

Assessment of Gifted Students Using the Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative

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FOR MORE INFORMATION PLEASE GO TO MY WEB PAGES



Naglieri Verbal Nonverbal Quantitative
General Ability Tests

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EQUITABLE ASSESSMENT OF GIFTED STUDENTS USING THE

Naglieri General Ability Tests

Now Available

Why We Do What We Do

Inequity in Gifted Testing

Recently researchers have estimated that more than 850,000 African-American, Hispanic, and Native American students in K-12 public school today could have been identified for gifted programs but were not. This problem could be addressed by using ability tests that were designed and validated to be equitable for all students.

Achieving Equity

The Naglieri General Ability Tests by Jack A. Naglieri, PhD, Dina M. Brulles, PhD and Kimberly Lansdowne, PhD were explicitly developed to address the need for equitable assessment of gifted students from diverse cultural, linguistic, and socioeconomic backgrounds so they can receive educational opportunities appropriate for their ability.

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JACKNAGLIERI.COM
TOOLS FOR PSYCHOLOGICAL AND EDUCATIONAL ASSESSMENT

WELCOME TO JACKNAGLIERI.COM

This site was created to provide tools and resources for both psychologists and educators alike.

Jack A. Naglieri, PhD, has held faculty appointments at Northwestern University, The Ohio State University, and Georgia Institute of Technology. He is currently a Research Professor at the University of Virginia, Senior Research Scientist at the University of North Carolina, and Emeritus Professor of Psychology at Georgia State University.

Dr. Naglieri has developed many tests used by psychologists and educators such as the Naglieri Nonverbal Ability Test, the Cognitive Assessment System, Author Scale for Self-Report, Downstream Student Strength Assessment, Comprehensive Executive Function Inventory, and forthcoming Naglieri General Ability Tests: Verbal, Nonverbal, and Quantitative. He is widely known for his efforts to increase participation of underserved and undersampled students in gifted education. He is also well known for the PASS Theory of Intelligence and its application using the CAS for identification of specific learning disabilities using the Comprehensive Consistency Method, fair and equitable assessment of diverse populations, and academic interventions related to PASS non-exceptional processes.

NAGLIERI GENERAL ABILITY TESTS: VERBAL, NONVERBAL AND QUANTITATIVE

The Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative provide equitable assessment of students for gifted educational programs.

HANDOUTS

Download PDF handouts of past presentations and related research on the following tests and topics

WEBINARS

A webinar library that covers a variety of topics such as: EF, Autism Assessment, and SLD. We have created this library to share and learn from each other while staying home and safe.

EQUITY

As this section provides information about equity in the CAS and equity in gifted assessment, CASAT

EXECUTIVE FUNCTION

See Comprehensive examination of executive function, its measurement, and intervention.

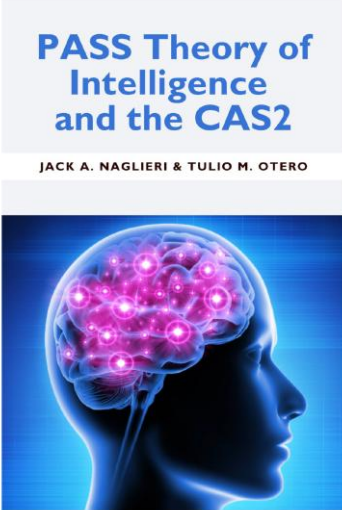
HELPING CHILDREN LEARN

Helping Children Learn was written to give parents and teachers simple ways to make learning fun and easy for any child. Handouts

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PASS Theory and CAS2 Information



PASS Theory of Intelligence and the CAS2

JACK A. NAGLIERI & TULIO M. OTERO



Download Free E-Book

Free CAS2 Access for Univ Professors



Neurodiversity Podcast



The goal of this e-book is to describe the context in which the PASS Theory of Intelligence was conceived and explain why it guided the construction of the Cognitive Assessment System and its various versions, and the second edition.

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Let's Connect



 www.NaglieriGiftedTests.com

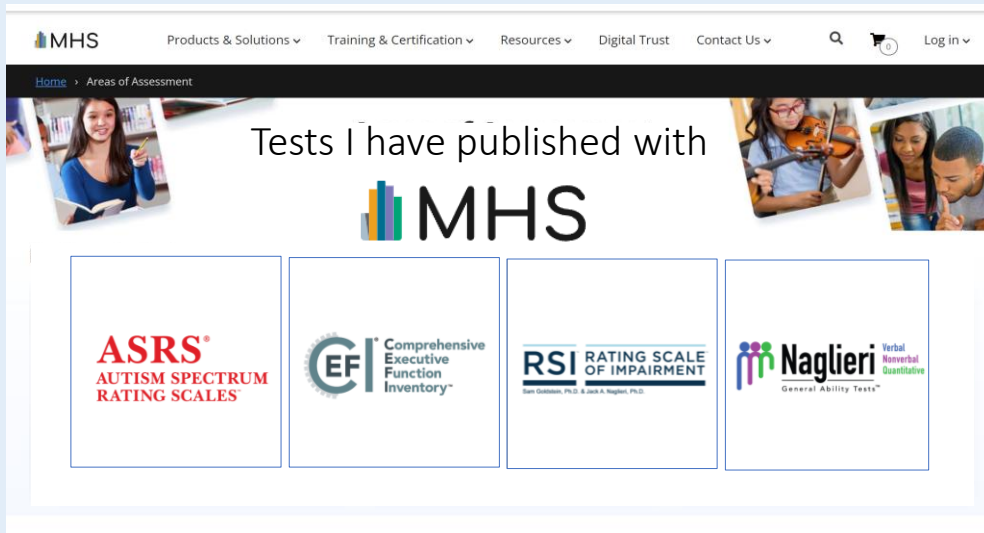
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1. THE WHY
2. What did I discover?
3. What did we create?
4. What is the validity of the new tests?

My Professional Journey as a School Psychologist

Intelligence tests and
Assessment

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Traditional IQ and Achievement Tests

- Working as a school psychologist in 1975 I noticed that items on the WISC we were VERY similar to parts of the achievement tests
 - The *Peabody Individual Achievement Test* (1970) had a General Information and Arithmetic subtests JUST LIKE THE WISC!
 - THAT DID NOT MAKE SENSE
 - In 1977 → UGA for Ph.D. With Alan Kaufman who said VIQ=achievement



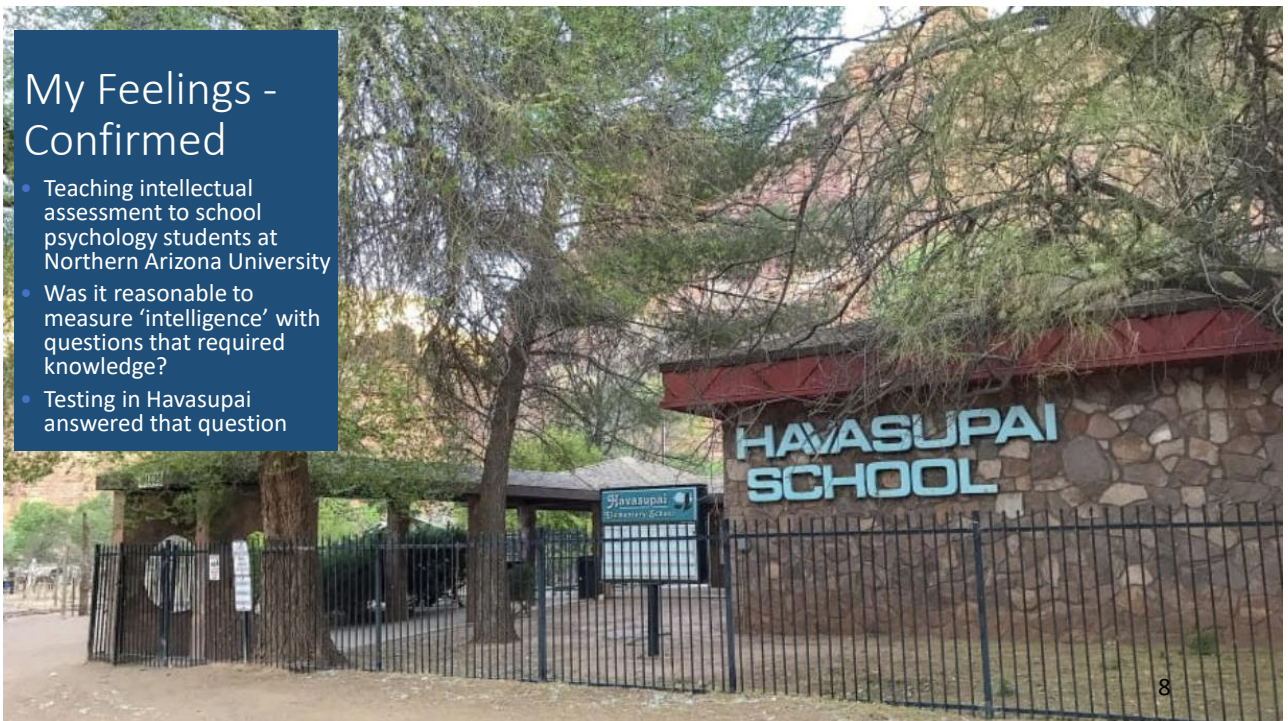
1975 Charles Champagne Elementary, Bethpage, NY

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My Feelings - Confirmed

- Teaching intellectual assessment to school psychology students at Northern Arizona University
- Was it reasonable to measure 'intelligence' with questions that required knowledge?
- Testing in Havasupai answered that question



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1981

Test Results and Interpretations:

On the WISC-R, Amanda earned a **Performance IQ of 95±7** which falls in the average range of intelligence and at the 37th percentile rank in comparison to the children her age in the standardization sample. In contrast to this score of average non-verbal intelligence was her **Verbal IQ of 52±7**. This score is quite low and indicates that her level of facility with the English language falls at about the 1st percentile rank. **This score can NOT be considered an estimate of verbal intelligence because Amanda speaks mostly Supai and little English. Due to the large difference between these scores, no Full Scale IQ was computed.**

Within the WISC-R a clear pattern emerged: Amanda performed well on tasks that required little or no English language comprehension or expression, and poorly on all tasks which did require these linguistic skills. In fact, even if a task was visual and non-verbal, but required English language comprehension of instructions, she performed more poorly.

WISC-V Full Scale				
Verbal Comprehension	Visual Spatial	Fluid Reasoning	Working Memory	Processing Speed
Similarities	Block Design	Matrix Reasoning	Digit Span	Coding
Vocabulary	Visual Puzzles	Figure Weights	Picture Span	Symbol Search
Information		Picture Concepts	Letter-Number Sequencing	Cancellation
Comprehension		Arithmetic		

WISC-R RECORD FORM

Wechsler Intelligence Scale for Children—Revised

NAME _____
ADDRESS _____
PARENT'S _____
SCHOOL _____
PLACE OF _____
REFERRED BY _____

Year 81 Month 7 Day 18
Date Tested 7/18/81
Date of Birth 7/4/18
Age 7 4 18

WISC-R PROFILE

Clinicians who wish to draw a profile should first transfer the child's scaled scores to the row of boxes below. Then mark an X on the dot corresponding to the scaled score for each test, and draw a line connecting the X's.

VERBAL TESTS					PERFORMANCE TESTS				
Information	Similarities	Arithmetic	Vocabulary	Comprehension	Digit Span	Picture Completion	Block Design	Object Assembly	Coding
19	19	19	19	19	19	19	19	19	19
18	18	18	18	18	18	18	18	18	18
17	17	17	17	17	17	17	17	17	17
16	16	16	16	16	16	16	16	16	16
15	15	15	15	15	15	15	15	15	15
14	14	14	14	14	14	14	14	14	14
13	13	13	13	13	13	13	13	13	13
12	12	12	12	12	12	12	12	12	12
11	11	11	11	11	11	11	11	11	11
10	10	10	10	10	10	10	10	10	10
9	9	9	9	9	9	9	9	9	9
8	8	8	8	8	8	8	8	8	8
7	7	7	7	7	7	7	7	7	7
6	6	6	6	6	6	6	6	6	6
5	5	5	5	5	5	5	5	5	5
4	4	4	4	4	4	4	4	4	4
3	3	3	3	3	3	3	3	3	3
2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1	1

NOTES: $\bar{x} = 9.4$

VERBAL TESTS	Raw Score	Scaled Score
Information	3	3
Similarities	0	2
Arithmetic	4	4
Vocabulary	0	1
Comprehension	0	1
(Digit Span)	2	2
Verbal Score		12

PERFORMANCE TESTS	Raw Score	Scaled Score
Picture Completion	10	8
Picture Arrangement	5	5
Block Design	18	12
Object Assembly	17	11
Coding	17	11
(Mazes)	17	11
Performance Score		12

Verbal Score	Performance Score	Full Scale Score	IQ
12	12	24	52
12	12	24	52
12	12	24	52
12	12	24	52

*Pooled from 4 tests, if necessary.

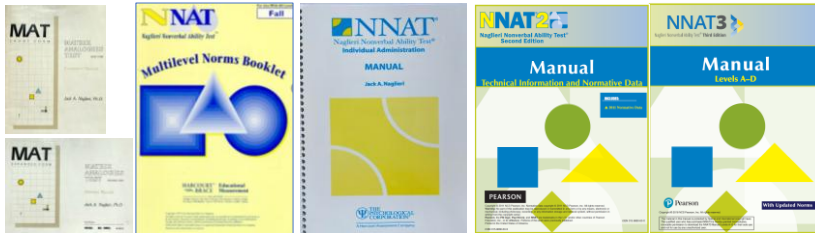
Naglieri, J. A. (1982). Does the WISC-R measure verbal intelligence for non-English speaking children? *Psychology in the Schools*, 19, 478-479.

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Naglieri's Nonverbal Tests: 1985 to Present

• Research on Six Versions of the Naglieri Nonverbal Tests



MAT Short and Expanded Forms 1985

Naglieri Nonverbal Ability Test 1997

NNAT—Individual, 2003

NNAT-2 2008

NNAT3 2016

Each of these versions of the NNAT showed similar scores by RACE, ETHNICITY, & SEX and had strong correlation with achievement

This research convinced me that measuring intelligence using test questions that measured how well a student can think was a valid and equitable way to measure general intelligence 'g'.

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1. THE WY
2. The History
3. What did we create?
4. What is the validity of the new tests?

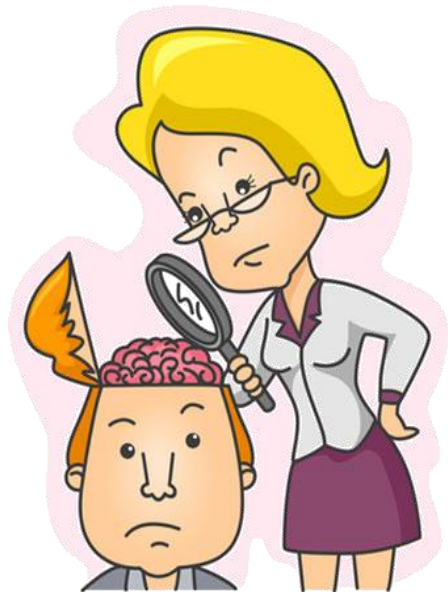
I learned how
intelligence tests were
created

I also learned the impact of
intelligence tests

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I asked the question:
**Why do we measure
intelligence the way
we do?**

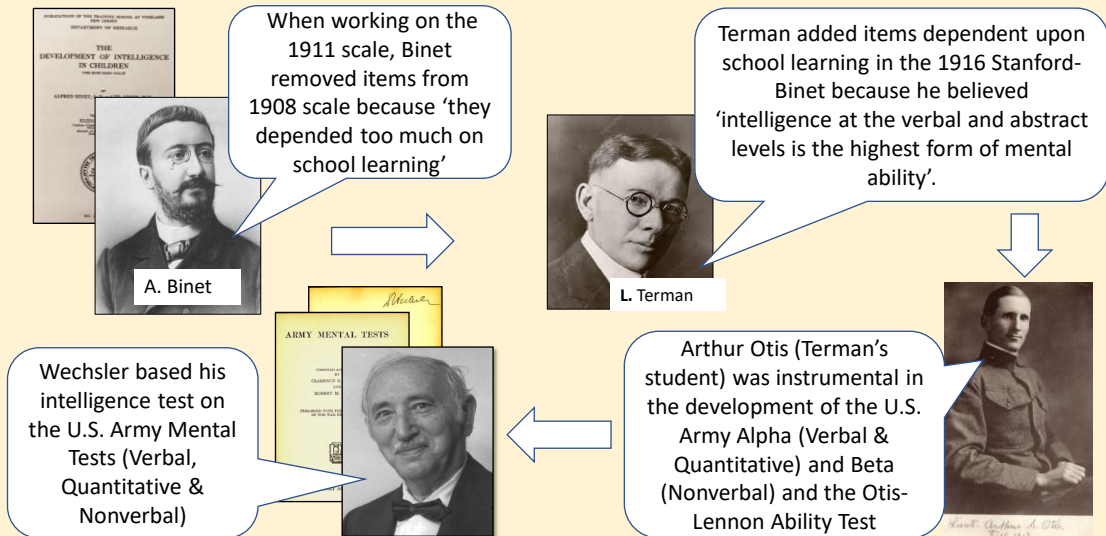
The History of IQ tests



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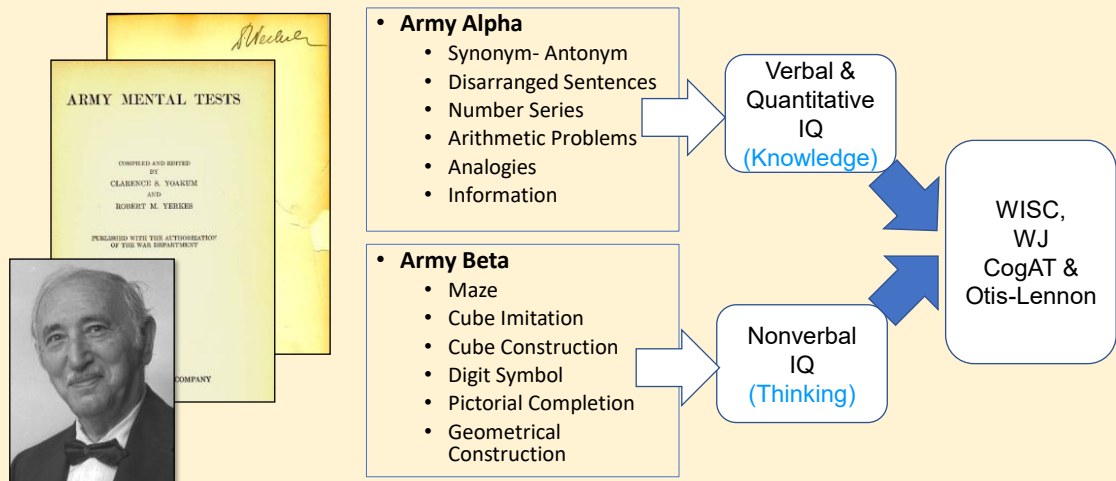
Binet → Stanford-Binet → Army Mental Tests → WISC, CogAT, Olsat



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Alpha & Beta → Wechsler



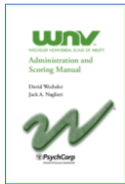
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Wechsler's View of General ability

- Wechsler “believed that his Verbal and Performance Scales represented different ways to access **g (general ability)**”, but **he never believed [in verbal and] 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 ... limited proficiency in English. (Kaufman, 2008)

“The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (1939)”



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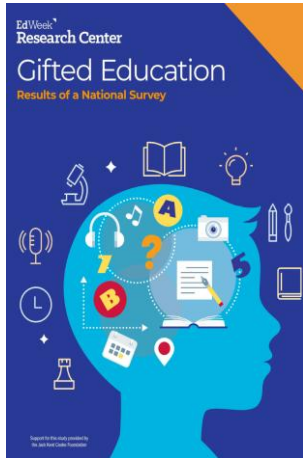
Knowledge is Included in “Ability” Tests

Stanford-Binet-5	WISC-V	WJ-IV	KABC-II	OLSAT	CogAT
• 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	• Verbal • Following directions • Verbal Reasoning • Quantitative • Verbal Arithmetic Reasoning	• Verbal Scale • Analogies • Sentence Completion • Verbal Classification • Quantitative • 45 pages of oral instructions

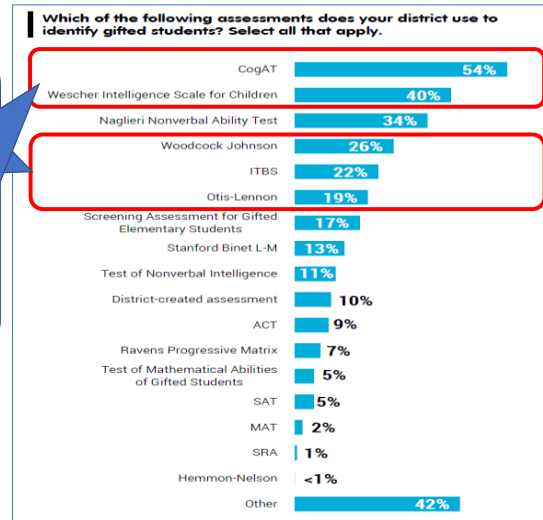
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National Survey of Gifted Education



These tests have verbal and quantitative questions and lengthy verbal directions



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	Race	Ethnic
Tests that require knowledge	8.5	4.8
Otis-Lennon School Ability Test (one school district)	13.6	-
CogAT7 Nonverbal (one school district)	11.8	7.6
CogAT-Total (V, Q & NV)	7.0	4.5
CogAT7 - Verbal	6.6	5.3
CogAT- Nonverbal	6.4	2.9
CogAT7-Quantitative	5.6	3.6
Tests that require minimal knowledge	3.8	1.7
Naglieri General Ability Test-Verbal (normative sample)	6.2	1.0
Naglieri General Ability Test-Quantitative (normative sample)	5.5	4.4
Naglieri General Ability Test-Nonverbal (normative sample)	4.4	0.3
NNAT (matched samples)	4.2	2.8
NNAT (matched samples English Spanish)	-	1.3
Naglieri General Ability Test-Quantitative (matched to US)	3.2	1.3
Naglieri General Ability Test-Verbal (matched to US)	2.2	1.6
Naglieri General Ability Test-Nonverbal (matched to US)	1.0	1.1

Race and Ethnic Differences on Group Administered Ability Tests

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Race and Ethnic Differences Individually Administered Intelligence Tests

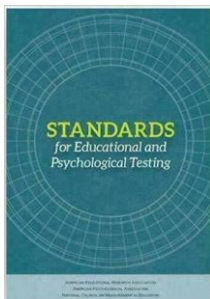
	Race	Ethnicity
Traditional Tests that require knowledge	Mn = 9.7	Mn = 8.0
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	9.1
WJ- III (normative sample)	10.9	10.7
KABC-11 Nonverbal Index	10.0	7.0
KABC II Fluid-Crystallized Index	9.3	10.5
WISC-V (normative sample adjusted for sex and parental ed)	8.7	3.7
KABC-II MPI (conforming sample)	8.1	8.2
K-ABC II MPI (normative sample)	7.9	5.9
KABC II MPI (normative sample adjusted for sex and PEL)	7.9	8.9
Second Generation Tests with minimal knowledge	Mn = 4.4	Mn = 3.5
CAS-2 (normative sample)	6.3	4.5
CAS (statistical controls for normative sample)	4.8	4.8
CAS-2 (statistical controls for normative sample)	4.5	1.8
CAS-2 Brief (normative sample)	2.0	2.8

Note: The results summarized here were reported for the; Stanford-Binet IV by Wasserman (2000); Woodcock-Johnson III race differences by Edwards and Oakland (2006) and ethnic differences by Sotelo-Dynega, Ortiz, Flanagan, and Chaplin (2013), WISC-V by Kaufman, Raiford, and Coalson (2016); Kaufman Assessment Battery for Children-II by Lichtenberger, Volker, Kaufman & Kaufman, (2006) and Scheiber, C., Kaufman, A.S. Which of the Three KABC-II Global Scores is the Least Biased?. *Journal of Pediatric Neuropsychology* 1, 21–35 (2015); CAS by Naglieri, Rojahn, Matto, and Aquilino (2005); CAS-2 and CAS2-Brief by Naglieri, Das, and Goldstein, 2014a and 2014b.

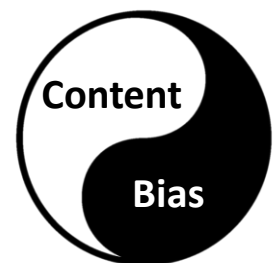
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Test Bias vs Test Fairness

According to the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014) Psychometric **TEST BIAS** and **Test Content** are two components of test fairness.



- ... 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 knowing the answers) even if there is no evidence of psychometric test bias.
- Evidence of test **FAIRNESS** is examined by examining differences in average scores



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What is the Practical Impact of intelligence tests that are confounded by knowledge?

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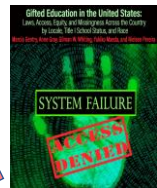
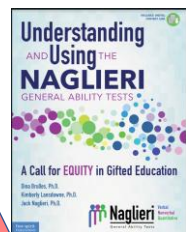
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Numbers of Gifted Students Missed = 1,266,708

Gifted Enrollment by Race and Ethnicity as of 2020 (updated 2024).				
	N in Public Education K-12 in 2020	N Potentially Gifted (8%; 92 percentile)	N Students in gifted programs	Difference Between Potential and Identified
White	23,834,458	1,906,757	1,937,350	30,593
Black	7,754,506	620,360	330,774	-289,586
Hispanic	14,337,467	1,146,997	600,498	-546,499
Native Americans	748,000	59,840	26,700	-33,140
Two or More Races	1,641,817	131,345	105,371	-25,974
Total Non-Whites	24,481,790	1,958,543	1,063,343	-895,200

1. Representation Ratio formula: $N \text{ in Gifted Education} / \text{Potential } N \text{ in Gifted Education}$.
 2. Total Enrollment data from Table 203.60. Enrollment and percentage distribution of enrollment in public elementary and secondary schools, by race/ethnicity and level of education: Fall 1999 through fall 2027. <https://nces.ed.gov/ipeds/data/ipeds-tables/ipeds2027-tables/203.60.asp>
 3. Gifted Enrollment data from Table 204.80. Number of public-school students enrolled in gifted and talented programs, by sex, race/ethnicity, and state: Selected years, 2004 through 2013-14. <https://nces.ed.gov/ipeds/data/ipeds-tables/ipeds2027-tables/204.80.asp>
 4. From: Brulles, D., Lansdowne, K. & Naglieri, J. A. (2022). *Understanding and Using the Naglieri General Ability Tests: A Call to Equity in Gifted Education*. Minneapolis, MN: Free Spirit Publishing.
 5. Native American data from: Steven C. Haas, Associate Director, Indigenous Students Leap Ahead (ISLA) Project.

Percent of Schools that do not Identify	41.5%
Additional non-white gifted students = 41.5% of 895,200	N = 371,508
Total non-white gifted students missed	N = 1,266,708



895,200

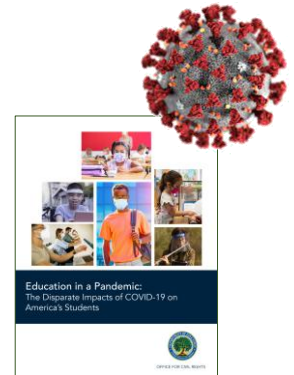
371,508

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Academic Learning Loss & COVID

- COVID-19 has increased the impact of disparities in access and opportunity for students of color and they are even further behind than they were before.
- Their **scores on traditional intelligence tests** which demand knowledge **are even more inaccurate.**
- **Solutions:**
 - For traditional tests, use post-COVID norms only.
 - Use intelligence tests that are not dependent upon knowledge



Education in a Pandemic: The Disparate Impacts of COVID-19 on America's Students. US Dept. of Ed- Office of Civil Rights. June, 21, 2021. <https://www2.ed.gov/about/offices/list/ocr/docs/20210608-impacts-of-covid19.p>

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The **test** you choose and **method** you use *determines* the results you receive, the decisions you make, and the future of your students

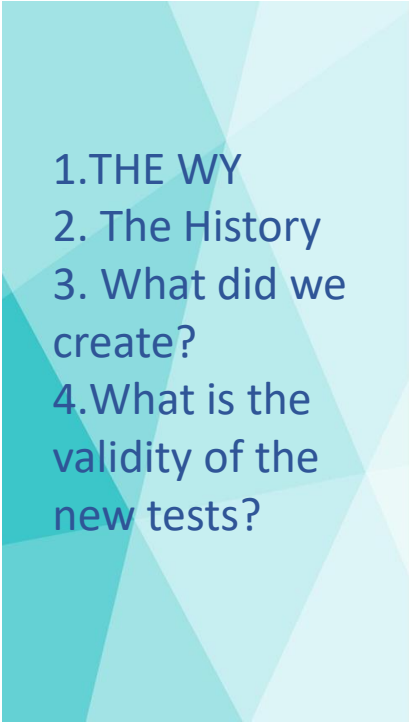
That is the *Practical Impact* of test selection

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Time for your Thoughts and Questions

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- 
1. THE WY
 2. The History
 3. What did we create?
 4. What is the validity of the new tests?

We created a test of
general ability

Universal assessment

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The Full Scale scores from all these tests are a good measure of general ability

1. **WISC-V** (Canivez, et al., 2017)
2. **WAIS-IV** (Canivez, et. A, (2010)
3. **WISC-IV Spanish** (McGill & Canivez, (2017)
4. **Canadian WISC-V** (Watkins, et al., 2017)
5. **Stanford-Binet -Fifth Edition** (Canivez, 2008)
6. **Cognitive Abilities Test** (Cucina & Byle, 2017)
7. **Universal Nonverbal Intelligence Test** (Benson, et al., 2020)
8. **Differential Ability Scales-Second Edition** (Canivez & McGill, 2016)
9. **Woodcock-Johnson IV Cognitive** (Dombrowski, McGill & Canivez (2017)
10. **Kaufman Assessment Battery for Children-II** (McGill & Spurgin, 2017)
11. **CHC model** - Carroll's Factor-Analytic Studies (Benson, et al. 2018)
12. **Reynolds Intellectual Assessment Scales** – (Nelson, et al, 2007)

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The Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative



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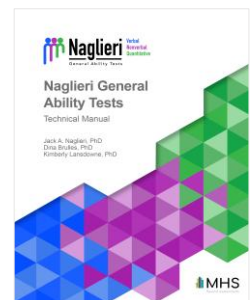
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Phone: 214.908.7769



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2016 – 2022 Developmental Process

Naglieri General Ability Tests  **Naglieri** Verbal Nonverbal Quantitative

- We **explicitly made tests for equitable identification** of students from diverse cultural, linguistic, or socioeconomic backgrounds
- We used the traditional Verbal, Nonverbal and Quantitative formats to **measure general ability** using:
 - Test questions that do not require academic knowledge,
 - Verbal and Quantitative test questions that can be solved using any language,
 - Animated instructions remove the need for comprehension of directions,
 - A multiple-choice response removes the need for verbal expression.
 - Online (and paper) administration for group or individual assessment
 - Universal assessment using local and national norms

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Our View of Gifted Students

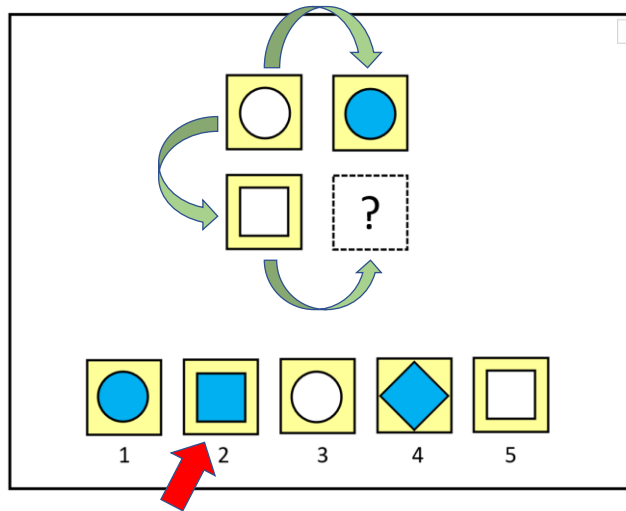
- Gifted = very smart
- Talented = very accomplished
- **You can't tell by looking ! !**
- Find gifted students by using an intelligence test that measures **THINKING rather than KNOWING**
- Find talented students by using an achievement test
- **Universal testing** ensures that all students have an opportunity



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Tests that Measure Thinking or Knowing?



Girl is woman as
boy is to man ?

3 is to 6 as
5 is to 10 ?

C⁷ is to F as
E⁷ is to A ?

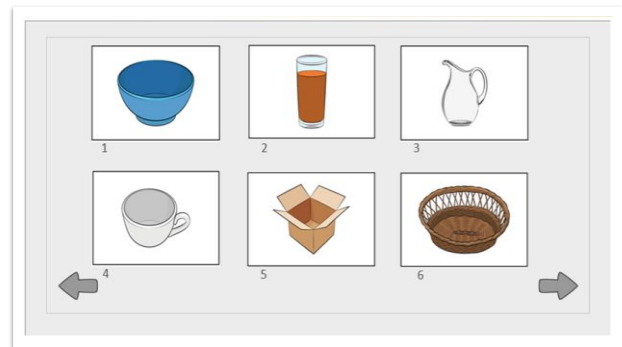
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The **Naglieri-V** measures **general ability** using pictures of objects representing verbal concepts. The items are comprised of universally recognized pictures that do not rely on knowledge acquired in academic settings.

The student's task is to identify which of the six pictures does *not* represent the verbal concept shared by the other five.

The test items require close examination of *the relationships among the pictures*.



 **Naglieri** | Verbal
General Ability Tests

*Naglieri General Ability Test – Verbal
(Naglieri & Brulles)*

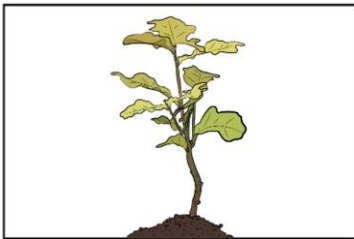
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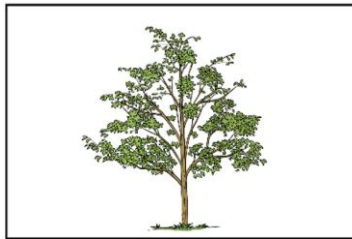
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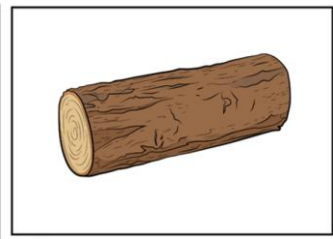
Verbal

1st Gr. Easy

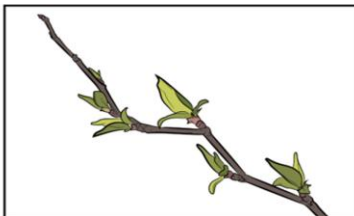
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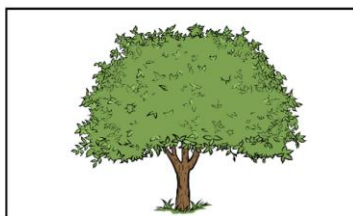
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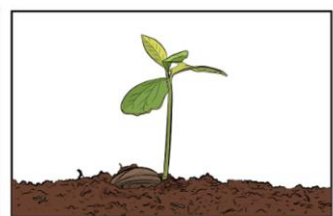
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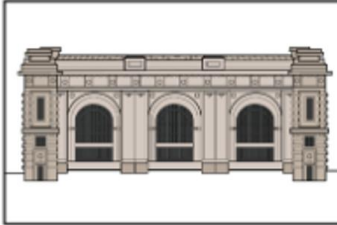
6

34

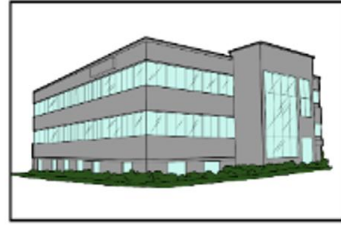
6th Gr. Hard – discuss each option



1



2



3



4



5



6

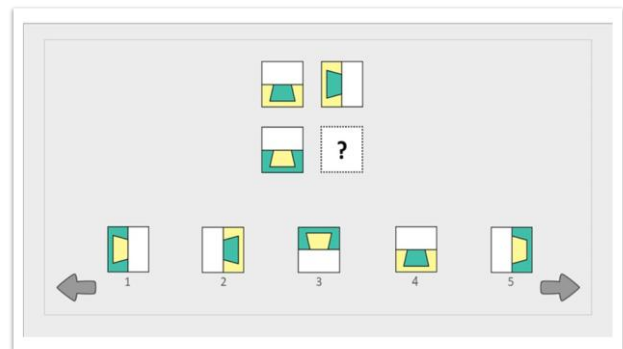
 **Naglieri** | Verbal
General Ability Tests

35

The **Naglieri-NV** measures **general ability** using questions that require a student to recognize the relationships among the shapes.

The structure of the items varies, but all items require that the student decipher the logic behind *the relationships among the shapes*, sequences, spatial orientations, patterns, and other distinguishing characteristics.

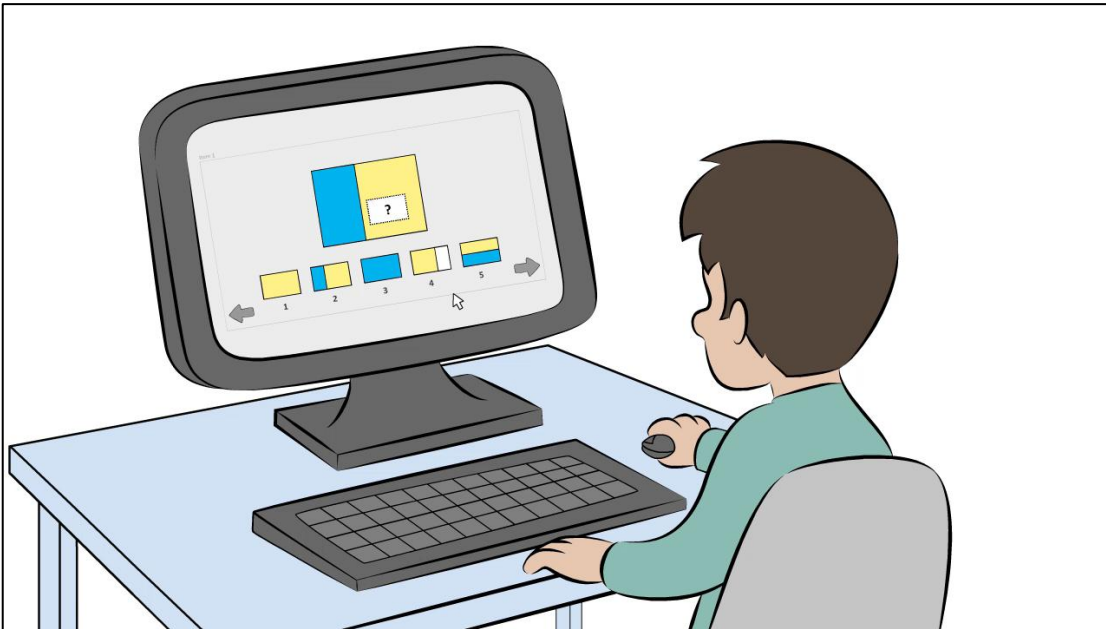
This nonverbal test is conceptually similar to the NNAT3 but it contains many **NEW** kinds of items not included before.



 **Naglieri** | Nonverbal
General Ability Tests

*Naglieri General Ability Test – Nonverbal
(Naglieri)*

36

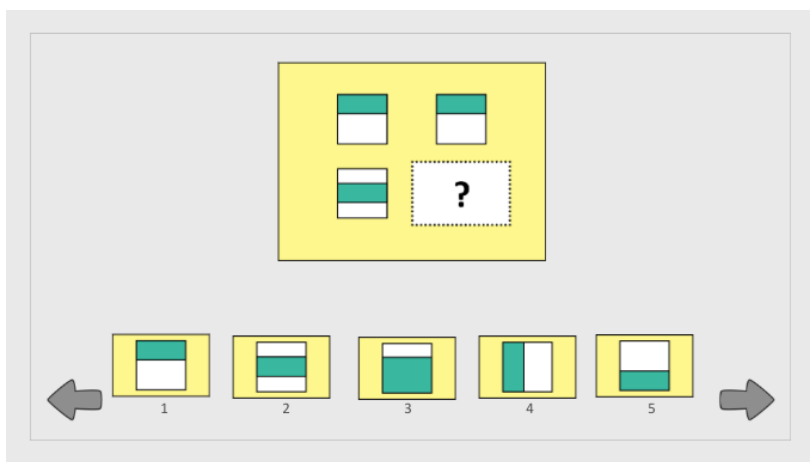


37

37

6th Gr.

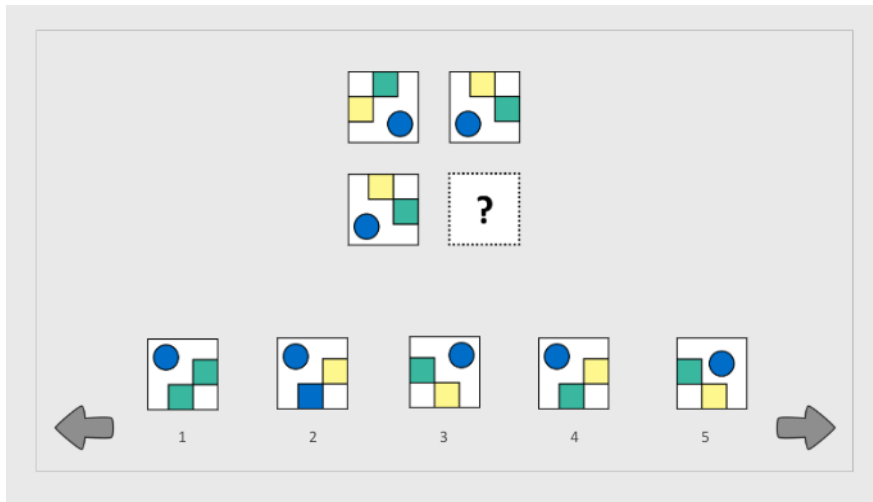
Easy



38

6th Gr.

Hard


 **Naglieri**
General Ability Tests

Nonverbal

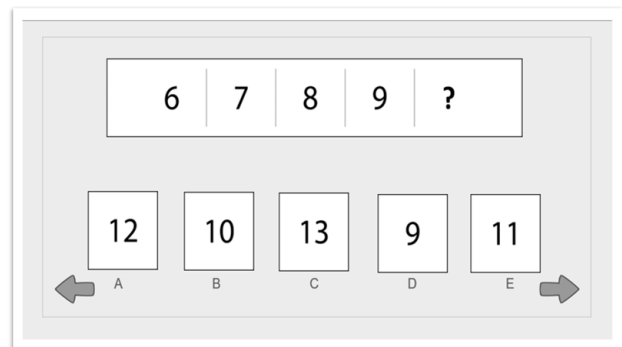
39

The **Naglieri-Q** measures **general ability** using numbers and/or symbols. Students must decipher the logic behind the relationships among the numbers and symbols to identify the answer.

Items require the student to determine equivalency of simple quantities, analyze a matrix of numbers and solve mathematical sequences.

Items require minimal academic knowledge, and the calculation requirements are simple.

The items have no verbal requirements (i.e., no math word problems) so that they can be solved regardless of the language used by the student.


 **Naglieri**
General Ability Tests

Quantitative

*Naglieri General Ability Test – Quantitative
(Naglieri & Lansdowne)*

40



41

41

Naglieri General Ability Tests-Grade 1-Easy

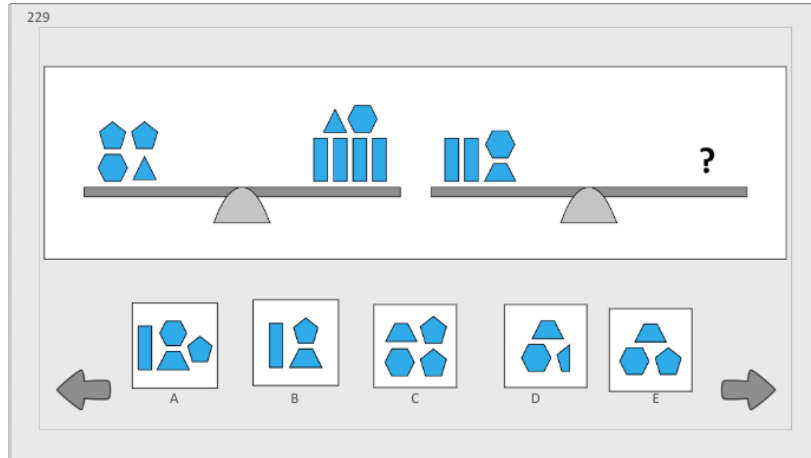
157

6	7	8	9	?
---	---	---	---	---

12	10	13	9	11
A	B	C	D	E

42

Naglieri General Ability Tests-Grade 1-Hard



 **Naglieri** | Quantitative
General Ability Tests

43



 **Naglieri** | Quantitative
General Ability Tests

*Naglieri General Ability Test – Quantitative
(Naglieri & Lansdowne)*

44



Now that you have seen examples of the items, what do you think ?

45

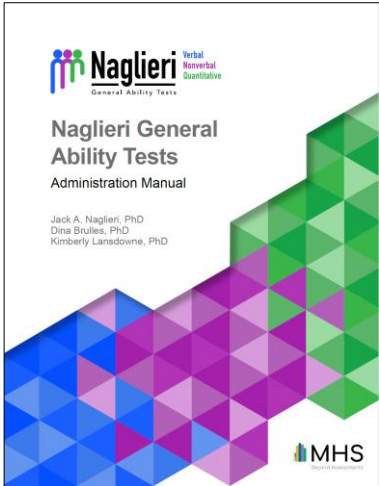
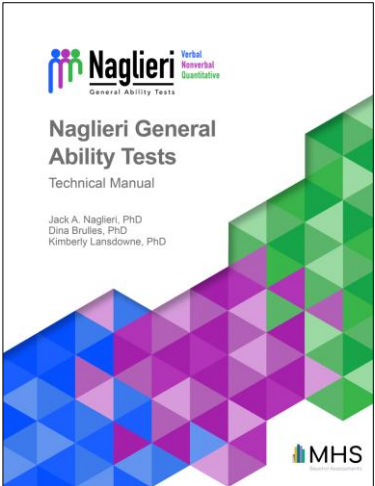
1. THE WY
2. The History
3. What did we create?
4. What is the validity of the new tests?
5. How to use the Naglieri V, NV & Q

We created a test of general ability

Multiple types of evidence

46

Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative Technical and Administration Manuals



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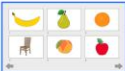
About the Tests

The verbal, nonverbal, and quantitative content on each of the Naglieri General Ability Tests™ gives students multiple opportunities to show their ability. The tests were developed to allow students to answer the questions using any language.

The Naglieri General Ability Tests-Verbal uses pictures that represent verbal concepts. The student needs to figure out what verbal concept is shared by five of the pictures to select which picture does not represent the concept.

The Naglieri General Ability Tests-Nonverbal uses questions that are presented using shapes and diagrams. The student needs to find the relationships among shapes, their color and other features to figure out which answer completes the pattern.

The Naglieri General Ability Tests-Quantitative uses numbers and shapes that are arranged in a pattern. The student needs to identify patterns and sequences of basic math concepts.



Score Type	Description
National Percentile Rank	A score that compares a student to a national sample of students in the same grade using scores that range from 1st (low) to 99th (high). For example, a 90th percentile rank would mean that the student earned a score that was equal to or greater than 90% of students in the national sample.
National Stanine	A score that compares a student to a national sample of students in the same grade using scores that range from 1 (low) to 9 (high).
National Standard Score	A score that compares a student to a national sample of students in the same grade using scores that range from 55 (low) to 145 (high).
Total Score	A score that compares a student to a national sample of students in the same grade based on any combination of the tests.

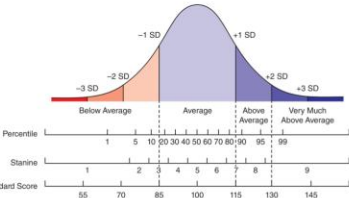
Copyright © 2024 Multi-Health Systems, Inc. (MHS, Inc.). All rights reserved. 

Student Name: John Tigerwood
Student ID: 123456
Grade: 3
School: Manhattan Public School
School District: Dovercourt Public District School Board



Individual Report

John recently took the Naglieri General Ability Tests™. The tests measure general ability using verbal, nonverbal, and quantitative questions that were created to provide students an equal opportunity to show their ability. The Naglieri General Ability Tests compare each student to their peers. The figure below shows how most students in the sample score. Scores that are within the "Average" category (middle of the graph) occur most often. Scores above or below this range occur less often. Above Average scores indicate high general ability. The score profile is found in the table below. Note that if only one test was administered, a Total Score cannot be calculated.



Note. SD= Standard Deviation.

Test	Date Tested (YYYY-MM-DD)	National Percentile Rank	National Stanine	National Standard Score
Naglieri-Verbal	2024-01-01	85th	7	118
Naglieri-Nonverbal	2024-01-10	90th	8	121
Naglieri-Quantitative	2024-01-03	92nd	8	126
Total Score		91st	8	122

For more information on the Naglieri General Ability Tests™, scan the QR code or view: [URL: _____](#) 

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Response Style Indicator Legend	
CompletionTime	The amount of time in minutes from when the student started the items to when they timed out or submitted the test.* If a student responded to all items within a test in two minutes or less, a flag will appear to indicate an unusually fast response style. "-" indicates that there is no flag.*
CompletionTimeFlag	
OmittedItems	The number of items the student viewed but did not answer before they timed out or submitted the test.
Omitted Items Flag	If a student omitted a certain number of items on the test, a flag will appear. For students in Kindergarten and Grade 1, the warning appears if they omit 10 or more items on the test and for students in Grades 2 to 6, the warning appears if they omit 5 or more items on the test. "-" indicates that there is no flag.
Identical Responses	The number of identical responses (e.g., selecting option 2) a student provided in a row.
Identical Responses Flag	If a student provided identical responses to 10 or more consecutive items on the test, a flag will appear. "-" indicates that there is no flag.
Inconsistent Responses	The ratio between the number of correct responses for harder items and the number of correct responses for easier items.
Inconsistent Responses Flag	If a student has a smaller ratio (i.e., values below 0.8) a flag will appear which indicates that the student correctly answered more of the difficult items on the test compared to the easier items. "-" indicates that there is no flag.
Score Legend	
Attempted	Indicates if the student completed the test. CBS (Cannot Be Scored) indicates a test was not completed or attempted, and therefore no score can be calculated.
DateTested	The date the student completed the test.
TimedOut	Indicates if the student timed out of the test before completing all the items.
ItemsAttempted	The number of items the student attempted before they timed out or submitted the test.
RawScore	The sum of the items answered correctly on a specific test, up to the point where the discontinue rule is met.
PercentileRank	The percentage of students in the norm sample who obtained the same or lower score than the score obtained by the student.
Stanine	The value a student ranks out of nine broad categories.
StandardScore	The student's ability, relative to the average of the norm sample.
ConfidenceInterval	This shows a range of values based on the standard score that you can be 95% confident contains the student's true score.
Total	When a student has completed all three tests, a Total Score based on all three tests is computed. When a student has completed only two tests, a Total Score based on the two-test combination is computed.
Additional Information Legend	
-1	Indicates a student never saw the item
Duplicate	Indicates that 2 or more of the same test records exist for this student ID. The most recent record has been scored.
*Note: If the timer is turned off on the student's test, the completion time will only reflect the time spent in the test before the timer was turned off. This may result in a completion time flag if the timer was turned off before 2 minutes.	

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Research Evidence of Validity

Selvamenan, M., Paolozza, A., Solomon, J., Naglieri, J. A., & Schmidt, M. T. (Psychology in the Schools, 2004). Race, Ethnic, Gender, and Parental Education Level Differences on Verbal, Nonverbal, and Quantitative Naglieri General Ability Tests: Achieving Equity.

Received 20 November 2022 | Revised 20 March 2024 | Accepted 28 August 2024
DOI: 10.1002/psp.2324

RESEARCH ARTICLE

WILEY

A pilot study of race, ethnic, gender, and parental education level differences on the Naglieri General Ability Tests: Verbal, Nonverbal, and Quantitative

Mathangi Selvamenan PhD¹ | Angelina Paolozza PhD² | Joanna Solomon MS³ | Jack A. Naglieri PhD²

¹Wake Health Systems, Winston-Salem, North Carolina
²Virginia Mason University, Fairfax, Virginia, USA
³University of Virginia, Charlottesville, Virginia, USA

Abstract
This study was conducted to examine the relationships between general intelligence test scores and race, ethnicity, gender, and parental education using the Naglieri General Ability Tests: Verbal, Nonverbal, and Quantitative (Naglieri & Brubaker, 2002) for three samples that closely match the US population. Race differences were found on the preliminary version of the Verbal (Naglieri & Brubaker, 2002; N = 2,482), Quantitative (Naglieri & Brubaker, 2002; N = 2,482), and Nonverbal (Naglieri, 2002; N = 2,482) Naglieri General Ability Tests. These initial findings suggest that this approach to measuring general ability may ultimately have utility for equitable identification of students from diverse backgrounds for possible inclusion in gifted educational programs.

KEYWORDS
equitable assessment, gifted intelligence tests, Naglieri General Ability Tests, verbal, nonverbal, quantitative, race differences

Practitioner points
• **Hispanic Performance Differences:** The study found that, by addressing language and academic knowledge demands in test content and instructions on the Naglieri General Ability Tests: Verbal, Quantitative, and Nonverbal,

NONVERBAL TEST



- N= 3,630 Sample closely matches the US population on key demographics
- **No GENDER differences** found between **males and females** for raw score across all forms
- **No RACE/ETHNICITY differences** among **White, Black, & Hispanic** for raw score across all forms
- **No PARENTIAL EDUCATIONAL 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

VERBAL TEST



- N= 2,482 Sample closely matches the US population on key demographics
- **No GENDER differences** found between **males and females** for raw score across all forms
- **No RACE/ETHNICITY differences** among **White, Black, & Hispanic** for raw score across all forms
- **No PARENTIAL EDUCATIONAL 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 TEST

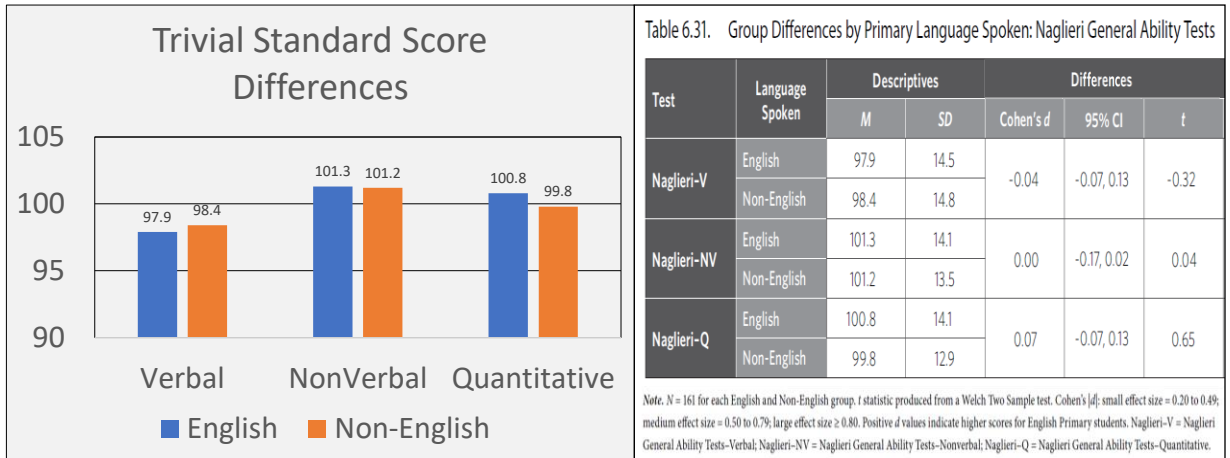


- N= 2,841 Sample closely matches the US population on key demographics
- **No GENDER differences** found between **males and females** for raw score across all forms
- **No RACE/ETHNICITY differences** among **White, Black, & Hispanic** for raw score across all forms
- **No PARENTIAL EDUCATIONAL differences** 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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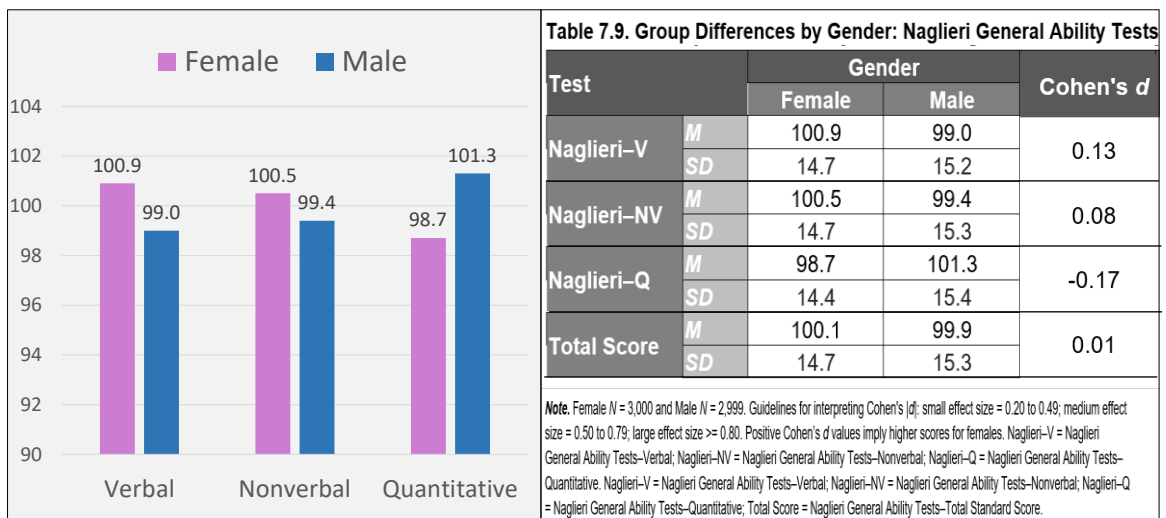
Group Differences by Primary Language Spoken



51

51

Female (N = 3,000) Male (N = 2,999) Differences



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Urban and Suburban Childrens’ Performance on the Naglieri Verbal, Nonverbal and Quantitative General Ability Tests

Naglieri, Farmus & Brulles (submitted for publication, July 2025)

Abstract

The purpose of this study was to examine general intelligence test scores among children in urban and suburban settings using the Naglieri General Ability Tests: Verbal, Nonverbal, and Quantitative (Naglieri, Brulles, & Lansdowne, 2021). The two samples included children aged 4–17 years who were closely matched to the U.S. population based on gender, race, ethnicity, geographic region, and parental education level. Few differences were found on preliminary versions of the Naglieri General Ability Tests—Verbal (Naglieri & Brulles, 2021; N = 2,078), Nonverbal (Naglieri, 2021; N = 1,665), and Quantitative (Naglieri & Lansdowne, 2021; N = 1974). These findings suggest that this approach to measuring general ability may have utility for more equitable identification of students from diverse backgrounds for possible inclusion in gifted education programs.

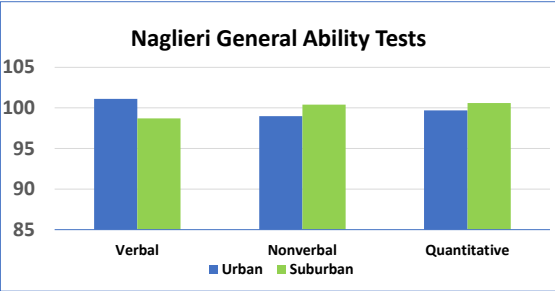


Table 2				
Comparison of Urban vs Suburban Mean Scores Across Verbal, Nonverbal, and Quantitative Test Types				
	N	Urban M (SD)	Suburban M (SD)	M Diff (95% CI)
Verbal	2078	101.07 (14.96)	98.71 (14.83)	2.36 (1.06, 3.66)
Nonverbal	1665	99.02 (13.73)	100.38 (15.46)	-1.36 (-2.91, 0.17)
Quantitative	1974	99.71 (14.69)	100.61 (15.04)	-0.90 (-2.25, 0.46)

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POST COVID National Norms AND Local Norms

Grade-based National Norms 1,000 students pre grade (K to grade 5).

Table 1. National Norm Sample Characteristics.

Demographic		N	%	U.S. Census (%)	Difference (%)
Race/Ethnicity	Asian	235	3.9	4.7	-0.8
	Black	919	15.3	12.9	2.4
	Hispanic	1,261	21.0	23.3	-2.3
	White	2,914	48.6	46.1	2.5
	Other	671	11.2	12.9	-1.7
U.S. Region	Northeast	804	13.4	15.9	-2.5
	Midwest	1,270	21.2	20.2	1.0
	South	2,328	38.8	38.1	0.7
	West	1,598	26.6	25.7	0.9
Total National Norm Sample		6,000	100.0		

Note. U.S. population derived from the 2019 American Community Survey.⁴

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Summary of Reliability, Validity and Fairness

- The Naglieri–V items were subjected to a cultural review
- **Reliability coefficients** for the Verbal, Nonverbal and Quantitative tests were **high and exceed guidelines** for test reliability
- Confirmatory factor analysis of the three tests, independently and in combination supported a broad factor **of general ability**
- The Naglieri–NV correlated significantly **with the NNAT3**
- **Gifted students scored considerably higher** than students from the general population
- All test ITEMS were inspected for fairness by gender, race, ethnicity, parental education level (PEL), and primary language spoken using differential item functioning (DIF) and analyses of covariance; **negligible to small differences were found**
- Overall, initial findings suggest that the Naglieri General Ability Tests meet guidelines for reliability, validity, and fairness

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Naglieri Verbal, Nonverbal & Quantitative

- Each of the three tests were designed to assess *general ability* - a well documented concept in psychology.
- Each test score may be considered independently or in combination with the other tests to measure a student's general ability.
- A student may be referred for gifted program consideration based on exceptional performance in any of the three tests, or on the overall total score derived from any combination the tests.

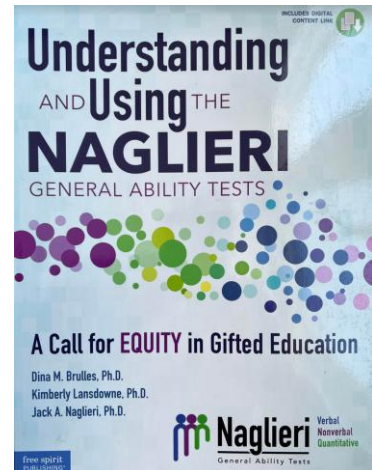
HOW TO USE THE NAGLIERI
VERBAL, NONVERBAL & QUANTITATIVE

			VERBAL
NONVERBAL			☐ ☒ ☐ ☐
QUANTITATIVE			135 ?

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Serving All Gifted Learners

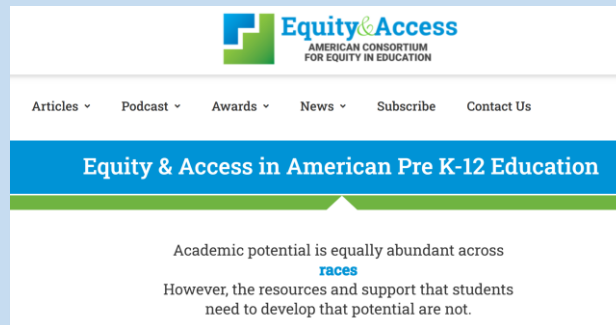
- Following identification, how can we create more equitable and inclusive gifted programs and services?
- Schools must expand their views, procedures and practices on programs for gifted learners such as:
 - Cluster Grouping
 - Honors Classes
 - Enrichment Classes
 - Self-contained Programs
- See our book for details!



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American Consortium for Equity in Education 2024 Awards



<https://www.ace-ed.org/>

Diversity and Inclusion Solution – PreK-12

Naglieri General Ability Tests



Author, Speaker, or Consultant of the Year

Dr. Jack Naglieri, Dr. Dina Brulles, and Dr. Kimberly Lansdowne



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WE CAN DO

BETTER

Must do Better

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1. THE WY
2. The History
3. What did we create?
4. What is the validity of the new tests?
5. How to use the Naglieri V, NV & Q

We created a test of
general ability

Multiple types of evidence

60

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.
- "I like to read books all day long,"
- He says. "I'm the only one I know that writes stories. It's a special secret I keep."



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Wall Street Journal

- 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 there were problems
- Devion is NOT getting good grades in school
- He is uncooperative
 - Devion's teacher recently told the class to write to Mickey Mouse, congratulating the cartoon character on his 75th birthday. "Second-graders have to learn how to write a friendly letter," she said.
 - Devion said the assignment bored him. He said: "I could write 100 pages about Pokemon. A whole book."
- His teacher did not think he should

What happened to Devion?

62

Devion Graduates High School



63

63

Devion Graduates High School



64

64



We do the best we can with
what we know, and when we
know better, we do better.

— Maya Angelou —

Change
Demands
Courage to
Think
Differently

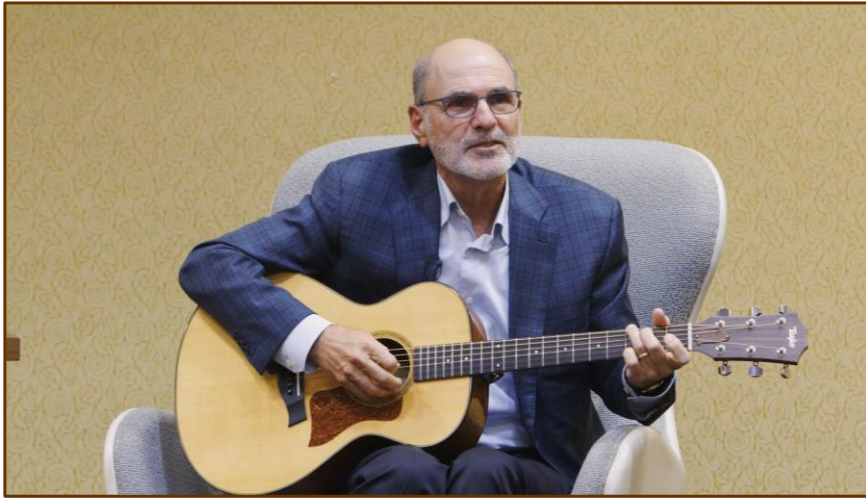
Identification of *ALL* gifted students requires self-reflection and
self-correction in response to current research

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**Time for final
Thoughts,
Questions and
Answers**

66

Maybe It's Time to Let the Old Ways Die



**Thank
You !**

NYASP 2022
Legends in
School
Psychology
Award
Interview

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Assessment Methods and Likely Outcomes

1. **Teacher and/or parent referral** will not result in equitable identification
2. **Universal assessment** with traditional tests that requires knowledge (8-point CogAT or MAP achievement tests) will not result in equitable identification
3. **Universal assessment** with tests that measure ability separately from knowledge (e.g., NNAT, Naglieri General Ability Tests; 5-point difference) **followed by** the WISC-V (12-point race difference) will not result in equitable identification
4. **Universal assessment** with tests that measure ability separately from knowledge (e.g., NNAT, Naglieri General Ability Tests; 5-point difference) followed by an intelligence test that does not require knowledge (e.g., Cognitive Assessment System-Second Edition; 4-point difference) will result in equitable identification

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