

Use of the WISC-IV for Gifted Education

School districts use multi-faceted approaches to identify gifted students. Some states and districts employ comprehensive individual IQ tests as one of several identifiers. The most popular of these is the *Wechsler Intelligence Scale for Children, Fourth Edition* (WISC-IV) (Lubin, Wallis & Paine, 1971). Even in districts where IQ tests are not used in student selection, the WISC-IV is often administered when the parents appeal the decision to deny a child services.

Also, for twice exceptional children, the WISC-IV plays an important role in documenting the child's giftedness and learning deficits, as well as revealing the giftedness of children with expressive, physical, or other disabilities. In prior versions of the Wechsler scales, the child's Full Scale IQ score has been the primary determining factor in placement. However, the Full Scale IQ score of the WISC-IV often does not represent a child's intellectual abilities as well as the General Ability Index. Therefore, some guidelines for test interpretation are necessary.

This position statement is designed for school psychologists, coordinators of gifted programs, teachers, and all professionals who determine placements based on IQ scores or design services based on a child's strengths and weaknesses. It is also provided for parents so they can better understand the interpretation of their children's scores. It is not intended to narrow the choice of tests in the selection of gifted students, but to broaden the guidelines for use of the WISC-IV and prevents its use in a way that is disadvantageous to gifted children.

The WISC-IV was standardized on 2200 children, including Caucasians, African Americans, Hispanics, Asians, and others (a combined designation including Native Americans, Alaskan Natives, and other groups in the U.S.), in proportion to their distribution in the American population. Parental educational levels and geographic regions were also proportionately represented. In concert with the publishers' concerns for "Suitability and Fairness," greater flexibility is built into the administration of the WISC-IV: examiners are permitted to use appropriate substitutions of subtests when necessary for equitability (Wechsler, 2003). Nevertheless, IQ tests should be interpreted cautiously for children from culturally and linguistically diverse backgrounds, and for all children, and should never be the only basis for exclusion from gifted programs. In addition, all efforts should be made to accommodate linguistic diversity and test children in their native language.

The WISC-IV introduces important structural changes that compromise the relevance of the Full Scale IQ score (FSIQ) for gifted children. The Verbal and Performance IQ scores of earlier versions of the scale have been replaced by four Composite/Index scores on the WISC-IV: Verbal Comprehension, Perceptual Reasoning, Working Memory and Processing Speed. The weight of *processing skills* in the Full Scale IQ calculation has doubled, with a consequent reduction in the weight assigned to *reasoning* tasks (verbal, visual-spatial and mathematical). Testers of the gifted know that abstract reasoning tasks best identify cognitive giftedness, while processing skills measures do not. Gifted children with or without disabilities may be painstaking, reflective and perfectionistic on paper-and-pencil tasks, lowering their Processing Speed Index scores; to a lesser degree, they may struggle when asked to recall non-meaningful material (Digit Span, Letter-Number Sequencing), lowering their Working Memory Index, even though they excel on meaningful auditory memory tasks that pique their interest.

As a result, a majority of gifted children show considerable variability in their Composite/Index scores on the WISC-IV, a problem less often encountered in average children. When this occurs, WISC-IV Full Scale IQ scores for the gifted may be difficult to interpret and, in some cases, may be lowered sufficiently by processing skills to prevent gifted children from qualifying for needed programs.

It is recommended practice to derive the General Ability Index (GAI) when there are large disparities among the Composite/Index scores (Flanagan & Kaufman, 2004; Weiss, Saklofske, Prifitera & Holdnack, 2006). Flanagan and Kaufman (2004), in *Essentials of WISC-IV Assessment*, deem the FSIQ “not interpretable” if Composite scores vary by 23 points (1.5 standard deviations) or more. The GAI utilizes only scores from the Verbal Comprehension and Perceptual Reasoning Composites, not Working Memory and Processing Speed. If the Verbal Comprehension and Perceptual Reasoning Composite scores vary by less than 23 points, “the GAI may be calculated and interpreted as a reliable and valid estimate of a child’s global intellectual ability” (p. 128). Use of the GAI takes on special significance with the gifted. Verbal Comprehension and Perceptual Reasoning tasks are heavily loaded on abstract reasoning ability and are better indicators of giftedness than Working Memory (auditory memory that is manipulated) and Processing Speed (speed on paper-and-pencil tasks). Harcourt Assessments, publishers of the WISC-IV, provides GAI tables on its website in support of similar use of the GAI when the variance between Composite scores is both *significant* and *unusual* (see *Technical Report #4*).

In light of these circumstances, where comprehensive testing is available, NAGC recommends that WISC-IV Full Scale IQ scores not be required for admission to gifted programs. Instead, the following guidelines are suggested:

When the WISC-IV is used for the identification of gifted students, either the General Ability Index (GAI), which emphasizes reasoning ability, or the Full Scale IQ Score (FSIQ), should be acceptable for selection to gifted programs. The GAI should be derived using the table provided in the Harcourt Assessments website (*Technical Report 4*) [<http://harcourtassessments.com/hai/Images/pdf/wisciv/WISCIVTechReport4.pdf>]

The Verbal Comprehension Index (VCI) and the Perceptual Reasoning Index (PRI) are also independently appropriate for selection to programs for the gifted, especially for culturally diverse, bilingual, twice exceptional students or visual-spatial learners. It is important that a good match be made between the strengths of the child and the attributes of the program. Students who have special learning needs should be admitted to gifted programs, provided that there are other indications of giftedness and instructional modifications are made to fit the needs of the students.

Testers should consider whether flexibility in subtest choice is needed. Up to two substitutions of supplementary subtests for core subtests can be made on the WISC-IV (in different Composite areas), decided a priori. For example, the use of Arithmetic, instead of Digit Span or Letter-Number Sequencing, may improve assessment of Working Memory for gifted children who are not math phobic. Arithmetic substitutes a meaningful memory task for one of the non-meaningful subtests, is heavily weighted for abstract reasoning ability, and can reveal mathematical talent. Substitutions may also be considered for disabilities, such as using Picture Completion instead of Block Design when testing a child with fine motor difficulties.

If these guidelines are followed, the WISC-IV offers an excellent reasoning test with a good balance between verbally administered abstract reasoning and language items and tasks that assess visual-spatial and nonverbal reasoning with visual prompts (minimal verbal explanation). Visual items on the WISC-IV offer reduced timing emphasis over those on the WISC-III, an advantage for reflective gifted children. The entire WISC-IV is a wise choice for the comprehensive assessment of gifted children, when Working Memory and Processing Speed subtests are used diagnostically. Administering just the Verbal Comprehension and Perceptual Reasoning sections (a total of six subtests), and calculating a GAI, is also a justifiable, shorter, and cost-effective alternative for selecting gifted students.

Selected References

- Flanagan, D. P., & Kaufman, A. S. (2004). *Essentials of WISC-IV assessment*. Hoboken, NJ: John Wiley & Sons.
- Gilman, B. J., & Falk, R. F. (2005, August). *Research-based guidelines for use of the WISC-IV in gifted assessment*. Paper presented at the 16th Biennial Conference of the World Council for Gifted and Talented Children, New Orleans, LA.
- Lubin, B., Wallis, R. R., & Paine, C. (1971). Patterns of psychological test usage in the United States: 1935 – 1969. *Professional Psychology, 2*, 70-74.
- Rimm, S., Gilman, B. J., & Silverman, L. K. (2008). Non-traditional applications of traditional testing. In J. VanTassel-Baska (Ed.), *Critical issues in equity and excellence in gifted education series, Volume 2: Alternative assessment of gifted learners* (pp. 175-202). Waco, TX: Prufrock Press.
- Silverman, L. K. (in press). The measurement of giftedness. In L. Shavinina, Ed. *The handbook on giftedness*. New York: Springer Science.
- Wechsler, D. (2003). *The WISC-IV technical and interpretive manual*. San Antonio, TX: Psychological Corporation.
- Weiss, L. G., Saklofske, D. H., Prifitera, A., & Holdnack, J. A. (2006). *WISC-IV Advanced clinical interpretation*. Burlington, MA: Academic Press.

Approved January 2008



The National Association for Gifted Children (NAGC) is an organization of parents, teachers, educators, other professionals, and community leaders who unite to address the unique needs of children and youth with demonstrated gifts and talents as well as those children who may be able to develop their talent potential with appropriate educational experiences.

All position papers are approved by the NAGC Board of Directors and remain consistent with the organization's position that education in a democracy must respect the uniqueness of all individuals, the broad range of cultural diversity present in our society, and the similarities and differences in learning characteristics that can be found within any group of students. NAGC Position Papers can be found at www.nagc.org.