

# Developmental Assessment

## Overview of Instruments

When assessing very young students or students demonstrating more classic characteristics of autism, it may not be possible to administer formal standardized assessments to establish the student's functioning. Yet, such information is needed to determine appropriate identification and programming.

Developmental assessments provide an alternative for gaining information about the student's cognitive abilities as well as many other areas, including academic skills, motor skills, communication and language skills, social skills, and self-help/adaptive skills. The assessments in this category consist of screening instruments, criterion-referenced measures, rating scales, and norm-referenced measures, some of which can be completed by a teacher or caregiver or through direct interaction with the child being assessed. If the developmental measure does not address adaptive behavior, a separate measure of adaptive behavior would provide additional important data for the evaluation team to consider in programming decisions.

### **BATTELLE DEVELOPMENTAL INVENTORY-SECOND EDITION (BDI-2)**

The Battelle Developmental Inventory-Second Edition (BDI-2; Newborg, 2005) is an individually administered, norm-referenced developmental assessment. Designed to screen children at risk for developmental delays from birth through 7 years, 11 months, it measures strengths in five domains, providing a quotient in each: Adaptive, Personal-Social, Communication, Motor, and Cognitive. Each domain consists of two or three subdomains, and all contribute to the Total Developmental Quotient. Subdomain scores are also generated.

The BDI-2 may be administered as a structured test, scored based on observation, conducted as an interview, or a combination of the three formats. This allows flexibility in gathering information for children who are not responsive in a structured assessment environment. The manual provides information about acceptable testing accommodations.

## **BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT-THIRD EDITION (BAYLEY-III)**

The Bayley Scales of Infant and Toddler Development-Third Edition (Bayley-III; Bayley, 2005) may be used to identify developmental delays, chart a child's progress, and teach parents about the child's development. It is designed to be used with children aged 1 month to 42 months. It consists of five scales: Cognitive, Language (Receptive and Expressive), Motor (Fine and Gross), Social-Emotional, and Adaptive Behavior (Conceptual, Social, and Practical). It also includes a test observations measure to aid in intervention planning. This addition includes growth scores, index scores (standard scores), subtest scaled scores, and percentiles. The Adaptive Behavior scale of the Bayley-III was adapted from the Parent/Primary Caregiver form of the Adaptive Behavior Assessment System-Second Edition (ABAS-II; Harrison & Oakland, 2003).

## **DEVELOPMENTAL ACTIVITIES SCREENING INVENTORY-SECOND EDITION (DASI-II)**

The Developmental Activities Screening Inventory-Second Edition (DASI-II; Fewell & Langley, 1984) is designed for early detection of developmental disabilities in children functioning between the ages of birth and 60 months, although the lowest scorable age is 1 month. The DASI-II is an informal, individualized test that yields a developmental age based on the number of activities completed.

The instrument covers 15 skills categories ranging from sensory intactness, means-end relationships, and causality to memory, seriation and reasoning. Designed to be used with children with language impairments, the DASI-II does not penalize a child with known language deficits. It can be a useful instrument for gaining developmental levels when a child is unable to respond to formal cognitive measures.

## **Developmental Assessment of Young Children (DAYC)**

The Developmental Assessment of Young Children (DAYC; Voress & Maddox, 1998) is a norm-referenced assessment designed to identify possible delays in children aged 5-11 in the areas of

cognition, communication, social emotional development, physical development, and adaptive behavior. Each of the five domains measured reflects an area mandated for assessment and intervention in IDEA for young children. The DAYC helps to identify infants and young children who may benefit from early intervention. The assessment is individually administered by a clinician or a team through observation, interview of caregivers, and/or direct assessment. The DAYC can be tailored to the individual's assessment needs by administering all five subtests to yield a General Development Quotient (GDQ), or administering any combination of the subtests. In addition to the GDQ, standard scores, percentile scores, and age equivalents can be derived.

### **DEVELOPMENTAL PROFILE-THIRD EDITION (DP-3)**

The Developmental Profile-Third Edition (DP-3; Alpern, Boll, & Shearer, 2007) is a recently updated norm-referenced developmental screening instrument that uses a structured parent interview to determine the child's present level of functioning. It can be administered either as an interview or provided as a Parent/Caregiver Checklist when direct interview is not feasible.

The DP-3 inventories 180 skills designed to assess a child's development on five scales – Physical, Adaptive Behavior, Social-Emotional, Cognitive, and Communication. A General Development Score may also be obtained based on performance on all five scales. It is particularly useful for children with severe disabilities who may not respond to formal evaluation procedures and measures. With the DP-3 (Third Edition), the expanded age range extends from birth through 12 years, 11 months. Newly standardized data allow conversion of raw scores into standard scores, percentiles, stanine scores, age equivalent scores, and descriptive ranges.

### **HAWAII EARLY LEARNING PROFILE (HELP) AND THE HELP FOR SPECIAL PRESCHOOLERS ASSESSMENT CHECKLIST (HSPAC)**

The Hawaii Early Learning Profile (HELP; Vort, 2004) and the HELP for Special Preschoolers Assessment Checklist (HSPAC) are designed to identify young children's needs, set instructional objectives, and monitor their progress (Furuno et al./The Santa Cruz County Office of

Education, 1987). The HELP is designed for children from birth to age 3, and the HSPAC is designed for children aged 3 to 6.

The instruments give information regarding the child's performance in five general areas: Self-Help, Motor Development, Communication, Social Skills, and Learning/Cognitive. Information for completing the checklist may be gathered from (a) observation of the student, (b) interview with the parent, or (c) play interactions with the child. This can be useful when the child cannot participate meaningfully in formal academic assessment.

### **MERRILL-PALMER-REVISED SCALES OF DEVELOPMENT (M-P-R)**

The Merrill-Palmer-Revised (M-P-R; Roid & Sampers, 2004) assesses cognitive, social-emotional, self-help, and fine- and-gross motor development in infants and children under the age of 6 years, 6 months. It is an individually administered, norm-referenced measure. The M-P-R consists of four discrete assessment batteries. Parent reports are given in the areas of Expressive Language, Social-Emotional Development, Social-Emotional Temperament, and Self-Help/Adaptive. Clinician-administered scales include Cognitive, Gross-Motor, and Expressive Language. The Cognitive Battery measures general cognitive, receptive language, and fine-motor areas. It also provides supplemental scores for memory, speed of cognition, and visual-motor ability. The Gross-Motor Scale consists of general gross-motor development, unusual movements, and atypical movement patterns. Directions for the examiner are available in both English and Spanish. Three of the parent reports (Social-Emotional Developmental Scale, Temperament Scale, and the Self-Help/Adaptive Scale) are available in Spanish. Since the Expressive Language Scale measures English usage, it is not available in Spanish.

### **MULLEN SCALES OF EARLY LEARNING: AGS EDITION**

The Mullen Scales of Early Learning: AGS Edition (Mullen, 1995) is an individually administered standardized measure of cognitive functioning designed to be used with children from birth through 68 months. This update is a revised version of the original Mullen Scales of Early Learning, combining the Infant MSEL with the Preschool MSEL. It consists of a Gross-Motor

Scale and four Cognitive Scales: Visual Reception, Fine-Motor, Receptive Language, and Expressive Language. The Gross-Motor Scale is for use with children ages birth through 33 months, whereas the Cognitive Scales are used with children ages birth to 68 months. *T*-scores (mean of 50 and a standard deviation of 10) are given for individual scales, and an optional Early Learning Composite serves as an overall estimate of cognitive functioning. The Mullen Scales may be used for eligibility decisions as well as program planning.

### **PSYCHOEDUCATIONAL PROFILE-THIRD EDITION (PEP-3)**

The Psychoeducational Profile-Third Edition (PEP-3; Schopler, Lansing, Reichler, & Marcus, 2005) is a norm-referenced assessment tool designed to evaluate the uneven learning strengths and weaknesses that often characterize individuals on the autism spectrum. It provides information on developmental skill levels and can assist in determining the severity of symptoms related to autism for children from 6 months to 7 years. While it is not a direct measurement of intelligence or general cognitive abilities, the PEP-3 provides helpful descriptive information concerning a youngster's characteristic cognitive pattern, including solving problems, relating to environmental stimuli, and coping with transition between tasks.

Six of the 10 subtests are related to broad performance across a variety of tasks, while the remaining four are concerned with adaptive behaviors demonstrated during the testing session. PEP-3 information is particularly valuable when a child is unable to respond to traditional formal cognitive measures.

### **TRANSDISCIPLINARY PLAY-BASED ASSESSMENT-SECOND EDITION (TPBA-2)**

Transdisciplinary Play-Based Assessment-Second Edition (TPBA-2; Linder, 2008) is designed to evaluate children between birth and age 6 years in structured and unstructured play settings using observation. The domains assessed include Cognitive, Social-Emotional, Communication and Language, and Sensorimotor. The purpose of this instrument is to assist in developing a program plan for specific interventions for children in early childhood programs.

Assessment is completed in six phases by a team that consists of parents and professionals, who all use the TPBA-2 scales to assess the child. Each member of the team has specific responsibilities during the assessment. A play facilitator interacts primarily with the child during the evaluation. A parent facilitator interacts with the parents, providing interpretation of observations. A video camera operator tapes the session for later viewing and scoring by team members. Other team members (e.g., speech-language pathologist, occupational therapist, physical therapist) observe and record their observations.

## Summary of Developmental Instruments

Name of Tool Author (Year)	Age Range (in years)	Method of Administration/ Format	Approximate Time to Administer	Subscales	Availability
Battelle Developmental Inventory- Second Edition (BDI-2) Newborg (2005)	Birth-8	Individualized, norm-referenced; administration-structured, observation, or scripted interview; screening + in-depth versions; based on milestones; Spanish version available Use as curriculum-, criterion-, or norm-referenced measure Yields standard scores, percentiles, domain scores	Screening: 30 min.; Full assessment: 60-120 min.	Five domain scores: Personal-Social (adult and peer interaction, self-concept); Adaptive (self-care, personal responsibility); Motor (gross, fine, perceptual); Communication (receptive, expressive); Cognitive Ability (attention + memory, reasoning + academic skills, perceptual/conceptual); Developmental Quotient	Riverside Publishers <a href="http://www.riversidepublishing.com/products/bdi">http://www.riversidepublishing.com/products/bdi</a>

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Name of Tool Author (Year)	Age Range (in years)	Method of Administration/ Format	Approximate Time to Administer	Subscales	Availability
Bayley Scales of Infant and Toddler Development-Third Edition (Bayley-III) Bayley (2005)	Birth-3.5	Individually administered by clinician in play-based format for Cognitive, Language (Expressive/Receptive), and Motor (Fine/Gross) Scales; caregiver questionnaire for Social-Emotional and Adaptive Functioning (Conceptual, Social, and Practical). Yields scaled scores, composite scores, and percentile ranks, growth and developmental age scores for Cognitive, Language and Motor	50 min. for 1-12 mos.; 90 min. for 13-42 mos.	Cognitive; Language (Receptive, Expressive, Total); Motor (Fine-Motor, Gross-Motor, Total); Social-Emotional; Adaptive Behavior (Communication, Community Use, Functional Pre-Academics, Home Living, Health & Safety, Leisure, Self-Care, Self-Direction, Social, Motor, Total)	The Psychological Corporation (Harcourt Assessment,/ Pearson) <a href="http://www.pearsonassessments.com/HAWEB/Cultures/en-us/Productdetail.htm?Pid=015-8027-23X">http://www.pearsonassessments.com/HAWEB/Cultures/en-us/Productdetail.htm?Pid=015-8027-23X</a>
Developmental Activities Screening Inventory-Second Edition (DASI-II) Fewell & Langley (1984)	Birth-5	Individually administered informal screening measure; may be presented as a nonverbal test; 67 perceptual, motor, and cognitive tasks Yields Developmental Quotient	25-30 min.	Developmental Quotient	Pro-Ed <a href="http://www.proedinc.com/customer/ProductView.aspx?ID=4895&amp;sSearchWord=Developmental+Activities+Screening">http://www.proedinc.com/customer/ProductView.aspx?ID=4895&amp;sSearchWord=Developmental+Activities+Screening</a>

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Name of Tool Author (Year)	Age Range (in years)	Method of Administration/ Format	Approximate Time to Administer	Subscales	Availability
Developmental Assessment of Young Children (DAYC) Voress & Maddox (1998)	5-11	Norm-based assessment individually administered by clinician or team through observation, interview of caregivers, and/or direct assessment Yields General Development Quotient (GDQ), standard scores, percentile scores, and age equivalents Allows tailoring of assessment by using all or any combination of the five subtests	10-20 min.	General Development Quotient (GDQ) if all 5 subtests are completed, but all subtests can be used independently for each domain – cognition, communication, social emotional development, physical development, and adaptive behavior	Pro-Ed, Inc. <a href="http://www.proedinc.com/customer/ProductView.aspx?ID=1536&amp;sSearchWord=Developmental+assessment+of+young+children">http://www.proedinc.com/customer/ProductView.aspx?ID=1536&amp;sSearchWord=Developmental+assessment+of+young+children</a>
Developmental Profile-Third Edition (DP-3) Alpern, Boll, & Shearer (2007)	Birth-13	Norm-based rating scale – structured interview with parents or Parent/Caregiver checklist can be completed by parent Yields standard scores, percentiles, age score, developmental levels	20-40 min.	General development score; standard score for Physical Scale, Adaptive Behavior Scale, Social-Emotional Scale, Cognitive Scale, Communication Scale	Western Psychological Services <a href="http://portal.wpspublish.com/portal/page?_pageid=53_186601&amp;_dad=portal&amp;_schema=PORTAL">http://portal.wpspublish.com/portal/page?_pageid=53_186601&amp;_dad=portal&amp;_schema=PORTAL</a>
Hawaii Early Learning Profile (HELP) Vort Corporation (2004) The Santa Cruz County Office of Education (Furuno et al.) (1987)	Birth-6	Criterion-referenced; covers 685 skills (birth-3 yrs.) and 622 skills (3-6 yrs.) Administration by observation of student, parent interview, or play interaction with student	Estimates vary according to number of areas rated and method of administration	Cognitive, Language, Gross-Motor, Fine-Motor, Social, Self-Help	Vort Corporation <a href="http://www.vort.com">www.vort.com</a>

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Name of Tool Author (Year)	Age Range (in years)	Method of Administration/ Format	Approximate Time to Administer	Subscales	Availability
Merrill-Palmer Revised Scales of Development (M-P-R) Roid & Sampers (2004)	Birth- 6.5	Individually- administered, norm- referenced measure of cognitive, language, motor, self- help, and social- emotional domains; clinician-administered (Cognitive, Gross Motor, and Expressive Language) and parent/caregiver report (Expressive Language, Social Emotional Development (S), Social Emotional Temperament (S), and Self- Help/Adaptive (S) (S = available in Spanish forms) Based on Cattell- Horn-Carroll Model Yields standard scores, percentiles, age-equivalents and criterion-referenced growth scores	40-50 min. for the Cognitive battery	Developmental Index, Expressive Verbal, Fine Motor, Gross Motor, Memory, Overall Expressive Language, Receptive Language, Self-Help/Adaptive Behavior, Social- Emotional, Visual Motor, Verbal and Nonverbal Reasoning, Speed of Processing	Stoelting Co. <a href="http://www.stoeltingco.com">www.stoeltingco.com</a>
Mullen Scales of Early Learning: AGS Edition Mullen (1995)	Birth- 6.5	Individually administered, norm- referenced measure of cognitive development; clinician-administered interactive assessment Yields <i>t</i> -scores, percentile rank, descriptive category, age equivalents	15-60 min.	Gross-Motor, Visual Reception, Fine-Motor, Receptive Language, Expressive Language, Early Learning Composite	American Guidance Service (Pearson AGS Globe) <a href="http://www.pearsonassessments.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=PAa11150">http://www.pearsonassessments.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=PAa11150</a>

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Name of Tool Author (Year)	Age Range (in years)	Method of Administration/ Format	Approximate Time to Administer	Subscales	Availability
Psychoeducational Profile- Third Edition (PEP-3) Schopler, Lansing, Reichler, & Marcus (2005)	.5-7	Developmental measure Individually administered norm-referenced, clinician-administered; two scales: (a) performance-structured play with child, and (b) parent/caregiver scale Performance subtests yield subtest scores, developmental age scores, percentile ranks, developmental/adaptive levels (mild, moderate, severe) for six developmental areas and four areas of maladaptive behavior; caregiver report Ratings of skills in four areas: percentiles, developmental ages, developmental/adaptive levels	45-90 min.	Composite scores, percentiles, adaptive levels and developmental ages for Communication, Motor, and Maladaptive Behavior; same scores for each of 10 Performance Subtests (Cognitive Verbal/ Preverbal, Expressive Language, Receptive Language, Fine-Motor, Gross-Motor, Visual-Motor Imitation, Affective Expression, Social Reciprocity, Characteristic Motor Behaviors, and Characteristic Verbal Behaviors); Developmental Age, percentile level for caregiver report areas (Problem Behaviors, Personal Self-Care, Adaptive Behavior)	Pro-Ed <a href="http://www.proedinc.com/customer/productView.aspx?ID=3577">http://www.proedinc.com/customer/productView.aspx?ID=3577</a>
Transdisciplinary Play-Based Assessment- Second Edition (TPBA-2) Linder (2008)	Birth-6	Individually administered, functional assessment by a team in an arena-type format using structured and unstructured play with systematic observation	60-90 min.	Team rating in domains: Cognitive, Social-Emotional, Communication and Language, Sensorimotor	Paul H. Brookes Publishing Co., Inc. <a href="http://www.brookespublishing.com/store/books/linder-tobai2/index.htm">http://www.brookespublishing.com/store/books/linder-tobai2/index.htm</a>

## Research on Developmental Assessment

To date, no research has investigated the use of developmental assessments with students on the autism spectrum.

## Misconceptions

Myth	Reality
Some students are untestable.	No student is untestable. It is a matter of finding the most appropriate and suitable approach. For example, when standardized testing procedures are ineffective, administer a test in a nonstandardized fashion and collect meaningful qualitative data. Always document when you break standardization guidelines. Alternate sources of data may be used. Examples include developmental measures, observations, informal student assessment, portfolios, and interview with the teacher/parent/caregiver.
Developmental quotients, IQs, and mental ages provide important information about a student.	While scores from measures are informative, test results are only one piece of the picture. Do not underestimate the value of qualitative information gathered during the evaluation. Numbers do not define a student.

## References

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## Resources and Materials

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- Plotts, C., & Webber, J. (2001-2002). The role of developmental histories in the screening and diagnosis of autism spectrum disorders. *Assessment for Effective Intervention, 27*(1-2), 19-26.
- The authors discuss the important elements in developmental assessment.