

---

# Contents

<b>Acknowledgments</b>	<b>vii</b>
<b>About the Authors</b>	<b>ix</b>
<b>1. Classification of Autism in Young Children</b>	<b>1</b>
<i>Erin E. Barton</i>	
Diagnostic Classification	2
Prevalence	4
Etiology of Autism	5
Conclusions and Future Directions	7
<b>2. Early Detection and Medical Classification</b>	<b>9</b>
<i>Erin E. Barton</i>	
Introduction	9
The Importance of Early Detection	10
Selecting a Screening Measure	21
Administering and Communicating Screening Results	29
Diagnostic Procedures	30
Diagnostic Tools	31
Diagnosis Versus Eligibility	33
Conclusions and Future Directions	34
Learning Activities	35
Resources	35
<b>3. Educational Eligibility</b>	<b>37</b>
<i>Erin E. Barton and Beth Harn</i>	
Eligibility Versus Diagnosis	37
Learning Activities	54
<b>4. Writing Effective Educational Goals</b>	<b>55</b>
<i>Dylan S. Carelli and Erin E. Barton</i>	
Who Is on the Team?	56
Writing Family-Guided Goals	60
Focusing on Functional Skills	76

Using Autism-Specific Curricula	82
Addressing Academic Skills	85
Future Directions	91
Learning Activities	92
Resources	93
<b>5. Essential Components of Educational Programs</b>	<b>95</b>
<i>Erin E. Barton</i>	
Core Curricular Content	96
Highly Structured Teaching Environments	101
Predictability and Routines	102
Commitment to Evidence-Based Practices	103
Functional Approach to Problem Behaviors	104
Transitions	105
Family Involvement	105
Mechanism for Ongoing Program Evaluation	106
Future Directions	107
Learning Activities	107
Resources	108
<b>6. Designing and Evaluating Instruction Based on Student Skills and Responses</b>	<b>109</b>
<i>Beth Harn, Shanna Dee Davis, and Erin E. Barton</i>	
Considerations in Assessment to Lead to Improved Outcomes	110
Evaluating Progress and Response to Intervention	118
Considerations in Intervention Modification	121
Future Directions	124
Learning Activities	125
Resources	125
<b>7. Evidence-Based Strategies for Teaching Children With Autism Spectrum Disorders: Skill Acquisition and Fluency</b>	<b>127</b>
<i>Brian Reichow and Terrell Reichow</i>	
Teaching New Skills and Behaviors	128
Using Response Prompting Strategies to Teach New Skills and Behaviors	135
Teaching Chained Behaviors	143
Modifying Instructional Arrangements to Increase the Efficiency of Learning	144
Future Directions	147
Learning Activities	148
Resources	148

<b>8. Evidence-Based Strategies for Maintenance, Generalization, and Self-Management</b>	<b>151</b>
<i>Sarah E. Pinkelman and Erin E. Barton</i>	
Maintenance of New Skills	152
Programming for Generalization	164
Self-Management	166
Future Directions	169
Learning Activities	169
Resources	169
<b>9. Evidence-Based Practices for Communication Skill Acquisition</b>	<b>171</b>
<i>Matt Tincani and Jessica Zawacki</i>	
What Is Communication?	172
Augmentative and Alternative Communication Programming	173
Picture Exchange Communication System (PECS)	173
Voice Output Communication Aides (VOCAs)	175
Pivotal Response Treatment	178
Functional Communication Training	180
Comprehensive Treatment Models	183
Future Directions	186
Learning Activities	186
Resources	186
<b>10. Evidence-Based Practices for Social Skill Acquisition</b>	<b>191</b>
<i>Summer Ferreri and Joshua Plavnick</i>	
Peer-Mediated Instruction	192
Social Skills Training	196
Pivotal Response Training	202
Future Directions	213
Learning Activities	213
Resources	213
<b>11. Designing Instruction and Supports to Prevent and Decrease Problem Behavior</b>	<b>217</b>
<i>Kathleen Strickland-Cohen and Beth Harn</i>	
Positive Behavioral Interventions and Supports	218
Functional Behavioral Assessment	225
How Will We Change Behavior? Developing Behavior Support Plans	235
Evaluation Plan	245
Future Directions	247
Learning Activities	248
Resources	248

<b>12. Maximizing Implementation of Evidence-Based Strategies in the Classroom</b>	<b>249</b>
<i>Lois Pribble and Erin E. Barton</i>	
Collaborating Within the Interdisciplinary Team	251
Effective Consultation and Coaching	257
Barriers to Implementation	271
Future Directions	277
Learning Activities	278
Resources	279
<b>Master List of Acronyms</b>	<b>281</b>
<b>References</b>	<b>285</b>

© Hawker Brownlow Education

---

# *Classification of Autism in Young Children*

*Erin E. Barton*

*University of Colorado Denver*

---

## **Chapter Objectives:**

- Describe the symptomatology of autism spectrum disorders.
  - Describe the variability in autism symptomatology across people with autism.
  - List and describe the autism spectrum disorders with the DSM-IV-TR.
  - Describe two autism classification systems (DSM-IV-TR & ICD-10).
  - Describe the current prevalence of autism and the issues associated with measuring the prevalence.
- 

**A**utism is a neurobiological developmental disorder initially characterized by Leo Kanner (1943) and Hans Asperger (1944). Since their initial descriptions, the identification and classification of autism

have undergone many iterative changes. The current approach to autism classification is outlined in the *Diagnostic and Statistical Manual of Mental Disorders—4th Edition—Text Revision* (DSM-IV-TR; American Psychiatric Association, 2000). This manual provides a classification system for diagnosing and differentiating autism under the heading “pervasive developmental disorders.” However, the identification of autism typically involves a team of professionals. Chapters 2 and 3 provide descriptions of the autism identification processes. Autism is not a single disease. It is characterized by a spectrum of disorders, which varies across and within children over time. In most cases, autism first appears in early childhood and continues throughout adulthood. Advancements in autism treatment often lead to improved outcomes over time.

Autism symptomatology manifests with much variability. Today there are several different conditions related to autism commonly known as Autism Spectrum Disorders (Volkmar, State, & Klin, 2009). The term *autism* is used throughout this book to refer generally to children with Autism Spectrum Disorders. Although there are many commonalities, there is no single behavioral marker for autism. The hallmark autism symptoms are deficits in social behaviors. The criteria used for classification of autistic disorder mirror the triad of impairments first described by Leo Kanner (1943). Characteristics include qualitative impairments in social interactions, communication, and restricted, repetitive, and stereotyped patterns of behavior. Additionally, delays in social interaction, communication, or symbolic play must be present before the child turns 3 years old (American Psychiatric Association, 2000).

About 60% of children with autism experience significant cognitive delays (Fombonne, 2005), and about 30%–50% will not develop functional speech; however, these numbers are decreasing with early diagnosis and treatment (Chakrabarti & Fombonne, 2005). Although, autism is considered a mental health disorder, it severely impacts development and academic achievement in most children. Thus, the vast majority of children with autism will be eligible for specialized early intervention and education services (see Chapter 3 for more on educational eligibility). Autism is considered a severe disability due to the intense, lasting effects the disorder has on the individual and his or her family.

## DIAGNOSTIC CLASSIFICATION

Classification systems are important for helping families understand their child’s behaviors, provide access to appropriate treatment, and conduct and replicate research on autism treatments. Two classification systems are widely used to diagnosis autism. The American Psychiatric Association publishes the DSM. The most recent version, the fourth edition with text

revisions (IV-TR), was published in 2000. The World Health Organization (WHO) publishes the International Classification of Diseases (ICD). The ICD-10 is the international standard diagnostic classification system used to record a variety of world health records, including mortality and morbidity statistics. Although these two classification systems define autism along the triad of impairments (atypical social, communication, and patterns of behavior), there are some important distinctions. These are discussed further.

**DSM-IV-TR.** The DSM-IV-TR includes autism as one of five Pervasive Developmental Disorders (PDDs; American Psychiatric Association, 2000). The five PDDs include the following: Autistic Disorder, Rett's Disorder, Childhood Disintegrative Disorder, Asperger's Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS; American Psychiatric Association, 2000). Each of these disorders manifests with pervasive social and behavioral deficits. The most recognized

#### **Diagnostic Criteria for 299.00 Autistic Disorder:**

- A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):
  1. qualitative impairment in social interaction, as manifested by at least two of the following:
    - a. 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
    - b. failure to develop peer relationships appropriate to developmental level
    - c. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by lack of showing, bringing, or pointing out objects of interest)
    - d. lack of social or emotional reciprocity
  2. qualitative impairments in communication as manifested by at least one of the following:
    - a. 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)
    - b. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
    - c. stereotyped and repetitive use of language or idiosyncratic language
    - d. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

*(Continued)*

(Continued)

3. restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
  - a. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal in intensity or focus
  - b. apparently inflexible adherence to specific, nonfunctional routines or rituals
  - c. stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
  - d. persistent preoccupation with parts of objects
- B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder. (American Psychiatric Association, 2000, p. 75)

*Source:* Reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (Copyright © 2000). American Psychiatric Association.

of the PDDs is Autistic Disorder. The criteria for DSM-IV-TR for Autistic Disorder is listed here.

***International Classification of Diseases.*** The ICD-10 (WHO, 1992) classification system is widely used in Europe and around the world. The criteria for **childhood autism** are similar to the DSM-IV-TR criteria for Autistic Disorder. They include the following:

- Abnormal or delayed development prior to age 3 in
  - Receptive or expressive language
  - Social interactions
  - Functional or symbolic play
- Qualitative impairments in social interactions
- Qualitative impairments in communication skills
- Restricted, repetitive patterns of behavior

As is evident, the DSM-IV-TR and ICD-10 include similar criteria to diagnose autism.

eligibility. Both types function to identify children with autism to procure appropriate services and supports. However, the procedures, guidelines, and location of services are different across the two types of identification. A **medical diagnosis** is made to develop a medical treatment strategy to address development and independent functioning, determine prognosis (what will happen in the future), involve insurance payers, and emphasize diagnostic accuracy. As described in Chapter 2, a comprehensive medical diagnosis involves several assessments administered by a variety of medical professionals. The DSM-IV-TR, which is written by medical and mental health professionals, is the standard used for medical diagnosis. The medical diagnosis also will identify any comorbid disorders (e.g., obsessive-compulsive disorder, anxiety disorder). The medical diagnosis is not designed to address the child's educational or academic needs. However, the information from a comprehensive medical diagnosis often is helpful in the educational eligibility.

Conversely, the purpose of the educational evaluation is to establish eligibility and determine if the child's disability/disorder is significantly and negatively impacting his or her academic development and if the child needs specialized services (see Table 3.1 for a list of differences between medical and educational identification). Eligibility criteria are established under federal law as specified in the IDEA with 13 eligibility categories, including autism (e.g., deaf-blindness, intellectual disability, orthopedic impairment, traumatic brain injury, speech or language impairment). Each state develops eligibility criteria for these special education categories. Unlike the medical diagnosis, where the DSM-IV-TR is ubiquitous, there is not a uniform eligibility procedure or criteria for educational eligibility. The standards cannot be more restrictive than what is specified in IDEA, but they can be more permissive. The implication of this individual state control is that there is huge variability across states for how students are identified and a range of services that may be delivered.

IDEA does not require that a medical diagnosis is necessary as part of determining educational eligibility; however, some states do require this as part of the process for determining eligibility. Within the educational evaluation process, schools/districts are required to gather a range of information from a variety of sources (i.e., formal assessments, record review including medical diagnosis, interviews, observations, etc.) to assist in the process of determining if the student's disability requires special education services so that the child receives appropriate services. As such, if the state/district requires a medical diagnosis as part of the eligibility process, the diagnosis must be provided at public expense and *not* paid for by the parents/guardians of the child. Additionally, the medical diagnosis *cannot* be used as the sole criterion in determining educational eligibility (i.e., additional assessment and evaluation by educational personnel is

sessions in which no prompts are provided and are necessary to monitor learning. The only difference between instructional trials and probe trials is the presence of the controlling prompt—probe sessions do not have the controlling prompt.

Although you must use two different types of sessions for simultaneous prompting (i.e., instructional sessions and probe sessions), these sessions can occur back-to-back (i.e., conduct the probe session immediately before the instructional session). This back-to-back arrangement of probe and instructional sessions for simultaneous prompting adds some, but not a significant amount of time compared to the time delay strategies. Moreover, it might not be necessary to conduct daily probe sessions (Reichow & Wolery, 2009a), although further study of alternative session arrangements is needed before broad generalizations can be made. Although adding the probe sessions might not add much more teacher time, it does add complexity, thought, and preparation, which you should consider when choosing to use this strategy. Simultaneous prompting has been studied nearly exclusively in preschool-aged children with disabilities in one-to-one teaching formats, and it has been shown to be a highly effective treatment option for teaching mainly discrete behaviors (a single behavior). Additional information on simultaneous prompting can be found in the Autism Internet Module for prompting (Neitzel & Wolery, 2010).

### Time Delay

Time delay strategies (sometimes referred to as prompt delay strategies) have been used for many years to teach new behaviors. We cover two time delay strategies in this chapter: constant time delay (CTD) and progressive time delay (PTD). The time delay strategies have many similarities with simultaneous prompting (Table 7.3 shows the similarities and differences among simultaneous prompting, CTD, and PTD). Like simultaneous prompting, CTD and PTD use only one prompt, which must be a controlling prompt. Unlike simultaneous prompting, only one type of session is used, which is similar to the instructional session used in simultaneous prompting. Although there is only one type of session, the time delay procedures use two types of trials: 0-second trials, which are identical to instructional session trials of simultaneous prompting, and delay trials. When you conduct a 0-second delay instructional session trial, you would present the target stimulus, immediately deliver the controlling prompt, provide a short learner response interval (e.g., 3 to 5 seconds), and provide differential consequences. After the child responds correctly to the controlling prompt, you cease using the 0-second delay interval and begin delaying the delivery of the controlling prompt after the presentation of the target stimulus. For example, if you were conducting an instructional session trial with a 4-second delay interval, you would present the target stimulus, wait 4 seconds (i.e., provide the delay interval), deliver the controlling prompt, provide a short learner response interval (e.g., 3 to 5 s),