

Essentials

of DAS-II[®] Assessment

Ron Dumont

John O. Willis

Colin D. Elliott



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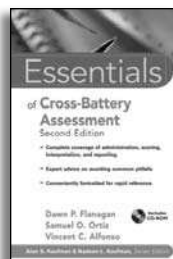
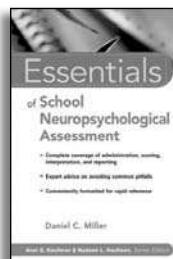
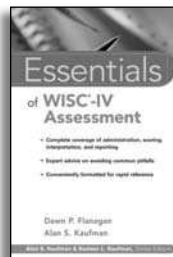
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*To Marybeth and Kate,
Thank you both for always being supportive of my projects.
I couldn't, and wouldn't be able to do any of them without you.
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*To Ursula,
with all my love for all time and with deep gratitude, appreciation,
and admiration. You make everything possible and worthwhile.
John*

*To Marian,
With love and thanks for your unfailing and loving encouragement over
many years, and for your support once more during this project.
Colin*

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SERIES PREFACE

In the *Essentials of Psychological Assessment* series, we have attempted to provide the reader with books that will deliver key practical information in the most efficient and accessible style. The series features instruments in a variety of domains, such as cognition, personality, education, and neuropsychology. For the experienced clinician, books in the series will offer a concise yet thorough way to master utilization of the continuously evolving supply of new and revised instruments, as well as a convenient method for keeping up to date on the tried-and-true measures. The novice will find here a prioritized assembly of all the information and techniques that must be at one's fingertips to begin the complicated process of individual psychological diagnosis.

Wherever feasible, visual shortcuts to highlight key points are utilized alongside systematic, step-by-step guidelines. Chapters are focused and succinct. Topics are targeted for an easy understanding of the essentials of administration, scoring, interpretation, and clinical application. Theory and research are continually woven into the fabric of each book, but always to enhance clinical inference, never to sidetrack or overwhelm. We have long been advocates of what has been called *intelligent testing*—the notion that a profile of test scores is meaningless unless it is brought to life by the clinical observations and astute detective work of knowledgeable examiners. Test profiles must be used to make a difference in the child's or adult's life, or why bother to test? We want this series to help our readers become the best intelligent testers they can be.

The *Essentials of DAS-II Assessment* is designed to be a helpful reference to all examiners, whether they have prior experience with the DAS or are just learning the DAS-II. Weaving expert guidance throughout to help the reader avoid common examiner errors, the authors offer guidance on the test's administration, scoring, and interpretation to assist examiners in building their compe-

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We thank Dr. Gloria Maccow, Clinical Measurement Consultant for The Psychological Corporation, for contributing one of the case studies in Chapter 8. Our present and past colleagues and graduate students have contributed greatly to our thinking and—such as they are—our explanatory powers. We sincerely thank them. One graduate student in particular, Joseph Salerno, must

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tency with the DAS-II. This volume is also packaged with an accompanying CD-ROM, which contains several Microsoft Word and Excel files along with several Adobe PDF files. Many of the Word files can be opened so the user can add DAS-II evaluation results to them. Other Word files can be printed out to use as appendices to evaluation reports. The CD-ROM also contains an Excel spreadsheet file (labeled “DAS-II Computer Assistant”), designed to facilitate and automate the analysis and interpretation of obtained data.

Alan S. Kaufman, PhD, and Nadeen L. Kaufman, EdD, Series Editors
Yale University School of Medicine

OVERVIEW

The Differential Ability Scales–Second Edition (DAS-II; Elliott, 2007a), developed and standardized in the United States, is a modern psychological assessment instrument with a longer history than its publication date would suggest (see Rapid Reference 1.1). It is based upon its predecessor, the Differential Ability Scales (DAS; Elliott, 1990a, 1990b), which had as its origin the British Ability Scales (BAS; Elliott, 1983). As its name suggests, the DAS-II was developed with a primary focus on specific cognitive abilities rather than on general “intelligence.”

STRUCTURE OF THE DAS

The DAS-II consists of a cognitive battery of 20 subtests, covering an age range of 2 years, 6 months through 17 years, 11 months (2:6 through 17:11). The battery is divided into two overlapping age levels: (1) The Early Years battery is normed from age 2:6 through 8:11, with a usual age range of 2:6 through 6:11; (2) The School-Age battery is normed from age 5:0 through 17:11, and has a usual age range of 7:0 through 17:11. With those overlaps between the Early Years and the School Age batteries, it will be seen that the DAS-II Early Years and School-Age batteries were conormed for children ages 5:0 through 8:11 and therefore have a four-year normative overlap. (See Rapid Reference 1.2 for a description of the DAS-II subtests.)

The Early Years battery is further divided into two levels, lower and upper. The Lower Early Years level is most appropriate for young children ages 2:6 through 3:5, although it may also be used with older children with special needs. The Upper Early Years level is suitable for children normally in the age range of 3:6–6:11, although it may also be used with children up to age 8:11 if they have difficulty with the materials in the School-Age battery.

The DAS-II battery yields a composite score called General Conceptual

Rapid Reference 1.1

DAS-II Batteries

Author: Colin Elliott

Publication date: 2007

What the test measures: Verbal (*Gc*), Nonverbal Reasoning (*Gf*), Spatial (*Gv*), Working Memory (*Gsm*), Processing Speed (*Gs*), Phonological Processing (*Ga*), Recall of Objects (*Glr*), and General Conceptual Ability (GCA), which is a measure of the general factor *g*.

Age range: 2:6–17:11

Average Administration time: Six core subtests to obtain three clusters and GCA score = 31–40 minutes. Diagnostic subtests—School Readiness = 17 minutes, Working Memory = 12 minutes, Processing Speed = 9 minutes, Phonological Processing = 10 minutes.

Qualification of examiners: Graduate- or professional-level training in psychological assessment

Computer program: Scoring program included as well as a CD, which includes help in administering the Phonological Processing subtest and also useful demonstrations of administering the test using American Sign Language.

Publisher: The Psychological Corporation
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 555 Academic Court
 San Antonio, TX 78204-2498
 Ordering phone number: 800-211-8378
<http://www.psychcorp.com>
 Web site: www.DAS-II.com

Rapid Reference 1.2

DAS-II Subtests

Verbal Subtests

- *Verbal Comprehension:* following oral instructions to point to or move pictures and toys.
- *Naming Vocabulary:* naming pictures.
- *Word Definitions:* explaining the meaning of each word. Words are spoken by the evaluator.
- *Verbal Similarities:* explaining how three things or concepts go together, what they all are (e.g., house, tent, igloo; love, hate, fear)

Nonverbal Reasoning Subtests

- *Picture Similarities*: multiple-choice matching of pictures on the basis of relationships, both concrete (e.g., two round things among other shapes) and abstract (e.g., map with globe from among other round things). [Nonverbal Cluster in Lower Early Years battery]
- *Matrices*: solving visual puzzles by choosing the correct picture or design to complete a logical pattern.
- *Sequential and Quantitative Reasoning*: figuring out sequential patterns in pictures or geometric figures, or common rules in numerical relationships.

Spatial Subtests

- *Copying*: drawing pencil copies of abstract, geometric designs.
- *Recall of Designs*: drawing pencil copies of abstract, geometric designs from memory after a five-second view of each design.
- *Pattern Construction*: imitating constructions made by the examiner with wooden blocks, copying geometric designs with colored tiles or patterned cubes. There are time limits and bonus points for fast work. An alternative, “untimed” procedure uses time limits but no speed bonuses. [Nonverbal Cluster in Lower Early Years battery]

Diagnostic Subtests

- *Early Number Concepts*: oral math questions with illustrations—counting, number concepts, and simple arithmetic.
- *Matching Letter-Like Forms*: multiple-choice matching of shapes that are similar to letters.
- *Recall of Digits Forward*: repeating increasingly long series of digits dictated at two digits per second.
- *Recall of Digits Backward*: repeating, in reverse order, increasingly long series of digits dictated at two digits per second.
- *Recognition of Pictures*: seeing one, two, or three pictures for five seconds or four pictures for ten seconds and then trying to find those pictures within a group of four to seven similar pictures.
- *Recall of Objects—Immediate*: viewing a page of 20 pictures, hearing them named by the evaluator, trying to name the pictures from memory, seeing them again, trying again to name all the pictures, and repeating the process once more. The score is the total of all the pictures recalled on each of the three trials, including pictures recalled two or three times.
- *Recall of Objects—Delayed*: trying to recall the pictures again on a surprise retest 15 to 20 minutes later.
- *Speed of Information Processing*: the student scans rows of figures or numbers and marks the figure with the most parts or the greatest number in each row. The score is based on speed. Accuracy does not count unless it is very poor.
- *Phonological Processing*: rhyming, blending sounds, deleting sounds, and identifying the individual sounds in words.
- *Rapid Naming*: naming colors or pictures as quickly as possible without making mistakes. The score is based on speed and accuracy.
- *Recall of Sequential Order*: sequencing, from highest to lowest, increasingly long series of words that include body parts, and for more difficult items, non-body parts.

Ability (GCA), which provides an estimate of overall reasoning and conceptual abilities. In addition, for ages 3:6 to 17:11, a Special Nonverbal Composite (SNC) is available and derived from the nonverbal core subtests appropriate for each battery level. The DAS-II also provides lower-level composite scores called *cluster scores* that are derived from highly *g*-saturated core subtests. Finally, there are numerous diagnostic subtests and clusters that measure other specific abilities. These diagnostic subtests do not contribute to the GCA or SNC, but give additional information about cognitive strengths and weaknesses. The overall structure is summarized in Figure 1.1.

Battery	Usual Age Range	Full Normative Age Range
Lower Early Years	2:6 – 3:5	2:6 – 8:11
Core Clusters		
GCA		
Verbal		
Nonverbal		
Upper Early Years	3:6 – 6:11	3:6 – 8:11
Core Clusters		
GCA		
Special Nonverbal Composite		
Verbal		
Nonverbal Reasoning		
Spatial		
Diagnostic Clusters		
School Readiness		
Working Memory		
Processing Speed		
School Age	7:0 – 17:11	5:0 – 17:11
Core Clusters		
GCA		
Special Nonverbal Composite		
Verbal		
Nonverbal Reasoning		
Spatial		
Diagnostic Clusters		
Working Memory		
Processing Speed		

Figure 1.1 DAS-II Clusters by Battery

THEORETICAL UNDERPINNINGS

The DAS-II was not developed solely to reflect a single model of cognitive abilities but was designed to address processes that often underlie children's difficulties in learning and what scientists know about neurological structures underlying these abilities. The selection of the abilities to be measured by the DAS-II was influenced by a variety of theoretical points of view, but the end result is consistent with *Gf-Gc* theory (now commonly referred to as the Cattell-Horn-Carroll theory, or simply CHC). This is probably the best known and most widely accepted theory of intellectual factors among practitioners of individual psychological assessment and is derived from the Horn-Cattell *Gf-Gc* model [e.g., Cattell (1941, 1971, 1987), Cattell & Horn (1978), Horn (1988, 1991), Horn & Noll (1997)]. *Gf* and *Gc* refer, respectively, to "fluid" and "crystallized" intelligence, but current versions of the theory recognize as many as seven different broad cognitive factors or abilities. See Carroll (1993); Flanagan and McGrew (1997); Flanagan, McGrew, and Ortiz (2000); Flanagan and Ortiz (2001); Flanagan, Ortiz, and Alfonso (2007); Flanagan, Ortiz, Alfonso, and Mascolo (2002); Horn (1985, 1988, 1991); Horn and Cattell (1966); Horn and Noll (1997); McGrew (1997); McGrew and Flanagan (1998); Woodcock (1990); and Woodcock and Mather (1989) for discussions of *Gf-Gc*, now usually called the Cattell-Horn-Carroll (CHC) theory. Carroll's monumental (1993) review and re-analysis of hundreds of factor analytic studies of many psychological tests provided a solid empirical foundation for CHC theory. The factor structure that Carroll devised on the basis of his research was remarkably congruent with the theoretical structure developed by Cattell and Horn (1978; Horn, 1988, 1991), which lent further credence to the amalgamated CHC theory as subsequently developed by Woodcock, McGrew, Flanagan, and others [e.g., Flanagan & McGrew (1997); Flanagan, McGrew, & Ortiz (2000); Flanagan & Ortiz (2001); Flanagan, Ortiz, & Alfonso (2007); Flanagan, Ortiz, Alfonso, & Mascolo (2002); Horn (1991); McGrew (1997); McGrew & Flanagan (1998); McGrew, Werder, & Woodcock (1991); Woodcock (1990, 1993); and Woodcock & Mather (1989)]. However, even with a growing consensus as to the nature and structure of human cognitive abilities, there remains substantive debate regarding the number of factors representing independent abilities in a cognitive model, the precise nature of each of those factors (Horn & Blankson, 2005; Carroll, 2005), and to what extent, if any, subtests from different test batteries that purport to measure a given factor actually do so (Alfonso, Flanagan, & Radwan, 2005).

Despite the fact that no single theory or model has universal acceptance, there is a common core of theory and research that supported the development of the

DAS-II. Such research indicates that human abilities are complex and often are not best explained solely in terms of a single cognitive factor (g), or even in terms of several lower-order factors. These abilities are presented as multiple dimensions on which individuals show reliably observable differences, and are related to how children learn, achieve, and solve problems. Although these abilities are interrelated, they do not completely overlap, thus making many of them distinct (Carroll, 1993). The wide range of human abilities represents a number of inter-linked subsystems of information processing that have structural correlates in the central nervous system, in which some functions are distinct and others are integrated. Some formulations of CHC theory (e.g., Carroll, 1993, 2005) include an overarching, single factor, g , at the top of the hierarchy. Others (e.g., Horn, 1991; Horn & Blankson, 2005) dispute the importance, or even the existence, of a single, overall level of cognitive ability and emphasize the importance of the separate abilities. Yet others (e.g., Flanagan & McGrew, 1997; Flanagan, McGrew, & Ortiz, 2000) do not take a rigid stand on the question of an overall g , but operationalize the theory on the basis of the separate factors. All of these versions of CHC theory maintain at least two strata of abilities: several broad abilities each including several narrow abilities. In the three-stratum model (e.g., Carroll, 2005), the narrow abilities are called Stratum I, the broad abilities Stratum II, and g , at the top of the hierarchy, Stratum III.

Flanagan and McGrew (1997); Flanagan, McGrew, and Ortiz (2000); Flanagan and Ortiz (2001); Flanagan, Ortiz, and Alfonso (2007); Flanagan, Ortiz, Alfonso, and Mascolo (2002); Horn (1991); McGrew (1997); McGrew and Flanagan (1998); McGrew, Werder, and Woodcock (1991); Woodcock (1990, 1993); and Woodcock and Mather (1989) have adopted a notation system, largely based on that of Carroll (1993). Symbols for broad (Stratum II) abilities are written with a capital G and italicized, lowercase letters (e.g., Ga is auditory processing, and Glr is long-term storage and retrieval). Symbols for narrow (Stratum I) abilities within the various broad abilities are usually written with one or two capital letters or a capital letter and a digit (e.g., SR is spatial relations within Gv , I is induction within Gj , and K1 is general science information within Gc). Other notations are used occasionally (e.g., PC:A and PC:S are, respectively, phonetic coding: analysis and phonetic coding: synthesis). Several similar, but not identical, verbal labels are given to the abilities (e.g., Gv has been called “visual processing,” “visual/spatial processing,” and “visual/spatial thinking”), so the more-or-less agreed-upon symbols function as a valuable common notation with less risk of misunderstanding.

The following section outlines some links between the DAS-II ability constructs and neuropsychological structures in the areas of verbal and spatial

abilities, fluid reasoning abilities, several aspects of memory, and processing speed.

Broad Verbal and Spatial Abilities

The DAS-II Verbal and Spatial ability clusters reflect major systems through which individuals receive, perceive, remember, and process information. Both systems are linked to auditory and visual modalities and factorially represent verbal [crystallized intelligence (Gc)] and visual [visual-spatial (Gv)] thinking.

Neuropsychologically, there is strong evidence for the existence of these systems. They tend to be localized in the left and right cerebral hemispheres, respectively, although the localization is complicated (see, for example, Hale & Fiorello, 2004, pp. 67–78) and there are individual differences in areas of localization of function. Moreover, the systems are doubly dissociated—that is, they represent two distinct, independent systems of information processing (McCarthy & Warrington, 1990; Springer & Deutsch, 1989). The systems are independent insofar as each one may remain intact if the other is damaged. In the DAS-II, the two factors (verbal and spatial) are measured by the Verbal and Spatial clusters in both the Early Years and School-Age batteries.

Crystallized ability (Gc) refers to the application of acquired knowledge and learned skills to answering questions and solving problems presenting at least broadly familiar materials and processes. Virtually all tests of Gc are verbal, as that is the nature of many crystallized tasks: language is the primary means by which we express and use acquired knowledge. Most verbal subtests of intelligence scales primarily involve crystallized intelligence. Subtests of general knowledge and vocabulary are relatively pure measures of crystallized intelligence. The overlap between crystallized intelligence and verbal information processing is indeed so strong that we believe that the meaning of the factor and the test scores that measure it is best expressed as “Verbal,” as in the DAS-II cluster score.

We note here that within the area of auditory-verbal processing there are distinctions that have to be made between different types of cognitive processes. Most of the tasks that are included under the Gc factor are concerned with verbal knowledge (including vocabulary), comprehension of single or multiple sentences, and verbal reasoning. All these are relatively high-level cognitive tasks, requiring complex processing, analysis of meaning, and retrieval of information that has been stored in long-term verbal memory. In contrast, there are other verbal factors that require immediate, less complex verbal processing. *Auditory short-term memory* (Gsm) is measured by tasks that entail repeating words that have been heard, with little or no processing of the meaning of the words themselves.

We can characterize this as relatively simple information processing. Similarly, *auditory processing ability* (G_a) is measured by tasks that require the individual to analyze the component sounds of words that are presented. Again, such tasks do not require the meaning of those words to be an important component of the task. Both G_{sm} and G_a will be discussed below.

Visual-spatial thinking (G_v) involves a range of visual processes, ranging from fairly simple visual perceptual tasks to higher level, visual, cognitive processes. Woodcock and Mather (1989) define G_v in part: “In Horn-Cattell theory, ‘broad visualization’ requires fluent thinking with stimuli that are visual in the mind’s eye. . . .” Although G_v tasks are often complex and mentally challenging, G_v primarily relies on visual processing that involves the perception of and ability to visualize mental rotations and reversals of visual figures. It is not dependent on the ability of the individual to use internal verbal language to help solve problems.

Again, we note at this point that not all “nonverbal” tasks measure G_v . Because we have stipulated the condition (which is borne out by factor-analytic research) that G_v tasks are not dependent upon the ability of the individual to use internal language in solving a problem, it follows that tasks that require this are measuring a different cognitive process. G_v tasks do not include the aspect of dealing with novel stimuli or applying novel mental processes, or using internal language to reason out the solution to a visually-presented problem, all of which characterize G_f tasks. This will be discussed below in the section on Integration of Complex Information Processing.

Auditory Processing Ability: Is it a Component of Verbal Ability?

It should be noted that Horn and Carroll both accepted that there is a separate factor of auditory processing (G_a) that is distinct from the verbal or G_c information processing system. Auditory processing is concerned with the analysis of sound patterns such as in speech sounds, rhythm, and sequences of sounds (Carroll, 2005; Horn & Blankson, 2005). Auditory processing ability is certainly related to the development of complex higher-order language skills. It is necessary but not sufficient for language development. It seems reasonable to suppose that auditory processing is mediated by a separate processing system that handles the analysis of auditory sensory input, and because of this, children with hearing impairment are likely to have difficulties with G_a tasks.

In the DAS-II, auditory processing (G_a) is measured by the Phonological Processing subtest, comprising four distinct components: Rhyming, Blending, Deletion, and Phoneme Identification and Segmentation.

Integration of Complex Information Processing

For normal cognitive functioning, the verbal and visual-spatial abilities operate as an integrated information processing system that is necessary for complex mental activity. Factorially, this integrative system is represented by the *fluid reasoning* (Gf) ability. Fluid reasoning refers to inductive and deductive reasoning, presenting problems that are new to the person doing the reasoning. The vast majority of fluid reasoning tests use nonverbal (that is, visual) stimuli using pictures or figures. These require an integration of verbal and nonverbal thinking. Indeed, it seems likely that the best measures of Gf always require integrated analysis of both verbal and visual information. This is achieved through the presentation of visual problems that, for most efficient solution, require the individual (1) to encode the components of the visual stimulus, (2) to use internal language to generate hypotheses, (3) to test the hypotheses, and (4) to identify the correct solution.

Neuropsychologically, it seems that the integrative function of frontal lobe systems is central to executive function, which is involved in planning and other complex mental processes (Hale & Fiorello, 2004, pp. 64–67; Luria, 1973; discussed by McCarthy & Warrington, 1990, pp. 343–364), and it is therefore reasonable to hypothesize that it may provide a structural correlate for Gf . Similarly, it is clear that the corpus callosum has a major role in connecting the right and left cerebral hemispheres, and that limitations in callosal transmission may be implicated in cases of poor visual-verbal integration. Whatever the localization of specific mechanisms may be, the fact that our brains have an integrative function seems incontrovertible. The best tests of Gf require that integrative process.

In the DAS-II, the Gf factor is measured in the Upper Early Years and School-Age batteries by the Nonverbal Reasoning cluster.¹ The subtests measuring this ability require integrated analysis and complex transformation of both visual and verbal information, and verbal mediation is critical for the solution of these visually presented problems for most individuals.

¹In the Lower Early Years battery (ages 2:6 through 3:5 only), fluid reasoning (Gf) and visual-spatial thinking (Gv) are measured by one subtest each. The Nonverbal cluster combines these two subtests. Therefore the factors are only differentiated at the subtest level and not at the cluster level.

Short-Term Memory (Verbal and Visual) Systems

Short-term memory (*Gsm*) refers to one's ability to apprehend and maintain awareness of elements of information for events that occurred in the last minute or so. *Gsm* refers to aspects of memory that have limited capacity and that lose information quickly unless an individual activates other cognitive resources to maintain the information in immediate awareness. CHC theory does not distinguish, at the second-order, group factor level, between separate, modality-related visual and verbal memory systems. At the broad factor level there is only a single short-term memory factor (*Gsm*) that should really be called *auditory* short-term memory.

Because of evidence from both cognitive psychology and neuropsychology that shows clearly that verbal and visual short-term memory systems are distinct and independent (Hitch, Halliday, Schaafstal, & Schraagen, 1988; McCarthy & Warrington, 1990, pp. 275–295), the DAS-II does not treat short-term memory as unitary but keeps auditory and visual short-term memory tasks as distinct measures. Additionally, several subtests combine to create a working memory (*Gsm* MW) factor that is separate from auditory short-term memory (*Gsm* MS), as measured by the Recall of Digits Forward subtest, *and* the visual short-term memory (*Gv* MV) abilities measured by the Recall of Designs and Recognition of Pictures subtests.

Integration of Verbal and Visual Memory Systems

The *long-term storage and retrieval* (*Glr*) factor in the CHC model is typically measured by tests that have both visual and verbal components. *Long-term storage and retrieval* ability involves memory storage and retrieval over longer periods of time than *Gsm*. How much longer varies from task to task, but it is typically of the order of 1 to 30 minutes.

McCarthy and Warrington (1990, p. 283) call this “visual–verbal” short-term memory and conclude that it is underpinned by another distinct and independent, dissociable information-processing system. While its relationship with other processes is relatively small, it may be an important type of “gateway” process underlying some types of working memory. Holding information in visual-verbal short-term memory may be necessary in order to solve problems that require the manipulation and transformation of visual information that can be labeled verbally.

In the DAS-II, the visual-verbal memory factor (*Glr*) is measured by the Recall of Objects subtest. In this task, an array of pictures is presented, but they have

to be recalled verbally. Sequential order is not important, and the child is able to organize and associate pictures in any way that helps in remembering them.

Processing Speed

The DAS-II Processing Speed cluster measures the CHC *processing speed factor* (G_s). This factor refers to the ability to automatically and fluently perform relatively easy or over-learned cognitive tasks, especially when high mental efficiency (i.e., attention and focused concentration) is required. It is typically measured by tests that require relatively simple operations that must be performed quickly—speed of decision, speed of naming, clerical speed, and so on. These types of timed activities are more complex than those involved in simple reaction-time paradigms, which seem to form their own factor (G_t), a factor not assessed by the DAS-II, nor by most cognitive ability tests.

While individual differences in neural speed may be one of the determinants of performance on processing speed tasks, it is clear that other determinants are involved. Speed of response may reflect not only neural speed but also perhaps efficiency in accessing information, efficiency in holding information in short-term memory, efficiency in visual-verbal integration, and willingness to commit to a decision and threshold for doing so. Performance on G_s tasks is not easily improved with practice. Prior experience on similar tasks is unlikely to be helpful. Therefore, measures on such tasks do reflect some function of the underlying speed and efficiency of processing systems.

DESCRIPTION OF DAS-II

The Differential Ability Scales—Second Edition (DAS-II; Elliott, 2007a) is an individually administered battery of cognitive tests for children and adolescents aged 2 years, 6 months (2:6) through 17 years, 11 months (17:11). Because the DAS-II covers such a wide age range, it is divided into three levels: Lower Early Years (ages 2:6 through 3:5); Upper Early Years (normally covering ages 3:6 through 6:11, but normed through 8:11); and School-Age (normally covering ages 7:0 through 17:11, but also normed for ages 5:0 through 6:11). The three levels allow both items and clusters that are appropriate to the several age ranges. It was designed to measure specific, definable abilities and to provide reliable, interpretable profiles of strengths and weaknesses. These profiles may lead to individualized interventions or treatments for students with learning concerns or issues. The DAS-II is considered suitable for use in any setting in which the cognitive abilities of children and adolescents are to be evaluated, although sev-

CAUTION

Several of the DAS-II subtests may not be appropriate for students with severe sensory or motor disabilities.

eral of the DAS-II subtests may not be appropriate for students with severe sensory or motor disabilities. The DAS-II cognitive battery yields a composite score labeled *General Conceptual Ability* (GCA) that is a measure of psychometric *g*, defined

as “the general ability of an individual to perform complex mental processing that involves conceptualization and transformation of information” (Elliott, 2007b, p. 17).

Organization of the DAS-II

The DAS-II contains a total of 20 subtests grouped into *Core* or *Diagnostic* subtests. The *Core* subtests are those used to compute the GCA and three cluster scores: Verbal Ability, Nonverbal Reasoning Ability, and Spatial Ability. The *Diagnostic* subtests measure aspects of memory, speed of processing and early concepts taught in schools. They yield three cluster scores: Processing Speed, Working Memory, and School Readiness. These diagnostic subtests are considered important and useful in the interpretation of an individual’s strengths and weaknesses in information processing, but they do not contaminate the GCA with subtests that have low *g* loadings.

This separation of Core and Diagnostic subtests is one of the strengths of the DAS-II. For a point of comparison, the Wechsler Intelligence Scale for Children, 4th ed. (WISC-IV; Wechsler, 2003) excludes the Information, Word Reasoning, Arithmetic, Picture Completion, and Cancellation subtests from the FSIQ and Indices, but does include in the IQs subtests such as Coding and Symbol Search, which are not good measures of complex mental processing or intellectual ability

(*g*). The Stanford-Binet Intelligence Scale, 5th ed. (SB5; Roid, 2003) includes all subtests in the total score. The Woodcock-Johnson III Cognitive battery (WJ III; Woodcock, McGrew, & Mather, 2001) includes low-*g*-loading tests, but only in proportion to their *g* loading

DON'T FORGET

The separation of the DAS-II into *Core* and *Diagnostic* subtests can be helpful in reducing the overall administration time and a student’s fatigue since examiners can tailor their assessments, administering only those subtests that are relevant based on the specific and different referral questions.

The Lower Early Years battery of the DAS-II consists of four core subtests that combine to yield the

GCA and three diagnostic subtests that may be administered. The Upper Early Years battery includes six core subtests and an additional 11 optional diagnostic subtests. The School-Age battery includes six core subtests and nine additional diagnostic subtests. Some of the Early Years subtests can also be used at the school-age level, especially at younger ages, for diagnostic purposes. For the Upper Early Years and the School-Age batteries, the subtests not only combine to produce the GCA but also yield five or six cluster scores. For Upper Early Years children, these cluster scores represent Verbal (Gc), Nonverbal Reasoning (Gf), and Spatial (Gv) abilities along with School Readiness, Working Memory (Gsm), and Processing Speed (Gr). For School-Age children, the cluster scores represent Verbal (Gc), Nonverbal Reasoning [(Gf) fluid reasoning (Keith, 1990)], and Spatial (Gv) abilities along with Working Memory (Gsm) and Processing Speed (Gr) (see Rapid Reference 1.2 and Figure 1.1). Although the “typical” Upper Early Years battery is given to children aged 3 years, 6 months through 6 years, 11 months and the “typical” School-Age battery to children 7 years, 0 months through 17 years, 11 months, the Upper Early Years and School-Age batteries were also normed for an overlapping age range (5 years, 0 months through 8 years, 11 months).

Normative Overlaps

Depending on the examinee’s age, if an examinee of low ability has little success at the ages covered by the battery you initially selected, you may be able to administer subtests from a lower level of the test. Conversely, if an examinee has high ability and has few failures at the ages covered by the battery you initially selected, you can administer subtests from a higher level of the test. All subtests at the Upper Early Years and School-Age Level have overlapping normative data for children ages 5:0 to 8:11. This overlap provides the examiner flexibility when testing bright younger children or less able older children. In these cases, subtests appropriate for the individual’s abilities are available. For example, the Upper Early Years subtests can be administered to children ages 6:0 to 8:11 for whom the School-Age Level is too difficult. Similarly, the School-Age subtests can be administered to children ages 5:0 to 6:11 for whom the Upper Early Years is insufficiently challenging. In such cases, the examinee’s raw scores can be converted to ability scores and then to T scores in the normal way.

DON'T FORGET

If a student has little success at the ages covered by the battery you initially selected, you may be able to administer subtests from a lower level of the test.

For children in the overlapping age range, examiners may choose to give either battery or choose one battery and administer additional subtests from the other battery.

Changes from DAS to DAS-II

Several goals were accomplished with the revision of the DAS to the DAS-II. Rapid Reference 1.3 lists the key features that were accomplished and changes made for this second edition.

In the DAS-II, many of the core subtests will be recognizable to DAS examiners, but there have been significant changes and modifications to some. For example, Block Building and Pattern Construction have been combined into one subtest; Recall of Digits has been expanded to two subtests: Recall of Digits–Forward and Recall of Digits–Backward; and Early Number Concepts has been

≡≡≡ Rapid Reference 1.3

DAS-II Key Revisions

- Updating of norms
- CHC interpretative basis now noted explicitly in manual and record form
- Development of three new Diagnostic Clusters (Working Memory, Processing Speed, School Readiness)
- Addition of four new subtests (Phonological Processing, Recall of Digits Backward, Recall of Sequential Order, Rapid Naming)
- Downward extension of Matrices subtest to age 3 years, 6 months, enabling the Nonverbal Reasoning cluster to be measured at the Early Years level.
- Core cluster scores (Verbal, Nonverbal Reasoning, Spatial) are now the same throughout the age range from 3:6 through 17:11
- Block Building and Pattern Construction combined into one subtest
- Revising content of 13 subtests
- Updating artwork
- Eliminating three achievement tests
- Linking DAS-II to the WIAT-II and providing correlational data also for the K-TEA-II and the WJ-III Achievement batteries
- Providing Spanish translation for nonverbal subtests
- Providing American Sign Language translation for nonverbal subtests in every kit for use by, and the training of, interpreters
- Publishing with Scoring Assistant computer software