

Assessment in Special Education

Part 16 – Comprehensive Tests of Academic Achievement

Introduction

Assessing academic achievement is a vital component of the assessment process. Understanding where a child has strengths and weaknesses in academic areas is necessary if you are going to diagnose a possible disability. There are numerous areas professionals can assess when giving an achievement test. Regardless of the number of areas, reading, writing, math, and spelling are part of every initial assessment battery for possible classification and/or placement in special education. We always need to know how a child compares academically, relative to the norms of the population. Therefore, all special educators should be able to read scores from achievement tests and, at a minimum, have a general understanding of what the assessment measures test and the purpose of the testing. For those who must administer achievement batteries, it is essential that a complete, thorough, valid, and reliable battery be given. This issue of NASSET's Assessment in Special Education Series will focus on the latest comprehensive tests of academic achievement. These tests normally offer a thorough approach to the assessment of a child's strengths and weaknesses in reading, writing, math, and spelling.

Brigance Comprehensive Inventory of Basic Skills– Revised (CIBS-R)

Author: Albert Brigance

Description of Test: As with its criterion-referenced application, the CIBS–R is designed to be administered in classroom settings, by teachers. Accordingly, the standardization and validation of the CIBS–R was conducted largely by teachers who administered the test to their own students in classroom settings. This means that the CIBS–R produces a complete range of data on students' skill levels as demonstrated under real-life, everyday conditions. The standardized portions of the CIBS–R are designed to meet state and federal assessment requirements. This means that the CIBS–R can be used as the educational portion of the battery that identifies children with learning disabilities, giftedness, or other exceptionalities. Specifically, the CIBS–R produces grade equivalents, age equivalents, percentiles, and quotients in six of the seven areas of achievement designated under the Individuals with Disabilities Education Act, for the detection of learning disabilities (basic reading skills, reading comprehension, math calculation, math reasoning, written language, and listening comprehension). The CIBS–R also provides data on students' information-processing skills in order to detect students with learning disabilities caused by processing deficits. Ultimately, the CIBS–R shows how students are progressing and identifies their strengths and weaknesses across skill areas

Administration Time: Specific time limits are listed on many tests; others are untimed.

Age/Grade Levels: Grades pre-K through 9

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Subtest Information: There are four subtest areas including 154 pencil-and-paper or oral-response tests:

- *Readiness*—The skills assessed include color naming; visual discrimination of shapes, letters, and short words; copying designs; drawing shapes from memory; drawing a person; gross motor coordination; recognition of body parts; following directional and verbal instructions; fine motor self-help skills; verbal fluency; sound articulation; personal knowledge; memory for sentences; counting; alphabet recitation; number naming and comprehension; letter naming; and writing name, numbers, and letters.
- *Reading*—This area evaluates word recognition, oral reading, comprehension, oral reading rate, word analysis (auditorily and while reading), meaning of prefixes, syllabication, and vocabulary.
- *Language Arts*—This area assesses cursive handwriting, grammar and mechanics, spelling, and reference skills.
- *Mathematics*—This area assesses rote counting, writing numerals in sequence, reading number words, ordinal concepts, numeral recognition, writing to dictation, counting in sets, Roman numerals, fractions, decimals, measurement (money, time, calendar, linear/liquid/weight measurement, temperature), and two- and three-dimensional geometric concepts.

Kaufman Tests of Educational Achievement–3rd Edition (KTEA-3)

Authors: Alan S. Kaufman and Nadren L. Kaufman

Description of Test: The KTEA-3 is an individually administered battery that gives a flexible, thorough assessment of the key academic skills in reading, math, written language, and oral language. The KTEA-3 Comprehensive Form has two independent, parallel forms (A and B), covers a wider range of achievement domains, and provides error analysis capabilities.

Administration Time: Comprehensive Form: (pre-K–K) 25 minutes; (grades 1-2) 50 minutes; (grades 3+) 70 minutes. Brief Form: (ages 4½ to Adult) 20-30 minutes

Age/Grade Levels: Ages 4.0 through 25

Subtest Information: The test contains 14 subtests making up five composite scores:

- **Reading Composite**

Letter & Word Recognition- The student identifies letters and pronounces words of gradually increasing difficulty.

Reading Comprehension- This untimed test of silent reading comprehension includes several item types. Early items require matching a symbol or word(s) with its corresponding picture. Subsequent items require reading a simple instruction and responding by performing the action. Later items involve reading passages of increasing difficulty and answering literal and/or inferential questions about them. The most difficult items require rearranging five sentences into a coherent paragraph, and then answering questions about the paragraph.

Silent Reading Fluency- The student silently reads simple sentences and marks yes or no in the Response Booklet to indicate whether the statement is true or false, completing as many items as possible within a two-minute time limit.

Reading Vocabulary- Early items require the student to point to one of three words with the same meaning as a picture and target word. Each of the remaining items requires the examinee to read a sentence (silently or aloud) and say or point to the word in the sentence that has a similar meaning to the target word.

Phonological Processing- The student responds orally to items that require manipulation of sounds. Tasks include rhyming, matching, blending, segmenting, and deleting sounds.

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Nonsense Word Decoding- The student applies phonics and structural analysis skills to decode nonsense words of increasing difficulty

Letter Naming Facility- The student names a combination of upper and lower case letters as quickly as possible during two short trials.

Word Recognition Fluency- The student reads isolated words aloud as quickly as possible during two 15-second trials.

Decoding Fluency- The student reads isolated nonsense words aloud as quickly as possible during two 15-second trials.

Associated Fluency- The student says as many words as possible in 60 seconds that belong to a given semantic category

Object Naming Facility- The student names pictured objects as quickly as possible during two short trials.

- **Math Composite**

Math Concepts & Applications- The student responds orally to items that require the application of mathematical principles to real-life situations. Skill categories include number concepts, operation concepts, time and money, measurement, geometry, fractions and decimals, data investigation, and higher math concepts

Math Computation- The student writes answers to as many math calculation problems as possible. Skills assessed include simple counting and number identification; addition, subtraction, multiplication, and division operations; fractions and decimals; square roots and exponents; and algebra.

Math Fluency- The student writes answers to as many addition, subtraction, multiplication, and division problems as possible in 60 seconds.

- **Written Language Composite**

Written Expression- Prekindergarten and kindergarten students trace and copy letters, and write letters, words, and a sentence from dictation. At grades 1 and higher, students complete writing tasks in the context of a grade-appropriate story format. Items at those levels include writing sentences from dictation, adding punctuation and capitalization, filling in missing words, completing sentences, combining sentences, writing compound and complex sentences, and writing an essay based on the story.

Spelling- The easiest items require students to write single letters that represent sounds. The remaining items require students to write increasingly difficult (regular and irregular) words from dictation.

Writing Fluency- The student writes one sentence for each picture presented in the Response Booklet and completes as many items as possible within a five-minute time limit.

- **Oral Language Composite**

Listening Comprehension- Each item requires the examinee to listen to either a sentence read by the examiner (for the early items) or a recorded passage played from the Audio CD. After listening to each sentence or passage, the student responds orally to literal and/or inferential comprehension questions asked by the examiner.

Oral Expression- The student responds orally with complete sentences describing the photographs presented in the Stimulus Book. As items progress in difficulty, one or two target words are required in the student's response. The most difficult items require a response beginning with a phrase or target word(s).

- **Comprehensive Achievement Composite**

Peabody Individual Achievement Test– Revised/Normative Update (PIAT-R/NU)

Author: Frederick C. Markwardt, Jr.

Description of Test: The PIAT-R is used in special education for identifying academic deficiencies. It is made up of six subtests. The most typical response format on the PIAT-R is multiple-choice. The student is shown a test plate with four possible answers and asked to select the correct response.

Administration Time: 50 to 70 minutes

Age/Grade Levels: Ages 5 through 22; Level 1 (grades K through 1) and Level 2 (grades 2 through 12)

Subtest Information: The test's six subtests include:

- *General Information*—This subtest has 100 open-ended questions that are presented orally. They measure the student's factual knowledge related to science, social studies, humanities, fine art, and recreation.
- *Reading Recognition*—There are 100 items. Items 1 through 16 are multiple choice and measure prereading skills. Items 17 through 100 measure decoding skills and require the student to read aloud individually presented words.
- *Reading Comprehension*—This subtest consists of 82 items and measures the student's ability to draw meaning from printed sentences.
- *Spelling*—Items 1 through 15 are multiple-choice tasks that assess reading skills. Items 16 through 100 require the student to select from four possible choices the correct spelling of a word read orally by the examiner.
- *Written Expression*—This subtest has two levels. Level 1 consists of 19 copying and dictation items that are arranged in order of ascending difficulty. In Level 2, the child is presented with one or two picture plates and given 20 minutes to write a story about the picture.
- *Mathematics*—In this subtest, the student is asked the question orally and must select the correct response from four choices. Questions cover topics ranging from numerical recognition to trigonometry.

Wechsler Individual Achievement Test–3rd Edition (WIAT-III)

Author: David Wechsler

Description of Test: The WIAT-III is a comprehensive academic achievement test that measures listening, speaking, reading, writing, and mathematics skills. The WIAT-III is suitable for use in a variety of clinical, educational, and research settings, including schools, clinics, private practices, and residential treatment facilities. WIAT III results can be used to: identify the academic strengths and weaknesses of a student; inform decisions regarding eligibility for educational services, educational placement, or diagnosis of a specific learning disability; and design instructional objectives and plan interventions.

Administration Time: Varies by grade level and number of subtests administered

Age/Grade Levels: Ages 4–50–11

Subtest Information: The WIAT-III consists of the following subtests:

Listening Comprehension: The student listens to vocabulary words and points to a picture that illustrates each word, and then listens to passages and answers questions about each one.

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Oral Expression: The student is shown pictures and is asked to name the concept shown in each picture. Then the student says words from a given category and repeats sentences.

Reading Comprehension: The student reads passages aloud or silently under un-timed conditions, and then answers open-ended questions about each one.

Word Reading: The student reads aloud a list of increasingly difficult words.

Pseudoword Decoding: The student reads aloud a list of increasingly difficult nonsense words.

Oral Reading Fluency: The student reads passages aloud, and then orally responds to comprehension questions.

Sentence Composition: The student combines the information from two or three sentences into single sentences that mean the same thing, and then the student writes meaningful sentences that use specific words.

Essay Composition: The student writes an essay within a 10-minute time limit.

Spelling: The student writes single words that are dictated within the context of a sentence.

Math Problem Solving: Depending upon the grade and ability level of the student, the student solves untimed math problems related to basic skills (counting, identifying shapes, etc.), everyday applications (time, money, word problems, etc.), geometry, and algebra.

Numerical Operations: Depending upon the grade and ability level of the student, the student solves untimed written math problems in the following domains: basic skills, basic operations with integers, geometry, algebra, and calculus.

Math Fluency—Addition: The student solves written addition problems within a 60 second time limit.

Math Fluency—Subtraction: The student solves written subtraction problems within a 60-second time limit.

Math Fluency—Multiplication: The student solves written multiplication problems within a 60-second time limit.

Wide Range Achievement Test–4th Edition (WRAT4)

Authors: Gary S. Wilkinson and Gary J. Robertson

Description of Test: The WRAT4 is a norm-referenced test that measures the basic academic skills of word reading, sentence comprehension, spelling, and math computation. It was standardized on a representative national sample of over 3,000 individuals ranging in age from 5 to 94 years. The normative sample was selected according to a stratified national sampling procedure with proportionate allocation controlled for age, gender, ethnicity, geographic region, and parental/obtained education as an index of socioeconomic status. Alternate forms, designated the Blue Form and the Green Form, were developed and equated during standardization by use of a commonperson research design. Derived scores were developed for both age- and grade-referenced groups. Standard scores, percentile ranks, stanines, normal curve equivalents, grade equivalents, and Rasch ability scaled scores are provided.

The Blue Form and the Green Form can be used interchangeably with comparable results, thus permitting retesting within short periods of time without the potential practice effects that may occur from repeating the same items. The alternate forms also can be administered together (i.e., Combined Form) in a single examination. For those interested in a more qualitative assessment of academic skills, the Combined Form provides an additional opportunity for performance observance.

Administration Time: Approximately 15 to 25 minutes for individuals ages 5 to 7 years; approximately 35 to 45 minutes for individuals ages 8 years and older

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Age/Grade Levels: Ages 5 through Adult

Subtest Information:

- *Word Reading*—Measures letter and word decoding through letter identification and word recognition.
- *Sentence Comprehension*—Measures an individual’s ability to gain meaning from words and to comprehend ideas and information contained in sentences through the use of a modified cloze technique.
- *Spelling*—Measures an individual’s ability to encode sounds into written form through the use of a dictated spelling format containing both letters and words.
- *Math Computation*—Measures an individual’s ability to perform basic mathematics computations through counting, identifying numbers, solving simple oral problems, and calculating written mathematics problems.

In addition to providing derived scores and interpretive information for the subtests, the WRAT4 yields a Reading Composite score, obtained by combining the Word Reading and Sentence Comprehension standard scores.

Woodcock Johnson IV Tests of Achievement (WJ IV ACH)

Authors: Richard W. Woodcock, Kevin S. McGrew, Schrank, Frederick A. and Nancy Mather

Description of Test: The WJ IV ACH is a broad-scope assessment system used for individual evaluation of academic achievement. The WJ IV ACH includes 20 tests for measuring four broad academic domains: reading, written language, mathematics, and academic knowledge. There are three Standard Battery forms of the WJ IV ACH Tests of Achievement (Form A, Form B, and Form C). A single form of the Extended Battery can be used with any of the three forms of the Standard Battery.

Administration Time: Varies, about 5 minutes per test (approximately 60 to 70 minutes)

Age/Grade Levels: Ages 2 to 90+; Grades K–12, college

Subtest Information: The 20 subtests of the WJ IV ACH are:

Standard Battery

- *Letter-Word Identification*—Measures the ability to identify letters and words in isolation
- *Applied Problems*—The student solves word problems.
- *Spelling*—The student is required to spell words that are dictated to him or her.
- *Passage Comprehension*—Measures the ability to read a short passage and to identify the missing word
- *Calculation*—Assesses the ability to solve mathematical calculations using a booklet in which the student can respond in writing.
- *Writing Samples*—The student is required to write sentences based on prompts from the examiner.
- *Word Attack*—Assesses a student’s ability to apply phonics and instructional analysis skills using nonsense words
- *Oral Reading*—Provides a standardized assessment of oral reading performance that increases the scope of reading fluency assessment

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- *Sentence Reading Fluency*-Requires the student to read printed statements and indicate whether they are true or false
- *Math Facts Fluency*- Number fact problems are given to the student, who must solve them in 3 minutes.
- *Writing Fluency*—The student must create and write simple sentences.

Extended Battery

- *Reading Recall*—Assesses reading comprehension in a format that closely parallels classroom reading comprehension tasks.
- *Number Matrices*—Assesses mathematics problem solving in a matrix reasoning format
- *Editing*-Measures the ability to correct errors in written passages.
- *Word Reading Fluency*—Evaluates the reading rate of the student
- *Spelling of Sounds*- Assesses knowledge of letter combinations that form regular patterns in written English.
- *Reading Vocabulary*- Assesses the ability to supply one-word synonyms and antonyms after reading words
- *Science*-The examiner reads questions to the student about topics pertaining to science and the student answers them orally.
- *Social Studies*-The examiner reads questions to the student about topics pertaining to social studies and the student answers them orally.
- *Humanities*-The examiner reads questions to the student about topics pertaining to the humanities and the student answers them orally.

Test of Academic Achievement Skills–Revised (TAAS-R)

Author: Morrison F. Gardner

Description of Test: The TAAS-R measures a child’s reading, arithmetic, and spelling skills. It is an excellent tool for diagnosing learning disabilities when used in conjunction with other standardized tests.

Administration Time: 15 to 25 minutes

Age/Grade Levels: Ages 5 through 15

Subtest Information: The revision of the Test of Academic Achievement Skills has strengthened all of the original subtests and includes a new subtest—*Oral Reading Stories and Comprehension*. *In addition to the new subtest, the revision includes the following subtests:*

- *Spelling*—Students write letters and words from dictation.
- *Letter Reading and Word Reading*— Students decipher and pronounce letters and words.
- *Listening Comprehension*—Students listen to stories, understand, and remember in order to answer questions about the stories.
- *Oral Reading Stories and Comprehension*
- *Arithmetic*—This subtest consists of word problems and computation.

Hamill Multiability Achievement Test (HAMAT)

Authors: Donald D. Hammill, Wayne P. Hresko, Jerome J. Ammer, Mary E. Cronin, and Sally S. Quinby

Description of Test: The HAMAT is designed for use by psychologists, educational diagnosticians, counselors, and other professionals concerned with the assessment of academic achievement.

Administration Time: 30 to 60 minutes

Age/Grade Levels: Ages 7 through 17

Subtest Information: The HAMAT consists of the following subtests:

- *Reading*—This subtest consists of a series of paragraphs based on the cloze procedure.
- *Writing*—Students write sentences from dictation, stressing correctness.
- *Mathematics*—This subtest measures students' mastery of number facts and ability to complete mathematical calculations.
- *Facts*—Students answer questions based on the content of social studies, science, history, and literature.

Diagnostic Achievement Battery-4th edition (DAB-4)

Authors: Phyllis Newcomer

Description of Test: The DAB-4 is a revision of one of the most popular individual achievement tests available. Its 8 subtests identify students' strengths and weaknesses across important areas of school achievement. A supplemental manual shows how to probe student responses to obtain information about students' thinking processes and problem-solving strategies. The DAB-4 has four primary uses. It can be used to (1) identify students who are significantly below their peers in basic academic skills, (2) determine the particular kinds of component strengths and weaknesses that individual students possess, (3) document students' progress in specific areas as a consequence of special intervention programs, and (4) conduct research studies of academic achievement.

Administration Time: 90 to 120 minutes

Age/Grade Levels: Ages 6-0 through 14-11

Subtest Information: The DAB-4 has now been pared to eight subtests instead of 14 to shorten administration time:

- *Listening Comprehension*
- *Synonyms*
- *Alphabet/Phonics/Word Identification*
- *Reading Comprehension*
- *Punctuation/Capitalization*
- *Spelling*
- *Mathematics Reasoning*
- *Mathematics Calculation*