of hazards.	✓	✓	✓	✓
Provides a positive climate that promotes respect for the individual.	✓	✓	✓	✓
Structures the physical environment and materials so the individual can complete activities and routines independently.		✓	✓	✓
Provides environments that are organized visually (ex: color coding, labeling, pictures) to assist the individual in understanding expectations.		✓	✓	✓
Provides a distinct space for the individual to engage in a quiet, calming, or sensory based activities.		✓	✓	✓
Understands and implements a variety of visual supports and strategies to promote comprehension and independence.	✓	✓	✓	✓
Designs and implements meaningful visual supports and strategies that cross all life settings and are based on individual assessment.	✓	✓	✓	✓
Implements a variety of visual supports and strategies to communicate information and expectations and increase independence (ex: break cards, rule cards, narratives, and scripts).	✓	✓	✓	✓
Implements a daily schedule of activities that is individualized by length (ex: full day, part day) and type (ex: objects, photos, icons, words).	✓	✓	✓	✓
Implements mini-schedules to help the person participate in the environment and complete activities.	✓	✓	✓	✓
Uses visual supports and strategies to help the individual prepare for and complete transitions.	✓	✓	✓	✓
Teaches paraprofessionals, professionals, and families to implement visual supports and strategies.		✓	✓	✓
Uses evidence based practices (ex: modeling, prompting, shaping, and cueing) to teach the individual how to use the visual supports.	✓	✓	✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies.	✓	✓	✓	✓
Observes behaviors using objective measures and criteria, and records data.	✓	✓	✓	✓
In consultation with the team, uses data and ongoing assessments to modify strategies as needed to promote communication skills in various settings.		✓	✓	✓
3. Comprehensive Instructional Programming Competency statements				
Understands how to assess an individual's strengths and weaknesses and determine appropriate goals.		✓	✓	✓
Identifies and uses appropriate formal and informal assessment tools to evaluate the individual's strengths, needs, interests, and learning style.		✓	✓	✓
Solicits information from all members of the individual's team.		✓	✓	✓
Integrates evaluation results from all areas to determine goal and program recommendations.		✓	✓	✓
Shares evaluation results with the individual, family, professionals, and paraprofessionals.		✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Develops goals and objectives that are: · *Based on the individual's present level of performance* · *Observable and measurable* · *Age appropriate* · *Reflective of the desires of the individual and family*		✓	✓	✓
Develops goals that address core deficit areas related to autism (ex: social skills communication, attention, imitation, play/leisure, sensory-motor, and self-regulation).		✓	✓	✓
Develops goals that lead to the increase of positive behaviors and the reduction of problem behavior.		✓	✓	✓
Develops goals that lead to immediate and long term independence.		✓	✓	✓
Develops goals designed to target generalization and maintenance of skills across programs and community and school settings and also in the home.		✓	✓	✓
Considers and plans for transition needs of individuals (ex: early intervention to preschool, preschool to elementary school, elementary to middle school, middle to high school, high school to post secondary activities).		✓	✓	✓
Describes the need for early intervention and the provision of intensive and explicit instruction.		✓	✓	✓
Understands and implements intervention strategies and supports to address the individual's goals.	✓	✓	✓	✓
Selects and designs intervention strategies based on the abilities, learning style, and interests of the individual.		✓	✓	✓
Provides intervention through a full range of formats (ex: one-to-one, small group, school/community interactions, and peer-mediated interactions).	✓	✓	✓	✓
Implements a wide variety of strategies and supports to effectively address the many needs of the individual.	✓	✓	✓	✓
Implements strategies and supports that are evidence-based or promising practices.	✓	✓	✓	✓
Uses strategies and supports that: · *Meet individuals' academic and adaptive needs in the core curriculum* · *Promote the development of life skills across all domains* · *Promote communication and social interaction* · *Facilitate the development of healthy relationships* · *Encourage generalization and maintenance of skills across programs and settings*	✓	✓	✓	✓
Implements prompting strategies and hierarchies that promote high rates of successful performance.	✓	✓	✓	✓
Provides appropriate reinforcement contingent on behavior and emphasizes the use of naturally occurring reinforcement.	✓	✓	✓	✓
Implements explicit instructional methods that: · *Are clear and concise* · *Break skills into small teachable parts* · *Focus on systematic presentation of new skills*	✓	✓	✓	✓
Implements instruction that promotes active engagement and maximizes opportunities for learning.	✓	✓	✓	✓
Implements strategies and supports across all settings and with fidelity.	✓	✓	✓	✓
Modifies and/or accommodates task requirements to address individual's strengths and needs.	✓	✓	✓	✓
Plans, communicates, and instructs family and professionals on strategies needed to access home, educational, work, and community environments.		✓	✓	✓
Implements adaptive equipment and assistive technology options needed (ex: picture symbols, computer, pencil grip, electronic devices).	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Teaches paraprofessionals, professionals, and families to implement appropriate components of the intervention program.		✓	✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies and instruction.	✓	✓	✓	✓
Assesses progress toward goals on a consistent and regular basis (ex: weekly) using objective measures and criteria.	✓	✓	✓	✓
Analyzes and reviews data with the educational team.		✓	✓	✓
In consultation with the team, uses data and ongoing assessments to modify program content, presentation, and interventions.		✓	✓	✓
Understands the need and benefit of a team to develop programs.	✓	✓	✓	✓
Shares useful and pertinent information with family regularly and provides opportunities for families to respond.		✓	✓	✓
Respects the needs, desires, and interests of the individual and families and incorporates into goals and intervention.	✓	✓	✓	✓
Includes the individual as an active participant and contributor to program planning.		✓	✓	✓
Collaborates with the team and has regularly scheduled meetings to address needs and problem solve using data as appropriate.	✓	✓	✓	✓
Implements and follows-up on team decisions and communicates results immediately.	✓	✓	✓	✓
Provides appropriate support and training to paraprofessionals or direct service staff.		✓	✓	✓
Collaborates with the team to effectively plan for transition needs of individuals (ex: early intervention to preschool, preschool to elementary school, elementary to middle school, middle to high school, high school to post secondary activities).	✓	✓	✓	✓
4. Communication Competencies Statements*				
Understands components of communication and its impact on the day-to-day experience of an individual with autism and how to assess skills for intervention planning		✓	✓	✓
Uses informal and formal tools to assess and analyze both receptive and expressive communication (ex: verbal, nonverbal, content, speech, semantics, and pragmatics).			✓	✓
Determines the functions (ex: request, comment, question, negate) and frequency of communication across all life environments.		✓	✓	✓
Determines the form of communication (ex: verbal, gestures, visuals) and considers augmentative communication options that are based on individual need and strengths.		✓	✓	✓
Solicits information from all members of the individual's collaborative program development team (anyone who supports, works with, or provides consultation).		✓	✓	✓
Understands a variety of strategies to increase an individual's communication abilities.	✓	✓	✓	✓
Designs and implements a meaningful communication program that crosses all life settings and is based on individual assessment.		✓	✓	✓
Implements programs throughout all daily activities maximizing communication opportunities.	✓	✓	✓	✓
Implements effective strategies and supports to teach communication (ex: modeling, prompting, shaping, NET and narratives).	✓	✓	✓	✓
Implements environmental arrangement, routines, and motivational activities to teach communication.	✓	✓	✓	✓
Supports vocabulary development within a contextual framework.	✓	✓	✓	✓
Implements pragmatic skill strategies using the individual's learning style.	✓	✓	✓	✓
Provides opportunities for and offers choices across the day.	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Provides and is able to instruct others on the team how to provide adequate processing ("wait") time when communicating.	✓	✓	✓	✓
Supports development of receptive communication within a contextual framework.	✓	✓	✓	✓
Based on the function and frequency of communication, teaches individuals how to communicate for a variety of reasons, to a variety of people, and in a variety of settings.	✓	✓	✓	✓
Teaches paraprofessionals, professionals, and families to implement the communication program.		✓	✓	✓
Implements appropriate augmentative communication interventions such as object or picture exchange systems, voice output communication devices, gesture, signs, text, among others to promote or enhance communication.	✓	✓	✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies.		✓	✓	✓
Observes communication behaviors using objective measures and criteria, and records data.	✓	✓	✓	✓
In consultation with the team, uses data and ongoing assessments to modify strategies as needed to promote communication skills in various settings.		✓	✓	✓
Assesses and revises communication program to match factors such as contextual fit, values of team, affordability, and portability.		✓	✓	✓
5. Social Skill Competencies Statements				
Understands social skill development and the unique social skill deficits and challenges associated with autism and how to assess skills for intervention planning.		✓	✓	✓
Assesses social skill strengths and needs across environments on an ongoing basis.		✓	✓	✓
Assesses skills related to understanding and regulating emotions (ex: identify emotions in self and others, self-management).		✓	✓	✓
Assesses skills related to social interactions and reciprocation (ex: joint attention, sharing, turn taking).		✓	✓	✓
Assesses play and leisure skills.				
Solicits information from all members of the individual's team.		✓	✓	✓
Understands appropriate strategies to increase an individual's social skills.	✓	✓	✓	✓
In collaboration with the individual with autism, uses circles of support or other techniques to identify their personal relationships (ex: family, friendship, acquaintance, romantic, and bullying).		✓	✓	✓
Develops social skills goals and objectives that are: appropriate, observable, measurable, and functional.		✓	✓	✓
Plans for generalization and maintenance of social skills in a variety of settings with a variety of people including other professionals, friends, and family members.		✓	✓	✓
Teaches positive social skills in natural environments, general education and community settings.	✓	✓	✓	✓
Uses specialized social skills strategies (ex: anger and stress management techniques, social narratives, mentoring, shaping, natural environment teaching, video-modeling, integrated play groups, etc.) to teach social skills, and to foster social interest and interaction.	✓	✓	✓	✓
Teaches individuals appropriate behavior for different social contexts and relationships across settings (ex: when interacting with strangers and intimate significant others).	✓	✓	✓	✓
Implements age appropriate social skills for play, recreation, and community activities.	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Teaches individuals how to interact and reciprocate for a variety of reasons, with a variety of people, and in a variety of settings.	✓	✓	✓	✓
Supports emotional understanding and development in a contextual framework.	✓	✓	✓	✓
Educates and trains peers to interact appropriately and effectively with individuals with autism.	✓	✓	✓	✓
Provides instruction, support, and guidance to the individual in identifying and dealing with manipulative, coercive, and/or abusive relationships.	✓	✓	✓	✓
Teaches paraprofessionals, professionals and family to implement specialized social skill strategies in a variety of settings.		✓	✓	✓
In collaboration with the family, teaches self-advocacy and awareness of autism.		✓	✓	✓
Educates paraprofessionals, professionals and family on the concepts of social integration and the characteristics of autism.			✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies.	✓	✓	✓	✓
Observes social behaviors using objective measures and criteria, and records data.	✓	✓	✓	✓
In consultation with the team, uses data and ongoing assessments to modify strategies as needed to promote positive social skills.		✓	✓	✓
6. Behavior Competencies Statements				
Understands factors that influence behavior and the components of behavior analysis (antecedents, behavior, and consequences) and how to provide positive behavior intervention.	✓	✓	✓	✓
Identifies and operationalizes target behaviors for assessment and intervention.		✓	✓	✓
Assists team members, including family, in prioritizing areas of concern.	✓	✓	✓	✓
Observes and documents behaviors using objective measures and criteria.	✓	✓	✓	✓
Completes functional behavior assessment to determine function of behavior and maintaining antecedents and consequences. FBA should include: · *Indirect (structured interviews, checklists, rating scales) and direct (structured ABC data collection) measures of data collection* · *Analysis of collected data* · *Development and testing of hypothesis*		✓	✓	✓
Identifies individualized reinforcement preferences using indirect and direct measures on an ongoing basis.	✓	✓	✓	✓
Develops and implements multi-component intervention plans based on the results of the FBA that emphasize prevention and are socially valid. Plans should include: · *Implementation of setting event and antecedent interventions (ex: proactive changes to prevent the behavior from occurring)* · *Teaching of alternative replacement, coping, and general skills* · *Implementation of positive consequences to increase the use of the new positive behaviors* · *Implementation of schedules of reinforcement and differential reinforcement to increase use of positive behaviors* · *Description of thinning of a reinforcement schedule as appropriate* · *Description of strategies for teaching and promoting desired behaviors* · *Implementation of reactive and crisis management strategies to support the individual if and when the problem behavior occurs*		✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Implements all components of the behavior intervention plan with consistency in a variety of complex environments under natural circumstances.	✓	✓	✓	✓
Teaches paraprofessionals, professionals and family to implement the behavior intervention plan in a variety of settings.			✓	✓
Educates paraprofessionals, professionals and family on the concepts of factors that influence behavior and the components of behavior analysis.			✓	✓
Understands how to evaluate the effectiveness of a behavior plan reliably and effectively.	✓	✓	✓	✓
Collects data to evaluate the plan's effectiveness in: · *Decreasing the problem behavior* · *Increasing the alternative and positive behaviors* · *Increasing quality of life outcomes* · *Generalizing skills to new environments*	✓	✓	✓	✓
Evaluates data and reports on the plan's effectiveness and revise as needed in consultation with the team.		✓	✓	✓
Develops a plan to generalize behavior to other persons and settings.		✓	✓	✓
7. Sensory Motor Development Competencies*				
Understands the sensory systems, sensory processing, and sensory motor development.	✓	✓	✓	✓
Describes the seven senses (visual, auditory, oral, olfactory, tactile, proprioceptive, and vestibular) and the varying patterns of hypersensitivity and hyposensitivity to sensory input.		✓	✓	✓
Describes the relationship between sensory motor systems and behavior (ex: demonstrating stereotypical behaviors such as rocking or hand flapping, or triggering fight, flight, or freeze responses).			✓	✓
Describes the relationship between sensory processing and functional performance in activities of daily living (ex: work, academic, and play/leisure activities).			✓	✓
Describes the relationship between sensory processing and motor planning and coordination.		✓	✓	✓
Understands the implications or influences of sensory processing when developing a comprehensive plan.		✓	✓	✓
Identifies behaviors that might indicate the need for a sensory motor assessment.		✓	✓	✓
Observes and assesses sensory motor needs across environments.				✓
Solicits information from all members of the individual's collaborative program development team (anyone who supports, works with, or provides consultation).				✓
Develops a sensory motor intervention plan for all life settings that addresses difficulty with sensory processing and functional performance and is focused on proactive strategies.				✓
Teaches paraprofessionals, professionals, and family how to implement the sensory motor intervention plan.				✓
Teaches individuals who need sensory supports to self-monitor/self-regulate sensory motor needs and request to have their sensory needs met.		✓	✓	✓
Implements sensory motor intervention plan across all environments with fidelity.	✓	✓	✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies.	✓	✓	✓	✓
Observes behaviors and collects data using objective measures to evaluate the sensory motor intervention plan.	✓	✓	✓	✓
Communicates findings regarding the effectiveness of the sensory motor intervention plan and collaborates with all team members.	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
In consultation with the team, uses data and ongoing assessments to modify strategies as needed to address sensory motor needs.	✓	✓	✓	✓
8. Independence and Aptitude Competencies Statements				
Understands skills needed for short term and long term independence and how to assess skills for intervention planning.		✓	✓	✓
Uses informal and formal tools to assess and analyze functional and life skills related to caring for self, caring for home, participating in the community, and employment.		✓	✓	✓
Uses informal and formal tools to assess and analyze academic skills (ex: literacy, math, science, and social studies).		✓	✓	✓
Uses informal and formal tools to assess and analyze cognitive skills and learning profiles (ex: attention, processing, organization, problem solving).		✓	✓	✓
Solicits information from all members of the individual's team.		✓	✓	✓
Determines generalization of skills across environments and ability to use functionally.		✓	✓	✓
Understands a variety of strategies to increase an individual's short term and long term independence in functional and life skills.	✓	✓	✓	✓
Develops goals that maximize personal independence, meaningful participation in community environments, positive relationships with others, and successful employment.		✓	✓	✓
Develops an intervention plan for all settings that targets functional and life skills related to caring for self, caring for the home, participating in the community, and employment with the team that directly targets individual needs.		✓	✓	✓
Implements effective strategies and supports to teach functional and life skills (ex: modeling, prompting, shaping, discrete trial instruction, natural environment teaching, and task analysis).	✓	✓	✓	✓
Implements the intervention plan across all environments with fidelity.	✓	✓	✓	✓
Implements programs throughout all daily activities maximizing opportunities for learning.	✓	✓	✓	✓
Supports development of functional and life skills within a contextual framework utilizing the natural environment.	✓	✓	✓	✓
Implements intervention to specifically teach personal awareness and self-monitoring.	✓	✓	✓	✓
Understands a variety of strategies to increase an individual's cognitive and learning abilities.	✓	✓	✓	✓
Develops an intervention plan targeting cognitive and learning skills with the team that is based on individual needs.		✓	✓	✓
Implements effective strategies and supports to teach skills needed to improve cognitive and learning abilities (ex: visual supports, narratives, prompting, shaping, and natural environment teaching).	✓	✓	✓	✓
Teaches paraprofessionals, professionals, and families to implement relevant components of the program.		✓	✓	✓
Understands a variety of strategies to increase an individual's short term and long term independence in academic skills.	✓	✓	✓	✓
Develops an intervention plan targeting meaningful academic skills with the team that is based on individual needs.		✓	✓	✓
Implements effective strategies and supports to teach academic skills that address the individual's learning style (ex: modeling, prompting, shaping, discrete trial instruction, natural environment teaching, and task analysis).	✓	✓	✓	✓
Supports literacy and math concept development within a contextual framework utilizing real materials.	✓	✓	✓	✓

	Paraprofessional Direct Services Staff	Professional Direct Service Staff	Master Professional Direct Service Staff	Advanced Degree, Program Developer, Specialist
Teaches paraprofessionals, professionals, and families to implement relevant components of the program.		✓	✓	✓
Understands how to measure progress and evaluate the effectiveness of strategies.	✓	✓	✓	✓
Observes behaviors using objective measures and criteria, and records data.	✓	✓	✓	✓
In consultation with the team, uses data and ongoing assessments to modify strategies as needed to promote communication skills in various settings.		✓	✓	✓

Appendix F:
Examples of Data Driven Assessment

Example 1)
Level of Independence

Student: **Date**:
Evaluator: **Context & Skill**: Obtaining lunch from the school cafeteria

	Level of Independance		
1. **Waits appropriately in lunch line**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
2. **Picks up tray and silverware**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
3. **Selects appropriate foods from cafeteria counter**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
4. **Selects drink**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
5. **Pays for food**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
6. **Carries tray to table**	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*	❑ *Full Prompt* ❑ *Partial Prompt* ❑ *Gestural Prompt* ❑ *Verbal Prompt* ❑ *Independent*
Total % of Steps Completed Independently			

Example 2)
Ecological Assessment

Student: **Date**:
Evaluator: **Context & Skill**: Social Skills/All Environments

Complete this form for each major environment (e.g., home, school, community activity)

What social activities occur in this environment?

How are these social activities structured (e.g., teacher directed, unstructured)?

What types of interactions does the student have with teachers/adults (e.g., task related, playing games)?

What types of interactions does the student have with peers (e.g., conversational, activity oriented)?

What is the nature of typical peer interactions in this environment?

Are there opportunities for the student to interact successfully and be reinforced?

Is this an integrated or segregated environment? How does that impact interactions?

Example 3)
Discrepancy Analysis / Comparison of Skills to Same Age Peers

Student: **Date**:
Evaluator: **Context & Skill**: Transition to Morning Group

Name:

Environment: Kindergarten classroom **Activity**: Transition from free time to morning group

Inventory of Target Student's Peers	Inventory of Target Student	Skills that target student needs to be taught or skills that need to be adapted or modified
1) Teacher calls class from free time to morning group and students finish putting their toys away and head over to group area.	1) Child continues to play or just stands over in the corner slightly rocking. After numerous verbal and physical prompts, child disengages for toys and goes with Paraprofessional to group. Goes up to closest line when prompted to "get your ticket."	
2) Scans group area for buddy, and plops down on chair next to them.	2) Last child there so sits on end in last empty seat. Accidentally bumps and upsets child nearest him.	
3) Teacher does greeting and asks the children what they did the night before. Children raise their hands to be chosen to share.	3) Once teacher has asked for sharing, child jumps in and asks if she has a new vacuum cleaner.	
4) First child begins to share, another child adds on.	4) Tries to continue the one-sided discussion about vacuum cleaners.	
5) Another child says that they have a dog too and it's…	5) Once redirected to let someone else share, withdraws and plays with the hem of the pants.	
6) Teacher acknowledges the children speaking and then calls on another child. Other children quiet down while next child shares.	6) Begins to rock, bumping into peer.	

Notes

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