Equitable Identification of Gifted Students in the Era of BLM

Jack A. Naglieri – Research Professor, Univ. of Virginia
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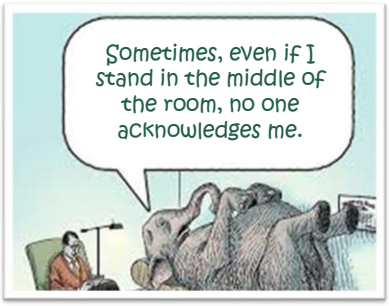

Mystery Number is 848,400

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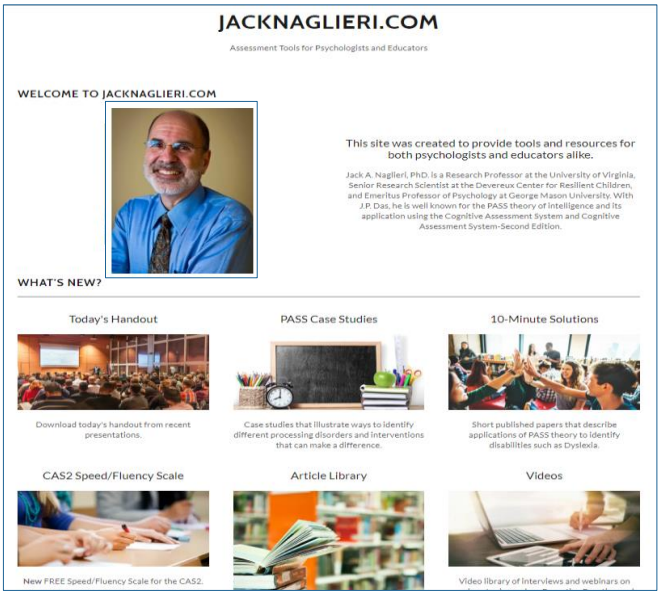

FOR MORE INFORMATION PLEASE GO TO MY WEB PAGE

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Equitable Identification of Gifted Students

- **CONCLUSIONS**
- Tests typically used to identify gifted/talented students require too much language and information:
  - language used in the **directions** (V, NV, Q)
  - Verbal and math knowledge required in the **questions** (V & Q)
  - Verbal expression to **answer** verbal questions(V)
- Students who come from low income families, are culturally different, or limited English skills are at disadvantage
- Many Hispanic and Black students are denied entry to gifted education and therefore they don't reach their potential
- BUT…WE CAN and **MUST** DO BETTER especially **NOW**!

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Ideas to Consider

Gifted Identification

Ability Tests' Content

New General Ability Tests

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Identification Methods Vary

- Parent and Teacher recommendation
- High grades in school
- Universal testing
- National and local norms
- Rating scales of gifted behaviors
- Creativity measures
- A matrix of some of these methods
- High scores on intelligence tests (CogAT, WISC, Binet, etc) play a CENTRAL role in the selection process

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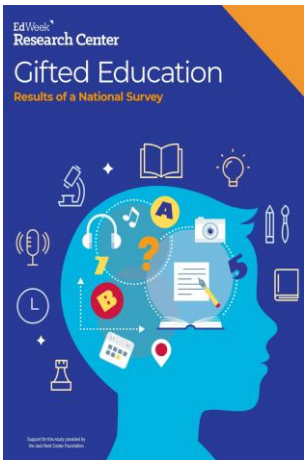
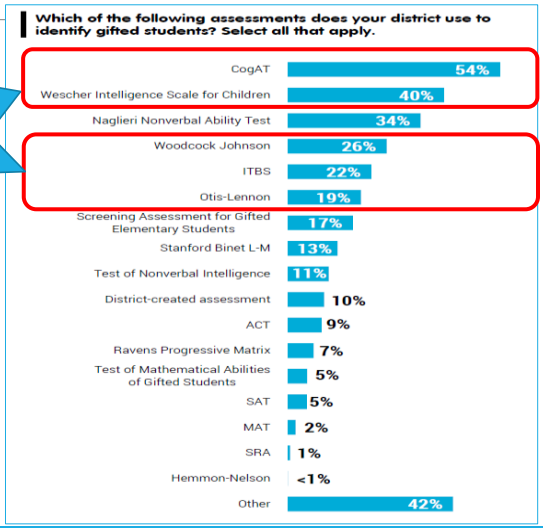
National Survey of Gifted Education



These tests have verbal and quantitative questions



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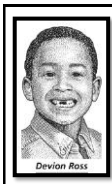
Obstacle to Equitable Identification

- Identification procedures
  - Gifted/Talented students are often identified with traditional IQ tests comprised of subtests like Vocabulary, Similarities, Arithmetic, Comprehension which demand knowledge
  - Using a test of ability that demands knowledge of English and understanding verbal directions is not reasonable
  - DOES A NONVERBAL TEST WORK?



Devion

- Devion lived with his mother and father and two siblings in Springfield, Illinois
- The family has an annual income of $12,000
- At home, Devion often reads or does word puzzles while his friends play outside.
- He is writing a book of several chapters using the family's 10-year-old computer, which was bought second-hand for $100. It has a broken mouse. He said: "I'm the only one I know that writes stories. It's a special secret I keep."
- He scored **141** out of a possible 150 on the *Naglieri Nonverbal Ability Test*
- Devion's high *Naglieri* score brought him an invitation to attend the magnet school last year
- He was the only African-American at his elementary school to qualify for gifted services
- But - his teacher did not think he should be in the gifted program

THE WALL STREET JOURNAL.

MONDAY, DECEMBER 29, 2003

Brain Drain

Initiative to Leave No Child Behind Leaves Out Gifted

Educators Divert Resources From Classes for Smartest To Focus on Basic Literacy

Blow to Bright Minority Kids

What's News—

Business and Finance

World-Wide

Project at Mint Draws Complaints From Many Quarters

Commemorative State Coins, Meant to Spur Collecting, Inspire Free-for-Alls

Business Ties

Many Compani[es] Transactions W[...]

'Related Party' Deals Disclosed By 300 Large Corporations; Potential for Conflict

Legacy of Family Ownership

What happened to Devion?

Devion Graduates High School

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Gifted Identification

- This presentation is about children who may not have the academic skills or command of the English language to do well in school, yet they are very smart – **gifted**
- These children can become very **talented** given the opportunity to learn
- How many children like this are in our country?

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848,400 non-White
247,500 ELL gifted in grades K-12 not served

WHY are so many of these students missed?

Number of Students Missed = 848,402

Table 1. Number of Students in US Public Schools Grades K-12 in 2018

	US Population	Potentially Gifted (8%) of US Population	Actual Numbers of Students in Gifted & Talented Programs	Numbers of students Not Identified
White	26,822,930	2,145,834	2,065,366	80,468
Black	8,530,756	682,460	366,823	315,637
Hispanic	15,888,681	1,271,094	778,545	492,549
Native American	572,330	45,786	25,183	20,603
Two or More Races	1,782,991	142,639	123,026	19,613
Total non-White	26,774,758	2,141,979	1,293,577	848,402

English language learner (ELL) students enrolled in public elementary and secondary schools in 2015 by Race and Ethnicity

	N of ELL in Public Ed	N Potentially Gifted (8%)	N students Identified	N Missed (% Missed)
White	294,763	23,581	8,548	15,033 (64%)
Black	178,141	14,251	5,166	9,085 (64%)
Hispanic	3,772,633	301,811	109,406	192,404 (64%)
Asian	511,703	40,936	14,839	26,097 (64%)
Pacific Islander	26,992	2,159	783	1,377 (64%)
Native Am./ Alaska Native	38,792	3,103	1,125	1,978 (64%)
Two or More Races	31,136	2,491	903	1,588 (64%)
Total	**4,854,160**	**388,333**	**140,771**	**247,562**

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Ideas to Consider:

Who conceived the content of our IQ tests

"The hardest part of learning something new is not embracing new ideas, but letting go of old ones."

- Todd Rose, *The End of Average*

Gifted Identification

Ability Tests' Content –

WHERE DID IT COME FROM?

New General Ability Tests

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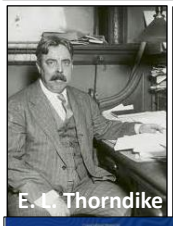
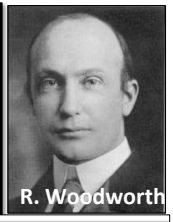
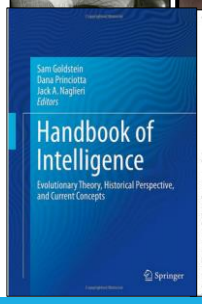
Army Mental Testing (Yoakum & Yerkes)
http://www.jacknaglieri.com/cas2.html








Hundred Years of Intelligence Testing: Moving from Traditional IQ to Second-Generation Intelligence Tests

Jack A. Naglieri

Context

- A group of psychologists met at Harvard in April of 1917 to construct an ability test to help the US military evaluate recruits (WWI) for responsible positions
- Their goal was to develop a workable set of tests called the Army Alpha & Beta
- That became Verbal & Performance on WISC

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From Alpha & Beta to Wechsler IQ

- **Army Alpha**
  - Synonym- Antonym
  - Disarranged Sentences
  - Number Series
  - Arithmetic Problems
  - Analogies
  - Information

→ Verbal & Quantitative → Verbal and Quantitative on WISC-V, CogAT & Otis-Lennon

- **Army Beta**
  - Maze
  - Cube Imitation
  - Cube Construction
  - Digit Symbol
  - Pictorial Completion
  - Geometrical Construction

→ Originally called Performance now Nonverbal → Wechsler Nonverbal, Naglieri Nonverbal Ability Tests

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Our Tests Demand Knowledge

Stanford-Binet 5	WISC-V	WJ-IV and Batería-IV (including Cross Battery)	K-ABC-II
• Verbal • Knowledge • Quantitative Reasoning • Vocabulary • Verbal Analogies	• Verbal Comprehension: Vocabulary, Similarities, Information & Comprehension • Fluid Reasoning: Figure Weights, Arithmetic	• Comprehension Knowledge: Vocabulary & General Information • Fluid Reasoning: Number Series & Concept Formation • Auditory Processing: Phonological Processing	• Knowledge / GC: Riddles, Expressive Vocabulary, Verbal Knowledge

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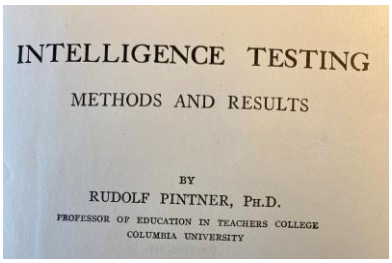
Army Testing (Yoakum & Yerkes, 1920) & Pintner (1923)

Why Beta?

METHODS AND RESULTS 19

Men who fail in alpha are sent to beta in order that injustice by reason of relative unfamiliarity with English may be avoided. Men who fail in beta are referred for individual examination by means of what may appear to be the most suitable and altogether appropriate procedure among the varied methods available. This reference for careful individual examination is yet another attempt to avoid injustice either by reason of linguistic handicap or accidents incident to group examining.


INTELLIGENCE TESTING

METHODS AND RESULTS

BY

RUDOLF PINTNER, PH.D.

PROFESSOR OF EDUCATION IN TEACHERS COLLEGE
COLUMBIA UNIVERSITY

1. *Tests must be relatively new.* — A good intelligence test must avoid as much as possible anything that is commonly learned by the subjects tested. In a broad sense this rests upon a differentiation between knowledge and intelligence. To use as a test of intelligence

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Measure Thinking not Knowledge

- What does the student have to know to complete a task?
  - This is dependent upon educational opportunity

- How does the student have to think to complete a task?
  - This is dependent on the brain

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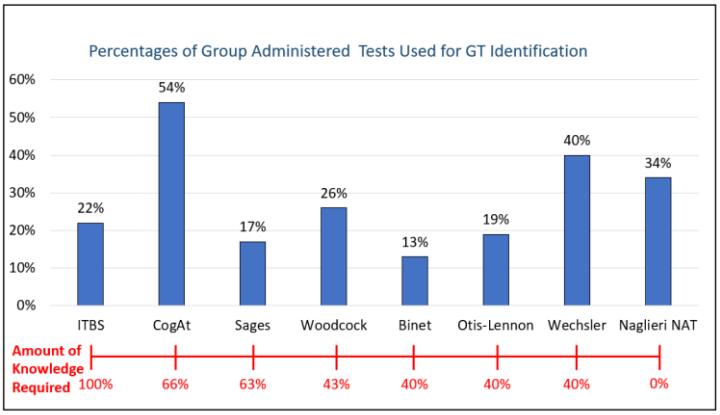

Usage data from: Kurtz, H., Harwin, A., Chen, V. & Furuya, Y. (2019). *Gifted education: Results of a national survey*. Bethesda, MD: Education Week Research Center.

Thinking and Knowing Continuum

Race and ethnic differences on these ability tests…

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Test Directions ALSO Matter

- *California Achievement Test & Iowa Test of Basic Skills* instructions include many basic concepts that students may not have mastered at the ages for which the tests were intended (Cummings & Nelson, 1980)
- Students' ability to recall directions presented orally was related to their working memory capacity. (Randall, Engle, Carullo, & Collins, 2015)
- CogAT *nonverbal* scale demands comprehension of *verbal* directions
  - The instructions for 5 and 6-year-olds contain approximately 400 words and many verbal concepts and complex verbal statements like: **The small circle goes with the large circle in the same way that the small square goes with the large square.**
- The inclusion of verbal concepts and strain on working memory are an obstacle for any student with limited verbal skills

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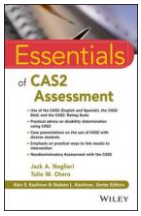
Race & IQ (Naglieri & Otero, 2017)

- Even though these tests do not show psychometric bias (Worrell, 2019) they do yield large mean score differences by race



Traditional IQ tests	
SB-IV (matched samples)	12.6
WISC-V (normative sample)	11.6
WISC–IV (normative sample)	11.5
WJ- III (normative sample)	10.9
WISC–IV (matched samples)	10.0
WISC-V (statistical controls normative sample)	8.7

Note: The data for these results are reported for the Stanford-Binet IV from Wasserman (2000); Woodcock-Johnson III from Edwards & Oakland (2006); Wechsler Intelligence Scale for Children – IV (WISC-IV) from O'Donnell (2009), WISC-V from Kaufman, Raiford & Coalson (2016).

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Test Bias is present if there are group differences in ...

Researchers have defined psychometric bias using analysis of:

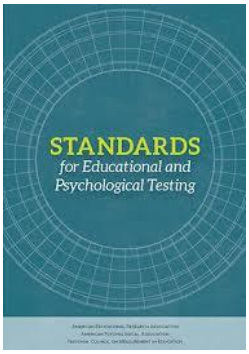
- internal consistency of items
- reliability of test/retest scores
- rank order of item difficulties
- item intercorrelations
- factor structure of test or items
- magnitude of the factor loadings

- slope & intercept regression lines
- correlation of raw scores with age
- item characteristic curve
- frequencies of choice of error distracters
- interaction of test items by group membership

Crocker & Algina (1986). *Introduction to Classical & Modern Test Theory* (Hold, Rinehart & Winston)
Nunnally & Bernstein (1994). *Psychometric Theory* (McGraw-Hill)
Jensen (1980). *Bias in Mental Testing* (Free Press)
Brody (1992). *Intelligence* (Academic Press)

Opportunity to learn and Equity

- *According to the Standards for Educational and Psychological Testing* (AERA, APA & NCME, 2014), if a person has had limited opportunities to learn the content in a test of intelligence, that test may be considered **unfair because** it penalizes students for not having learned the content
- **Equitable assessment** can be achieved if all examinees have equal opportunity to perform
- The Standards also remind us that **even if the norming data do not demonstrate psychometric bias tests can still be considered unfair.**



NNAT's Small Race & Ethnic Differences

	N	Mean	Diff
White	2,306	99.3	
Black	2,306	95.1	4.2
White	1,176	101.4	
Hispanic	1,176	98.6	2.8
White	466	103.6	
Asian	446	103.0	0.3

Psychological Assessment
2000, Vol. 12, No. 3, 328–334

1040-3590/00/$5.00 DOI: 10.1037//1040-3590.12.3.328

Comparison of White, African American, Hispanic, and Asian Children on the Naglieri Nonverbal Ability Test

Jack A. Naglieri and Margaret E. Ronning
Ohio State University

This study examined differences between 3 matched samples of White (n = 2,306) and African American (n = 2,306), White (n = 1,176) and Hispanic (n = 1,176), and White (n = 466) and Asian (n = 466) children on the Naglieri Nonverbal Ability Test (NNAT; J. A. Naglieri, 1997a). The groups were selected from 22,620 children included in the NNAT standardization sample and matched on geographic region, socioeconomic status, ethnicity, and type of school setting (public or private). There was only a small difference between the NNAT scores for the White and African American samples (d ratio = .25) and minimal differences between the White and Hispanic (d ratio = .17) and between the White and Asian (d ratio = .02) groups. The NNAT was moderately correlated with achievement for the total sample and correlated similarly with achievement for the White and ethnic minority groups. The median correlation of NNAT with reading was .52 and NNAT with math was .63 across the samples. Results suggest that the NNAT scores have use for fair assessment of White and minority children.

NNAT Identified Equal Percentages

Table 2

NNAT Scores

	White		Black		Hispanic		Expected
	n	%	*n*	%	*n*	%	%
120 & above	1,571	10.3	269	9.4	190	9.5	9.0
125 & above	906	5.6	145	5.1	88	4.4	5.0
130 & above	467	2.5	75	2.6	46	2.3	2.0
135 & above	190	1.1	42	1.5	18	0.9	1.0
140 & above	90	0.6	19	0.6	9	0.4	0.4
Total Sample *n*	14,141		2,863		1,991		

Note. Expected percentage values are those associated with normal curve probabilities.

GIFTED IDENTIFICATION

Addressing Underrepresentation of Gifted Minority Children Using the Naglieri Nonverbal Ability Test (NNAT)

Jack A. Naglieri
George Mason University

Donna Y. Ford
The Ohio State University

ABSTRACT

A persistent problem in education is the underrepresentation of diverse students in gifted education programs. Many educators attribute the poor participation of diverse students in gifted programs to the ineffectiveness of standardized tests in capturing the ability of these students. Thus, a primary agenda of school selection committees is to find more culturally sensitive measures. This study examined the effectiveness of the Naglieri Nonverbal Ability Test (NNAT) in identifying gifted Black and Hispanic students in comparison to White students. The sample was comprised of

attribute the problem to standardized tests, contending that these tests fail to assess the strengths and abilities of culturally, ethnically, and linguistically diverse populations (e.g., Frasier et al., 1995). Support for this assertion comes from reports showing that Black, Hispanic, and Native American students consistently score lower than White students on traditional standardized tests (Brody, 1992; Sattler, 1988).

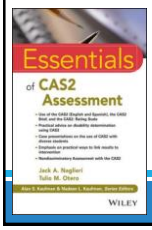
Despite the fact that intelligence tests such as the Wechsler Intelligence Scale for Children–Third Edition

PUTTING THE RESEARCH TO USE

Very Similar percentages of Black, White and Hispanic students earned a standard score of 125 (95th percentile) or above

Race & IQ

- Taking the knowledge out of the ability test makes a difference
- K-ABC, KABC-2, CAS and CAS2 have the smallest differences



Mean Score Differences in Total scores by Race by Intelligence Test.

IQ tests MOST knowledge	
SB-IV (matched samples)	12.6
WISC-V (normative sample)	11.6
WISC–IV (normative sample)	11.5
WJ- III (normative sample)	10.9
WISC–IV (matched samples)	10.0
WISC-V (statistical controls normative sample)	8.7
Intelligence Tests With Least Knowledge	
K-ABC (normative sample)	7.0
K-ABC (matched samples)	6.1
KABC-2 (matched samples)	5.0
CAS-2 (normative sample)	6.3
CAS (statistical controls normative sample)	4.8
CAS-2 (statistical controls normative sample)	4.3
NNAT (matched samples)	4.2

Note: The data for these results are reported for the Stanford-Binet IV from Wasserman (2000); Woodcock-Johnson III from Edwards & Oakland (2006); Kaufman Assessment Battery for Children from Naglieri (1986); Kaufman Assessment Battery for Children-II from (Lichenberger, Sotelo-Dynega & Kaufman, 2009); CAS from Naglieri, Rojahn, Matto & Aquilino (2005); CAS-2 from Naglieri, Das & Goldstein, 2014; Wechsler Intelligence Scale for Children – IV (WISC-IV) from O'Donnell (2009), WISC-V from Kaufman, Raiford & Coalson (2016). Reynolds Intellectual Assessment Scale -2 Reynolds, C. R., & Kamphaus, R. W. (2015)

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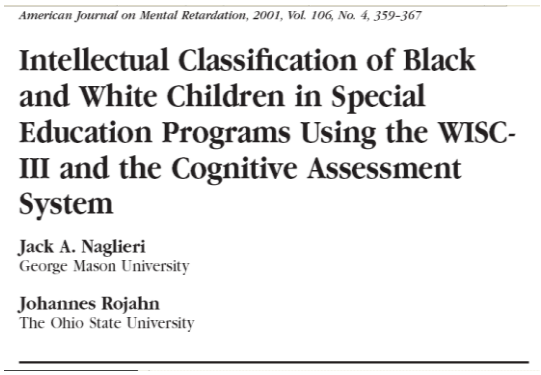
Wechsler vs CAS for Students with ID

- ***White*** children earned the same mean scores on WISC-III and CAS
- ***Black*** children earned lower VIQ than PIQ scores due to language / achievement tasks → low Full Scale
- ***Black*** children earned ***higher*** scores on CAS than whites
- ***Fewer*** Black children would be identified as having intellectual disability based on Full Scale scores using CAS than WISC-III
- *THIS IS A SOCIAL JUSTICE ISSUE*.



American Journal on Mental Retardation, 2001, Vol. 106, No. 4, 359–367

Intellectual Classification of Black and White Children in Special Education Programs Using the WISC-III and the Cognitive Assessment System

Jack A. Naglieri
George Mason University

Johannes Rojahn
The Ohio State University

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Ideas to Consider

Gifted Identification

Ability Tests' Content

New General Ability Tests

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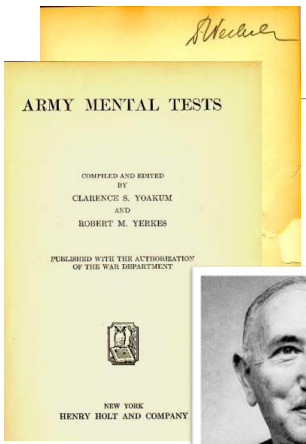

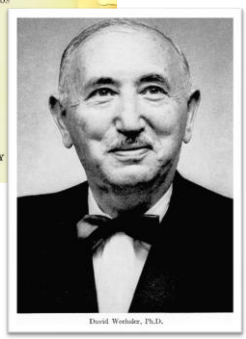

Wechsler (1939)

- Built his IQ test on the Army Alpha and Beta
- His definition of intelligence was
  - "The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (1939)"
- but his test yielded a Verbal IQ and Performance IQ suggesting two types of intelligence

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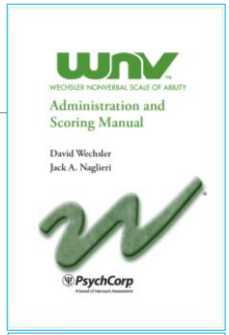
Wechsler & Spearman's *g*

of nonverbal assessment many paces forward. In addition, the emphasis in the *WNV Manual* that the Full Scale measures *general ability nonverbally*—and *not* nonverbal ability—is an important distinction that further ties the WNV to Dr. Wechsler. Although his intelligence tests in the 1930s and 1940s departed from the one-score *Stanford-Binet* by offering separate Verbal and Performance IQs as well as a profile of scaled scores, Dr. Wechsler remained a firm believer in Spearman's *g* theory throughout his lifetime. He believed that his Verbal and Performance Scales represented different ways to access *g*, but he never believed in nonverbal intelligence as being separate from *g*. Rather, he saw the Performance Scale as the most sensible way to measure the general intelligence of people with hearing impairments, language disorders, or limited proficiency in English. And that is precisely what the WNV is intended to do.

Alan S. Kaufman, PhD
Clinical Professor of Psychology
Yale Child Study Center
Yale University School of Medicine



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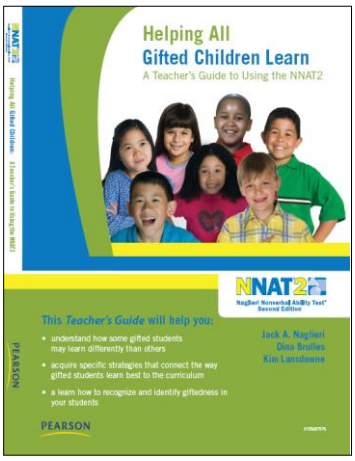
General ability (Naglieri, Brulles & Lansdowne, 2009)

- General ability (i.e. '*g*')is what allows us to solve many kinds of problems
- The problems may involve
  - reasoning, memory, sequencing, verbal and math skills, patterning, connecting ideas across content areas, insights, making connections, drawing inferences, analyzing simple and complex ideas.
- Verbal or Nonverbal describes the content of the test NOT a type of intelligence



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Structural validity of the Wechsler Intelligence Scale for Children–Fifth Edition: Confirmatory factor analyses with the 16 primary and secondary subtests.

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Canivez, Gary L.,Watkins, Marley W.,Dombrowski, Stefan C.

Canivez, G. L., Watkins, M. W., & Dombrowski, S. C. (2017). Structural validity of the Wechsler Intelligence Scale for Children–Fifth Edition: Confirmatory factor analyses with the 16 primary and secondary subtests. *Psychological Assessment, 29*(4), 458–472. https://doi.org/10.1037/pas0000358

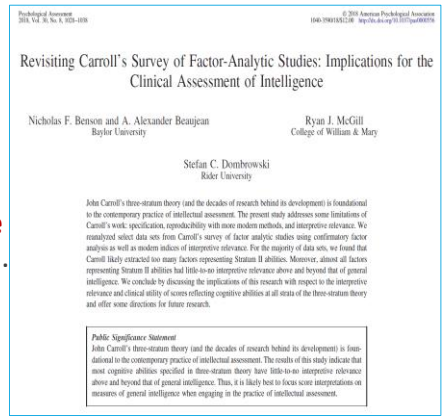
The factor structure of the Wechsler Intelligence Scale for Children-Fifth Edition (WISC-V; Wechsler, 2014a) standardization sample (N = 2,200) was examined using confirmatory factor analyses (CFA) with maximum likelihood estimation for all reported models from the WISC-V *Technical and Interpretation Manual* (Wechsler, 2014b). Additionally, alternative bifactor models were examined and variance estimates and model-based reliability estimates (ω coefficients) were provided. Results from analyses of the 16 primary and secondary WISC-V subtests found that all higher-order CFA models with 5 group factors (VC, VS, FR, WM, and PS) produced model specification errors where the Fluid Reasoning factor produced negative variance and were thus judged inadequate. Of the 16 models tested, the bifactor model containing 4 group factors (VC, PR, WM, and PS) produced the best fit. Results from analyses of the 10 primary WISC-V subtests also found the bifactor model with 4 group factors (VC, PR, WM, and PS) produced the best fit. Variance estimates from both 16 and 10 subtest based bifactor models found dominance of general intelligence (g) in accounting for subtest variance (except for PS subtests) and large ω-hierarchical coefficients supporting general intelligence interpretation. The small portions of variance uniquely captured by the 4 group factors and low ω-hierarchical subscale coefficients likely render the group factors of questionable interpretive value independent of g (except perhaps for PS). Present CFA results confirm the EFA results reported by Canivez, Watkins, and Dombrowski (2015); Dombrowski, Canivez, Watkins, and Beaujean (2015); and Canivez, Dombrowski, and Watkins (2015). (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Support for 'g'

- The small portions of variance uniquely captured by [subtests]… render the group factors [scales]of questionable and support the value of general ability
- Present CFA results confirm the EFA results (Canivez, Watkins, & Dombrowski, 2015); Dombrowski, Canivez, Watkins, & Beaujean (2015); and Canivez, Dombrowski, & Watkins (2015).

Support for 'g': Research on CHC

- John Carroll's three-stratum theory … is foundational to the contemporary practice of intellectual assessment.
- **The results of this study indicate that most cognitive abilities specified in three-stratum theory have little-to-no interpretive relevance above and beyond that of general intelligence.**
- Thus, it is likely **best to focus score interpretations on measures of *general intelligence* when engaging in the practice of intellectual assessment.**



Revisiting Carroll's Survey of Factor-Analytic Studies: Implications for the Clinical Assessment of Intelligence

Nicholas F. Benson and A. Alexander Beaujean
Baylor University

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College of William & Mary

Stefan C. Dombrowski
Rider University

John Carroll's three-stratum theory (and the decades of research behind its development) is foundational to the contemporary practice of intellectual assessment. The present study addresses some limitations of Carroll's work: specification, reproducibility with more modern methods, and interpretive relevance. We reanalyzed select data sets from Carroll's survey of factor analytic studies using confirmatory factor analysis as well as modern indices of interpretive relevance. For the majority of data sets, we found that Carroll likely extracted too many factors representing Stratum II abilities. Moreover, almost all factors representing Stratum II abilities had little-to-no interpretive relevance above and beyond that of general intelligence. We conclude by discussing the implications of this research with respect to the interpretive relevance and clinical utility of scores reflecting cognitive abilities at all strata of the three-stratum theory and offer some directions for future research.

Public Significance Statement
John Carroll's three-stratum theory (and the decades of research behind its development) is foundational to the contemporary practice of intellectual assessment. The results of this study indicate that most cognitive abilities specified in three-stratum theory have little-to-no interpretive relevance above and beyond that of general intelligence. Thus, it is likely best to focus score interpretations on measures of general intelligence when engaging in the practice of intellectual assessment.

Measuring Ability Equitably Using Verbal, Nonverbal and Quantitative Content

Naglieri Verbal Nonverbal Quantitative General Ability Tests

Dina Brulles, Kim Lansdowne and I have constructed three new tests that will be used for identification of gifted students

The focus of these tests is EQUITABLE ASSESSMENT of all students

The tests measure general ability using three types of content: Verbal (Naglieri & Brulles, 2021), Nonverbal (Naglieri, 2021) and Quantitative (Naglieri & Lansdowne, 2021)

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Naglieri General Ability Tests

MHS Beyond Assessments

- The *General Ability Tests* are group or individually administered using online or paper formats ages 4 to 18 published by Multi-Health System.
- Test items are presented using diagrams and pictures.
- The questions demand reasoning while requiring little to no academic content and can be solved regardless of the language(s) spoken by the student.
- Intended for identification of all students including those from diverse cultural, linguistic, or socioeconomic backgrounds, or those who have had limited educational experiences.

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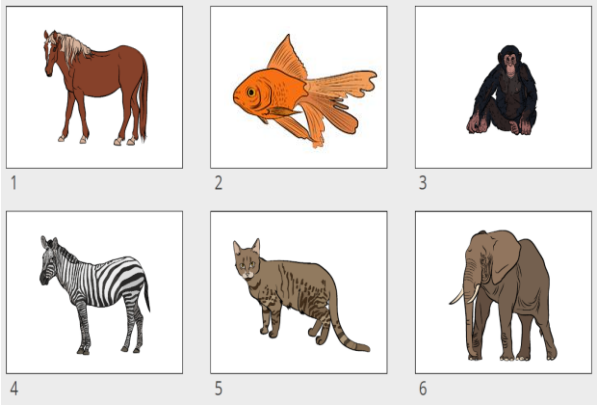
Naglieri Ability Test - Verbal



- Online and paper version
- Classroom and individual administration
- Animated instructional video
- Minimal verbal directions by administrator
- Interactive practice questions
- 3 different test forms:
  - Kindergarten – Grade 2, Grade 3-6, Grade 7-12

Authors: Jack Naglieri & Dina Brulles

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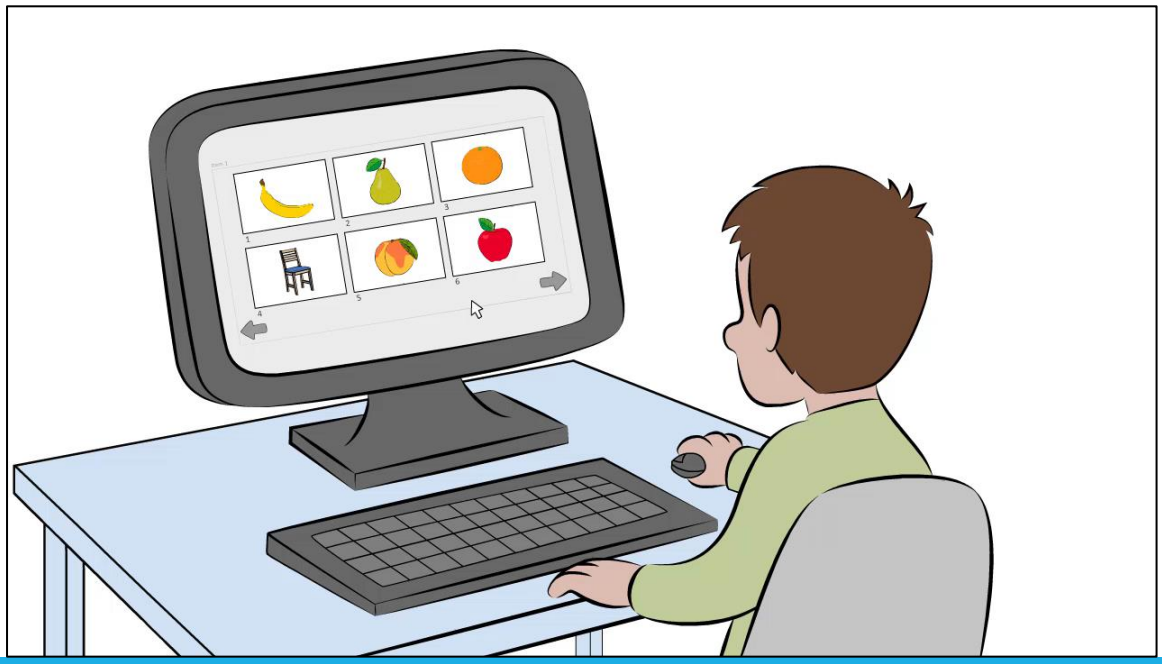

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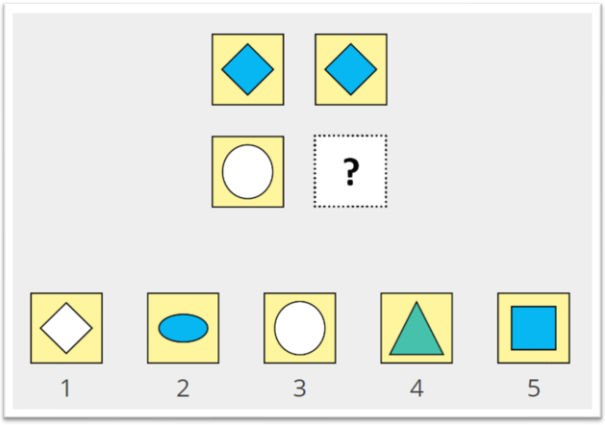
Naglieri Ability Test - Non-verbal



- Online and paper versions
- Group or individual administration
- Several NEW types of items have been developed
- Animated instructional video
- Interactive practice questions
- Minimal verbal directions
- Pre-K, Kindergarten, Grade 1, Grade 2, Grade 3/4, Grade 5/6, Grade 7-9, Grade 10-12

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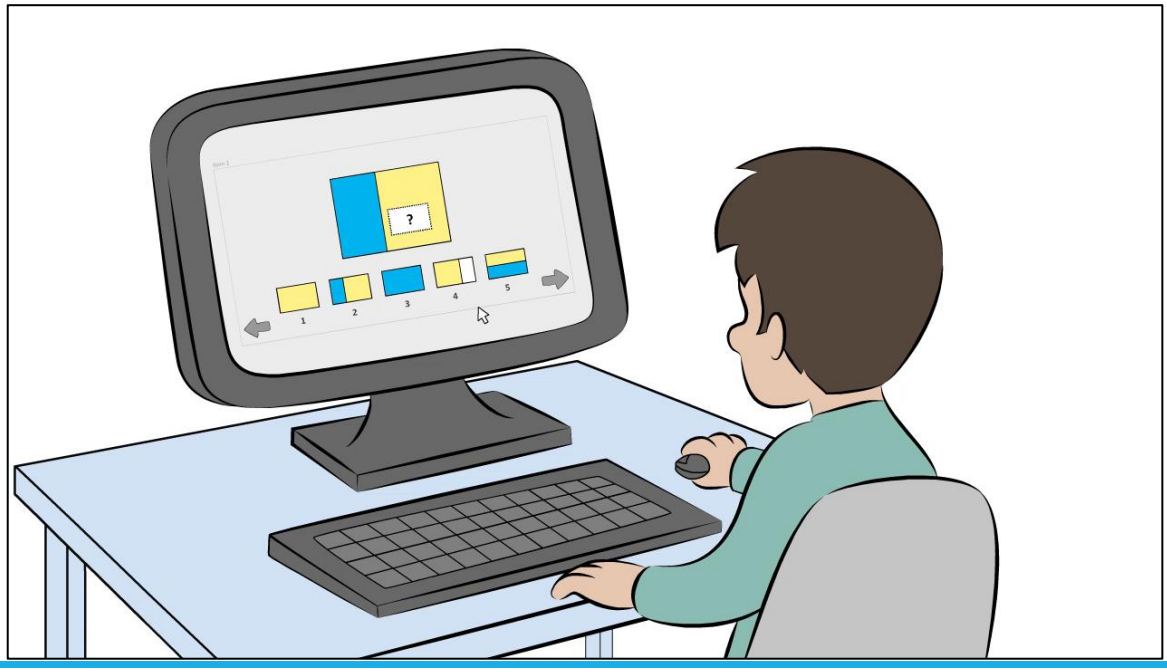

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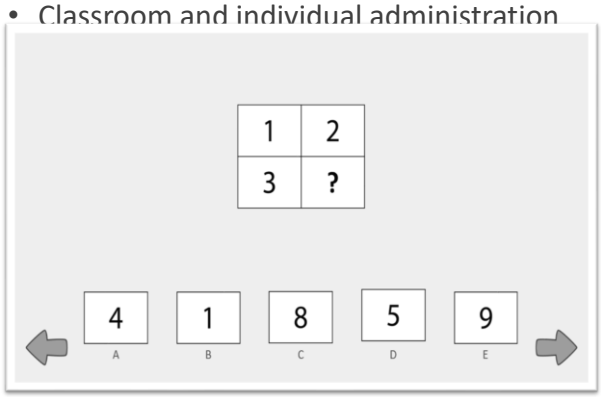
Naglieri Ability Test - Quantitative

- These items demand analysis of sequences of numbers or relationships among a group of numbers. For example, 1 is to 2 (a difference of 1) as 3 is to … 4. Alternatively, the items can be solved by simply recognizing that the when analyzed vertically, 1 becomes 3, so 2 should become 4.
- These items test a person's ability to understand relationships and patterns involving numbers, just as understanding relationships among shapes in the NAT-Nonverbal or verbal categories in the NAT-Verbal.

Authors: Jack Naglieri & Kim Lansdowne

- Online and paper version
- Classroom and individual administration



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Verbal, Nonverbal Quantitative Results

- **VERBAL SAMPLE**
  - 2,482 That closely matches the US population on key demographics
- **GENDER**
  - No difference between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

- **NONVERBAL SAMPLE**
  - 3,630 That closely matches the US population on key demographics
- **GENDER**
  - No difference between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

- **QUANTITATIVE SAMPLE**
  - 2,841 That closely matches the US population on key demographics
- **GENDER**
  - No difference between **males** and **females** for raw score across all forms
- **RACE/ETHNICITY**
  - No differences among **White, Black, & Hispanic** for raw score across all forms
- **PARENTAL EDUCATION LEVEL**
  - No differences among five education levels (**No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree**) for raw score across all forms

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Gifted Identification

- WE CAN devise Verbal and Quantitative tests that can be solved regardless of the language a student speaks with nonverbal directions and no verbal expression required…AND add a Nonverbal tests to provide an equitable approach to assessment.

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Naglieri General Ability Tests Release

- The three tests will be released in 2021 for application using local norms
- Data collection for generation of national reference group will resume as soon as it is possible
- We know we have highly reliable measures that work well across ages

Naglieri Verbal Nonverbal Quantitative
General Ability Tests

Reliability Coefficients of Naglieri General Ability Tests (July 2020)

Quantitative	Kindergarten	.89
	Grade 1	.90
	Grade 2	.92
	Grades 3 and 4	.94
	Grades 5 and 6	.94
	Grades 7 - 9	.95
	Grade 10 - 12	.93
	Median	**.93**
Nonverbal	PreK	.92
	Kindergarten	.87
	Grade 1	.90
	Grade 2	.86
	Grades 3 and 4	.92
	Grades 5 and 6	.93
	Grades 7 - 9	.95
	Grade 10 - 12	.94
	Median	**.92**
Verbal	K - grade 2	.92
	Grades 3 - 6	.90
	Grades 7 - 12	.89
	Median	**.90**

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How to Equitably Identify Gifted

- Do **universal screening** with ability tests that do not require knowledge of English
- Use the Verbal, Nonverbal and Quantitative test scores to help ensure that every student had the opportunity to demonstrate their ability.
- Obtain scores for **ALL** students (not only referred students) in the grades for which the GT decisions is needed
- Use local norming procedure

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Local Norming Procedure for V, NV, & Q

- Obtain scores for **ALL** students (not only referred students) in the grades for which the GT decisions is needed
- Decide how the information obtained for each student is to be evaluated (i.e., average, and or logic) and if it is to be weighted
- Rank order the students' raw scores on the V, NV & Q tests
  - Raw scores can be converted to percentile or standard scores as desired
- Determine a cut-score based on the number of students the GT program can accommodate
- Evaluate the outcome

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Gifted Identification using Traditional IQ

- WE CAN devise Verbal and Quantitative tests that can be solved regardless of the language a student speaks with nonverbal directions and no verbal expression required…AND they provide an equitable approach to assessment.

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Equitable Identification of Gifted Students