

Equity in Gifted Education Using the Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative

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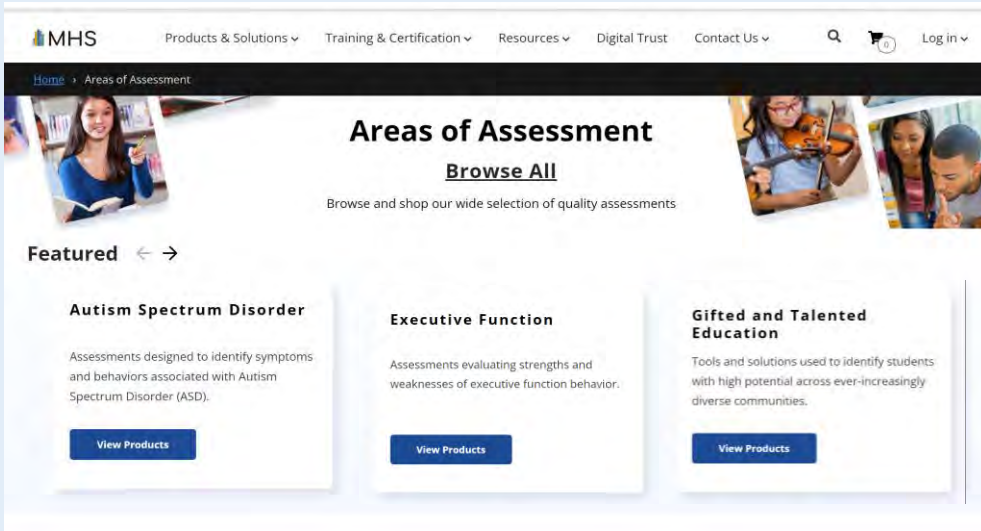


FOR MORE INFORMATION PLEASE GO TO MY WEB PAGES

The screenshot shows the website's home page. At the top left is a QR code. Next to it is the logo 'Naglieri Verbal Nonverbal Quantitative General Ability Tests'. Below the logo is a navigation menu with links for HOME, AUTHORS, ABOUT, WEBINARS, RECENT HANDOUTS, FAQs, and MORE. The main content area features a large image of colorful pencils with the text 'EQUITABLE ASSESSMENT OF GIFTED STUDENTS USING THE Naglieri General Ability Tests Now Available'. Below this is a section titled 'WHY WE DO WHAT WE DO' with two sub-sections: 'Inequity in Gifted Testing' and 'Achieving Equity'. The 'Inequity in Gifted Testing' section states that more than 950,000 African-American, Hispanic, and Native American students in K-12 public school today could have been identified for gifted programs but were not. The 'Achieving Equity' section mentions that the Naglieri General Ability Tests were explicitly developed to address the need for equitable assessment of gifted students from diverse cultural, linguistic, and socioeconomic backgrounds.

The screenshot shows the website 'JACKNAGLIERI.COM' with the tagline 'TOOLS FOR PSYCHOLOGICAL AND EDUCATIONAL ASSESSMENT'. It features a welcome message from Jack A. Naglieri, PhD, and a grid of featured content including 'NAGLIERI GENERAL ABILITY TESTS: VERBAL, NONVERBAL AND QUANTITATIVE', 'WEBINARS', 'RECENT FYI', 'RESEARCH & EVALUATION', and 'HELPFUL RESOURCES & ARTS'. Each item includes a small thumbnail image and a brief description.

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Autism Spectrum Disorder

Assessments designed to identify symptoms and behaviors associated with Autism Spectrum Disorder (ASD).

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Executive Function

Assessments evaluating strengths and weaknesses of executive function behavior.

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Gifted and Talented Education

Tools and solutions used to identify students with high potential across ever-increasingly diverse communities.

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1. Why are we here?
2. What did we discover?
3. What solution did we create?

4

4



Clarification
of Terms

Gifted ✦ Very Smart

Talented ✦ Very Accomplished

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One Definition of Gifted & Talented

- “Giftedness designates the possession and use of untrained and spontaneously expressed natural abilities (*called aptitudes or gifts*), in at least one ability domain (e.g. *intellectual, creative, socio-affective, perceptual/motor, and ‘others’*)...”
- “By contrast, ‘talent’ designates the superior mastery of systematically developed abilities (*or skills*) and knowledge in at least one field of human activity.”



Francois Gagné

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A Few Differences Between a... Bright Child & Gifted Child

Knows the answer	Asks questions
Is interested	Is highly curious
Works hard	Plays around, yet tests well
Answers the questions	Discusses in detail, elaborates
Top of the group	Beyond the group
Learns with ease	Already knows
Understands ideas	Constructs abstractions
6-8 Repetitions for mastery	1-2 Repetitions for mastery
Grasps the meaning	Draws inferences
Completes the assignments	Initiates projects
Is receptive	Is intense
Copies accurately	Creates a new design
Enjoys school	Enjoys learning ⁷
Enjoys straightforward, sequential learning	Thrives on complexity

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Profiles of Gifted Learners

- Creatively gifted people
- Gifted Perfectionists
- Highly and profoundly gifted
- Culturally & linguistically diverse gifted students
- Twice-exceptional gifted students
- Non-productive gifted students
- High ability / high achieving students



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General Ability

General ability is what allows us to solve many different kinds of problems which 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.*

The key is to measure general ability in a way that is not confounded by knowledge

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1. Why are we here?
2. What did we discover?
3. What solution did we create?

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Did you know...

- The origin of the most widely used intelligence tests?
- That the most widely used group and individual intelligence tests measure vocabulary knowledge and include Arithmetic word problems like those found on achievement tests?
- Does that feel right?

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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	Month	Day
Date Tested			81	2	74
Date of Birth			74	4	26
Age			7	4	18

VERBAL TESTS		PERFORMANCE TESTS	
Information	Similarities	Arithmetic	Vocabulary
19	18	17	16
18	17	16	15
17	16	15	14
16	15	14	13
15	14	13	12
14	13	12	11
13	12	11	10
12	11	10	9
11	10	9	8
10	9	8	7
9	8	7	6
8	7	6	5
7	6	5	4
6	5	4	3
5	4	3	2
4	3	2	1
3	2	1	0
2	1	0	-1

*See Chapter 4 in the manual for a discussion of the significance of differences between scores on the tests.

NOTES: Σ = 9.4

		Raw Score	Scaled Score
VERBAL TESTS			
Information	3	3	
Similarities	0	2	
Arithmetic	4	4	
Vocabulary	0	1	
Comprehension	0	1	
(Digit Span)	12	12	
Verbal Score		12	
PERFORMANCE TESTS			
Picture Completion	10	8	
Picture Arrangement	5	5	
Block Design	18	12	
Object Assembly	17	11	
Coding	17	11	
(Matrix)	17	11	
Performance Score			
		Scaled Score	IQ
Verbal Score		12	52
Performance Score		47	95
Full Scale Score		59	72

*Printed 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

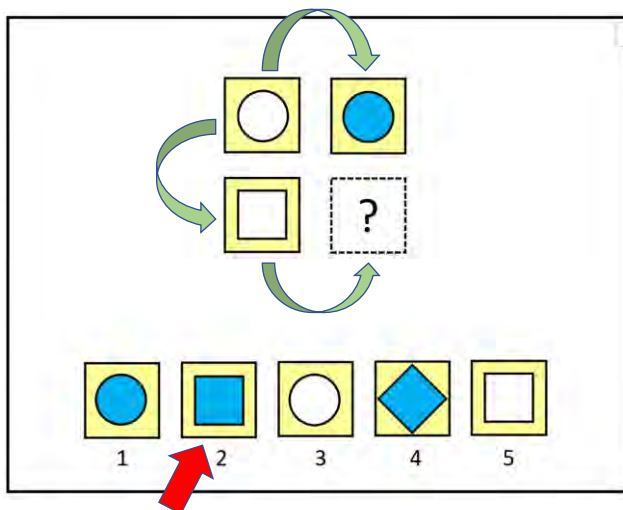
Each of these versions of the NNAT showed similar scores by RACE, ETHNICITY, & SEX and had strong correlation with achievement

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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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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How to Evaluate Thinking vs Knowing

What does the examinee have to know to complete a task?

- This is dependent on *instruction*



How does the student have to think to complete a task?

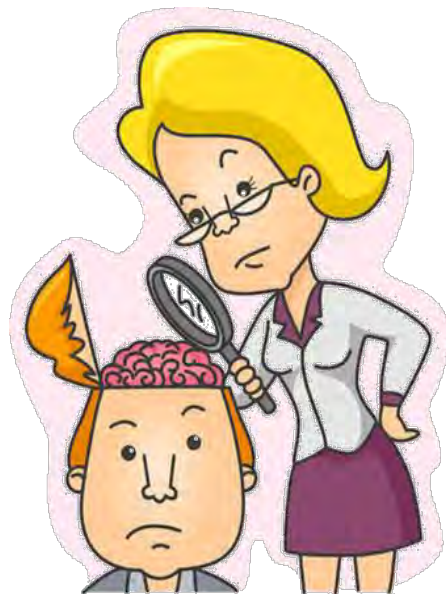
- This is dependent **seeing how ideas or things are related to one another** and some tasks just demand remembering



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Why do we measure intelligence the way we do?

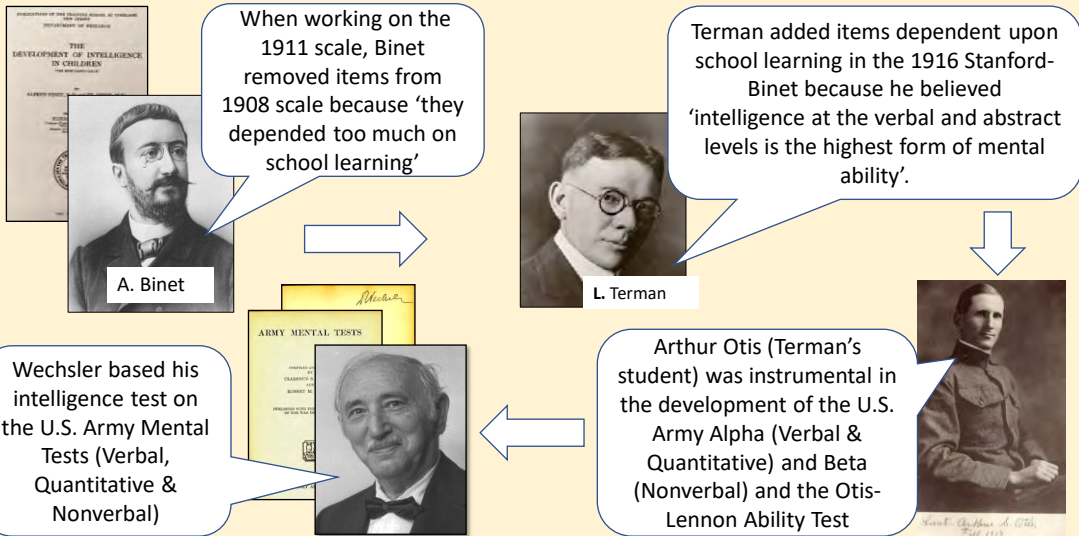
The History of IQ tests



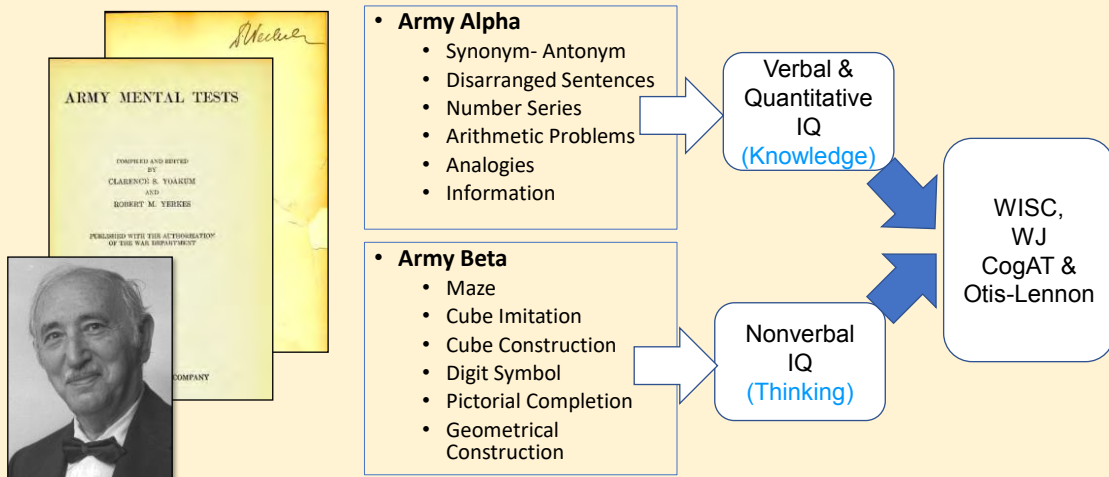
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Binet → Stanford-Binet → Army Mental Tests → WISC, CogAT, Olsat



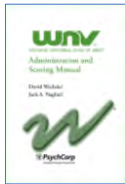
Alpha & Beta → Wechsler



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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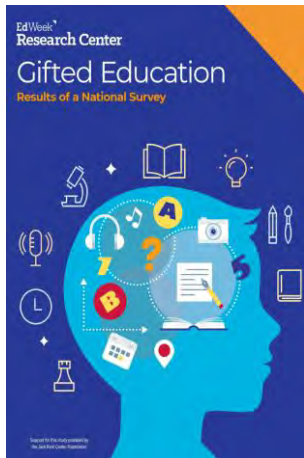
Knowledge is Included in “Ability” Tests

Stanford-Binet-5	WISC-V	WJ-IV	KABC-II	OLSAT	CogAT
<ul style="list-style-type: none"> Verbal Knowledge Quantitative Reasoning Vocabulary Verbal Analogies 	<ul style="list-style-type: none"> Verbal Comprehension Vocabulary, Similarities, Information & Comprehension Fluid Reasoning Figure Weights, Arithmetic 	<ul style="list-style-type: none"> Comprehension Knowledge: Vocabulary & General Information Fluid Reasoning: Number Series & Concept Formation Auditory Processing: Phonological Processing 	<ul style="list-style-type: none"> Knowledge / GC Riddles, Expressive Vocabulary, Verbal Knowledge 	<ul style="list-style-type: none"> Verbal Following directions Verbal Reasoning Quantitative Verbal Arithmetic Reasoning 	<ul style="list-style-type: none"> Verbal Scale Analogies Sentence Completion Verbal Classification Quantitative 45 pages of oral instructions

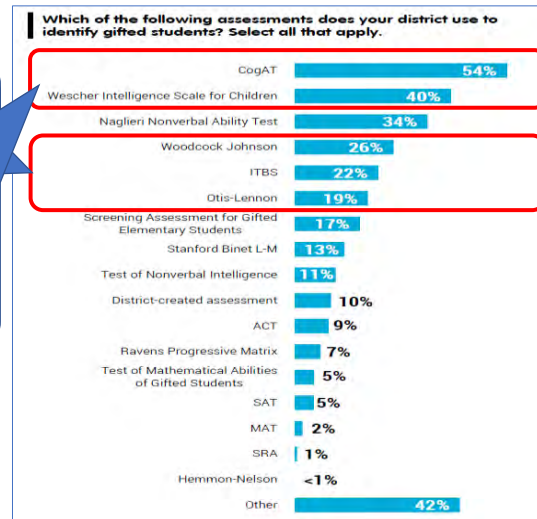
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National Survey of Gifted Education



These tests have verbal and quantitative questions and lengthy verbal directions

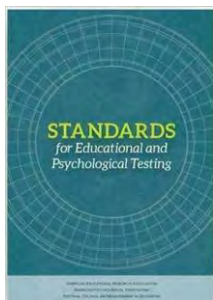


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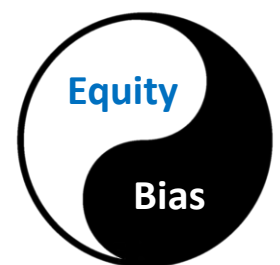
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Test Bias vs Test Equity

According to the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 2014) Psychometric TEST BIAS and EQUITY are two different ways of measuring test fairness.



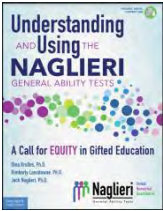
- ... if a person has had limited opportunities to learn the content in a test of intelligence, *that test may be considered unfair* (because it penalizes students for not knowing the answers) even if there is no evidence of psychometric test bias.
- Evidence of EQUITY is examined by test content and mean score differences



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Race and Ethnic Differences for Traditional and Second-Generation Intelligence Tests



Note: The results summarized here were reported for the Otis-Lennon School Ability Test by Avant and O'Neal (1986); Stanford-Binet IV by Wasserman (2000); Woodcock-Johnson III race differences by Edwards and Oakland (2006) and ethnic differences by Sotelo-Dyrega, Ortiz, Flanagan, and Chaplin (2013); CogAT7 by Carman, Walther and Bartsch (2018) and Lohman (2016); WISC-V by Kaufman, Raiford, and Coalson (2016); Kaufman Assessment Battery for Children-II by Lichtenberger, Volkler, 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); Naglieri Nonverbal Ability Test by Naglieri and Ronning (2000), Naglieri General Ability Tests by Naglieri, Briles, and Lansdowne (2022 & 2024) and Selvamayan et al., 2024 (in press).
UPDATED 3.6.24

	By Race	By Ethnicity
TRADITIONAL Tests that require knowledge	9.4	6.4
Otis-Lennon School Ability Test (district wide)	13.6	-
Stanford-Binet IV (normative sample)	12.6	-
CogAT7 Nonverbal	11.8	7.6
WISC-V (normative sample)	11.6	-
WJ- III (normative sample)	10.9	10.7
K-ABC II Fluid-Crystallized Index	9.4	9.8
WISC-V (statistical controls normative sample)	8.7	5.4
K-ABC II Mental Processing Index	8.1	8.2
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
SECOND GENERATION Tests that require minimal knowledge	4.5	2.5
CAS-2 (normative sample)	6.3	4.5
Naglieri General Ability Test-Verbal (Ns= 392 & 709)	6.2	1.0
Naglieri General Ability Test-Quantitative (Ns= 392 & 709)	5.5	4.4
CAS (statistical controls normative sample)	4.8	4.8
Naglieri General Ability Test-Nonverbal (Ns= 392 & 709)	4.4	0.3
CAS-2 (statistical controls normative sample)	4.3	1.8
Naglieri General Ability Test-Quantitative (N = 6,098)	4.3	2.9
NNAT (matched samples)	4.2	2.8
Naglieri General Ability Test-Verbal (N= 5,739)	4.2	1.3
Naglieri General Ability Test-Nonverbal (N=6,887)	3.5	0.9
CAS-2 Brief (normative samples)	2.0	2.8



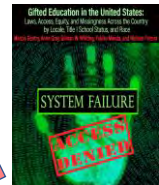
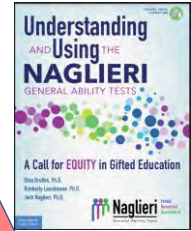
What is the Practical Impact of intelligence tests that are confounded by knowledge?

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 in Gifted Education / Potential N 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 2021. https://nces.ed.gov/ipeds/data/digest/d17/tables/d17_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/digest/d17/tables/d17_204.80.asp
 4. From: Brulles, D., Lamsdowne, 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

1,266,708 Students Missed Would Connect Denver to San Francisco !

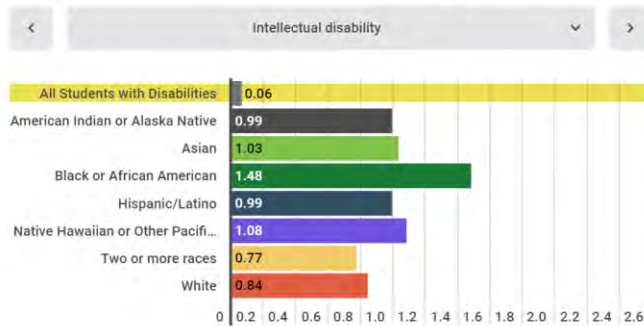




OSEP Fast Facts: Race and Ethnicity of Children with Disabilities Served under IDEA Part B

For the purposes of this fact sheet, racial ethnic groups are defined in the IDEA Part B Child Count and Educational Environments for School Year 2019-2020, OSEP Data Documentation. <https://www2.ed.gov/programs/osepidea/618-data/collection-documentation/data-documentation-files/part-b/child-count-and-educational-environment/idea-partb-childcountandedenvironment-2019-20.pdf>

Risk Ratio of Students with Disabilities by Disability Category and by Specific Race and Ethnicity, Ages 5 (in kindergarten) through 21: SY 2019-20



The relative risk ratio of students with disabilities under IDEA by race and Ethnicity is the probability of a student with a disability being identified for intellectual disability. The higher the number, the larger the probability. Nationally, **Black Students are 1.48 times more likely to be identified with intellectual disability** compared to all students with disabilities.

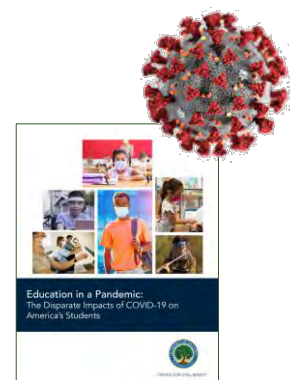
<https://sites.ed.gov/idea/osep-fast-facts-race-and-ethnicity-of-children-with-disabilities-served-under-idea-part-b/>
https://ldaamerica.org/lda_today/disproportionate-identification-of-students-of-color-in-special-education/

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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 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. Why are we here?
2. What did we discover?
3. What solution did we create?

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Reducing Under- representation of Minority Children in Gifted Education –

SENG 2004 Washington DC

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The Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative

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Publisher: MHS

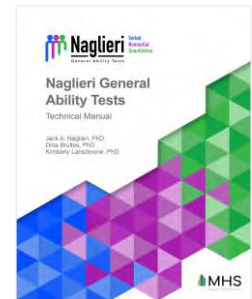
Contact: Debbie.Roby@MHS.com

Phone: 214.908.7769



Learn More

NaglieriGiftedTests.com



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2016 – 2022 Developmental Process

Naglieri General Ability Tests 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

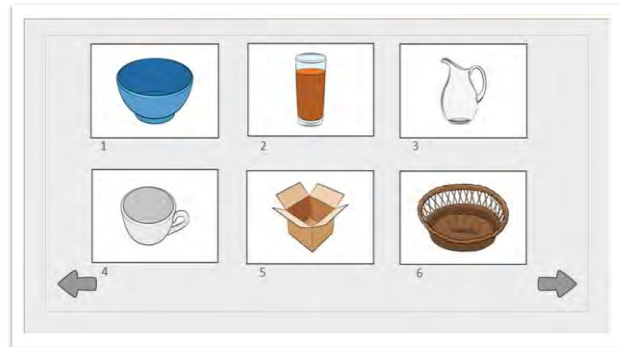
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The Naglieri-V measures **general ability** using pictures of objects representing verbal concepts. The items are comprised of universally recognized pictures that do not rely on knowledge acquired in academic settings.

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 General Ability Test – Verbal
(Naglieri & Brulles)

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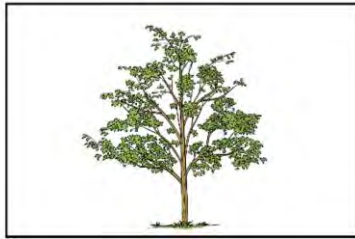
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Verbal

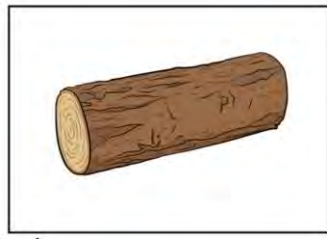
1st Gr. Easy



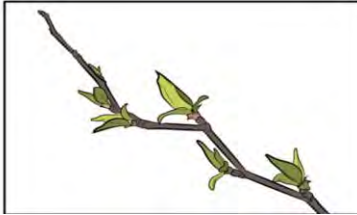
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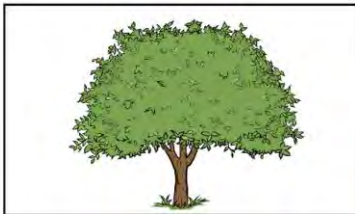
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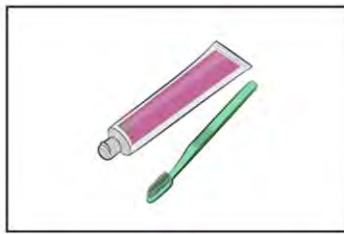
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Verbal

1st Gr. Hard



1



2



3



4



5



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Verbal

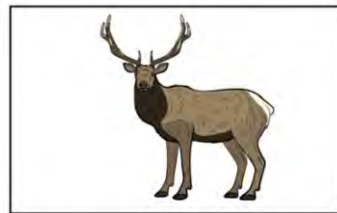
6th Gr. Easy



1



2



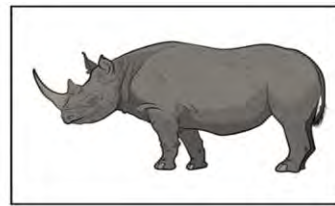
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6

6th Gr. Hard – discuss each option



1



2



3



4



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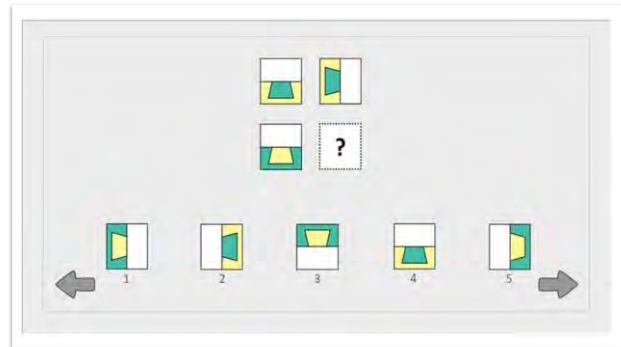


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The Naglieri-NV measures **general ability** using questions that require a student to recognize the relationships among the shapes.

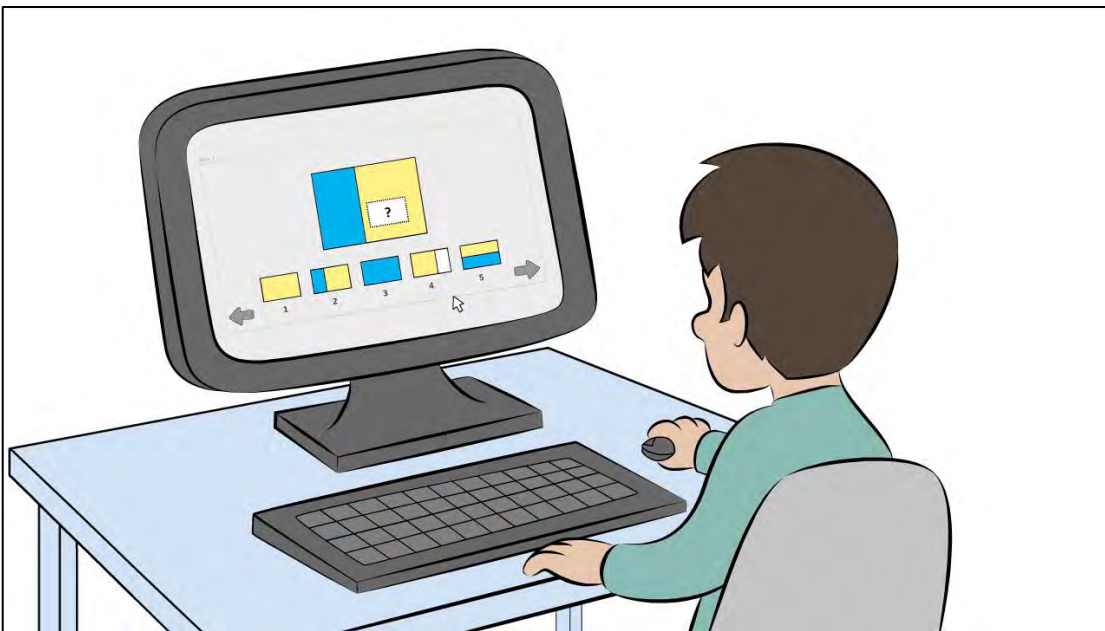
The structure of the items varies, but all items require that the student decipher the logic behind *the relationships among the shapes*, sequences, spatial orientations, patterns, and other distinguishing characteristics.

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



*Naglieri General Ability Test –Nonverbal
(Naglieri)*

43

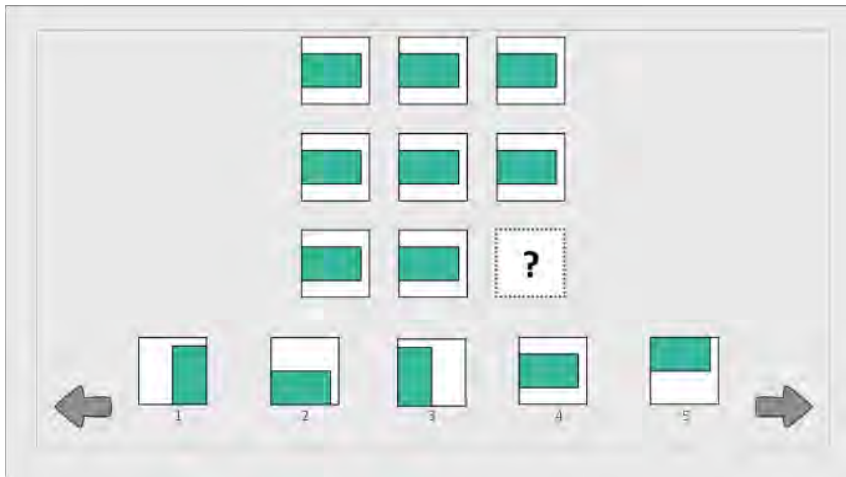


44

44

1st Gr.

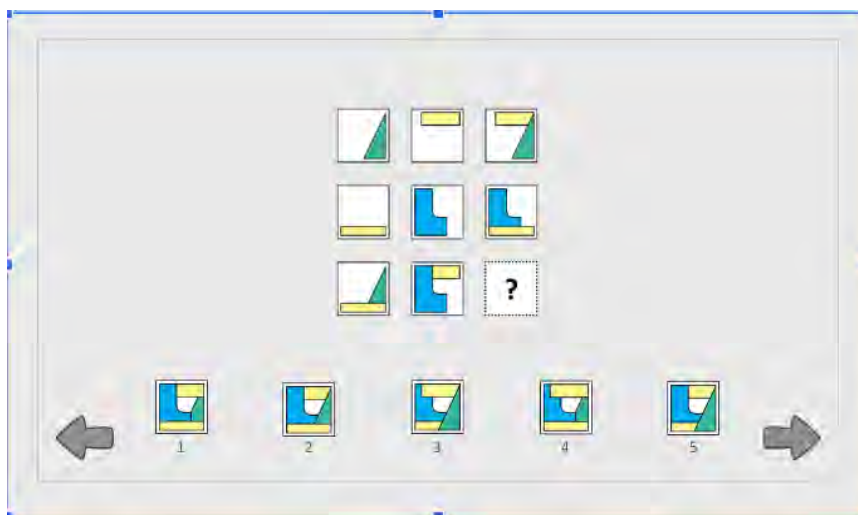
Easy


 Naglieri
General Ability Tests | Nonverbal

45

1st Gr.

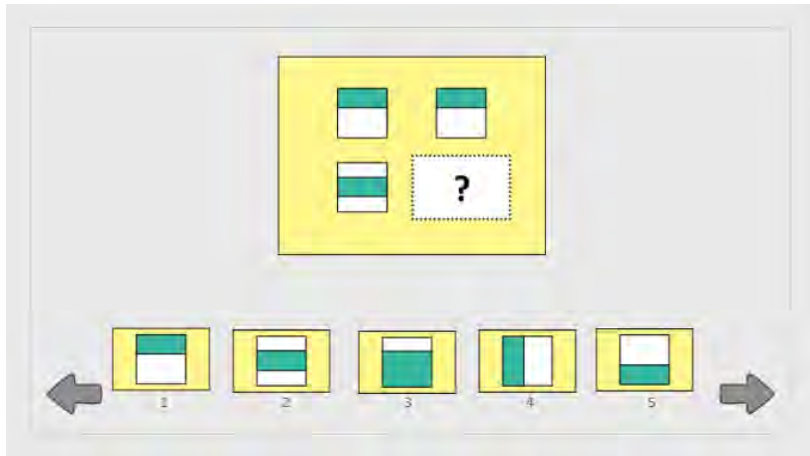
Hard


 Naglieri
General Ability Tests | Nonverbal

46

6th Gr.

Easy

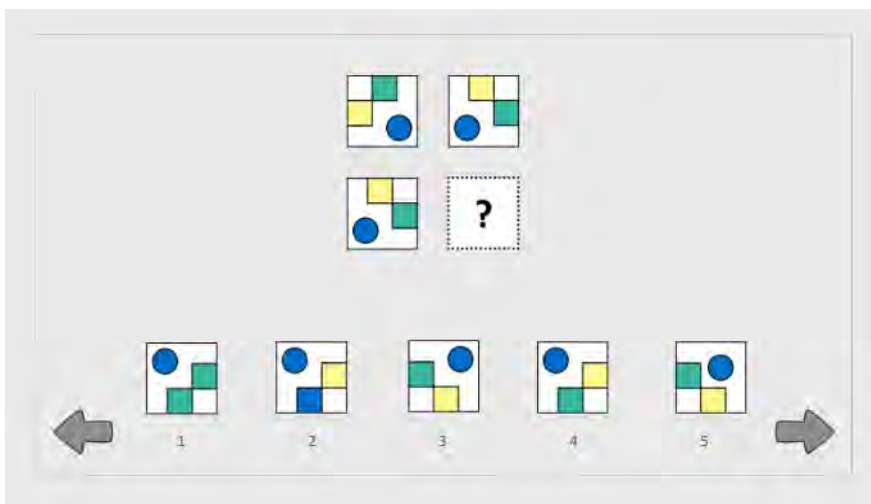


Naglieri
 General Ability Tests | Nonverbal

47

6th Gr.

Hard



Naglieri
 General Ability Tests | Nonverbal

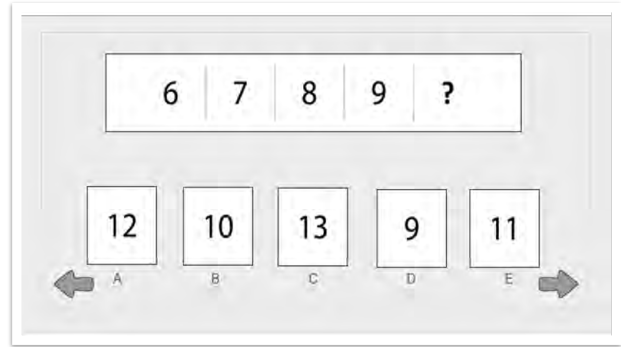
48

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 Test – Quantitative
(Naglieri & Lansdowne)*

49



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Naglieri General Ability Tests-Grade 1-Easy

157

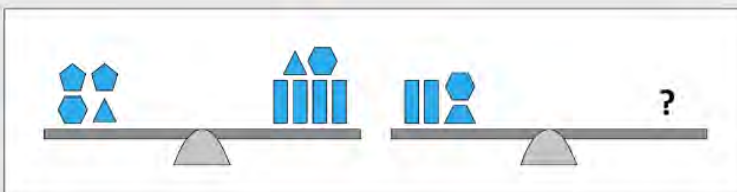
6	7	8	9	?
---	---	---	---	---






12	10	13	9	11
A	B	C	D	E

51


Naglieri General Ability Tests-Grade 1-Hard

229




				
A	B	C	D	E

52



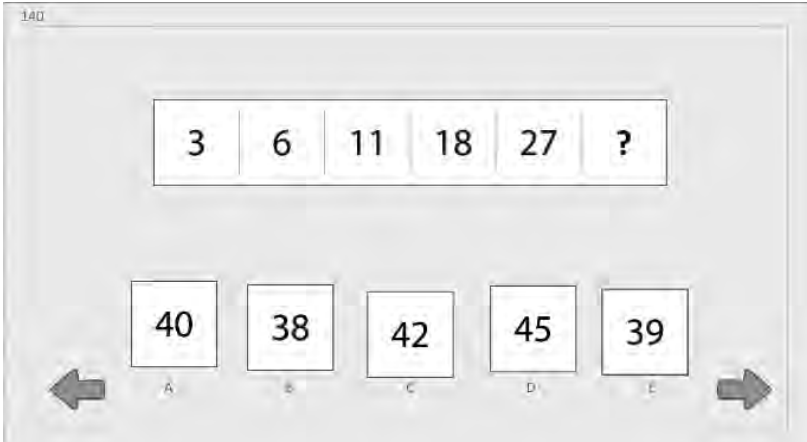
SAMPLE ITEM 1


Naglieri | Quantitative
General Ability Tests

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

53

Naglieri General Ability Tests-Grade 6-Easy



140

3	6	11	18	27	?
---	---	----	----	----	---

40	38	42	45	39
----	----	----	----	----

← A B C D E →


Naglieri | Quantitative
General Ability Tests

54

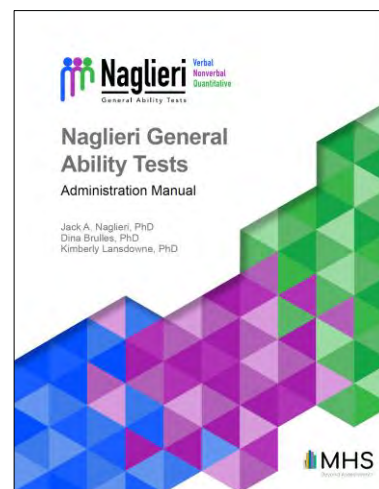
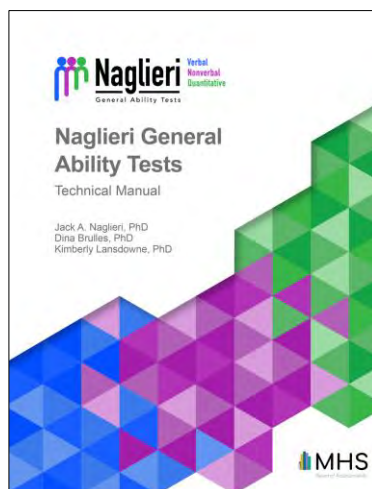
Now that you have seen some of the verbal items, what do you think ?



- Do you have a student who can do well on these, but not doing well at school?
- Can you accept that a student who can get a high score on these kinds of questions that they **SHOULD BE** in a gifted program?
- You can't guess and get a very high score on these tests !

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



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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.*
CompletionTimeFlag	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.*
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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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.

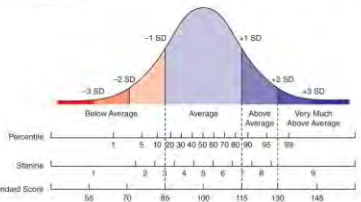
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Student Name: John Tigerwood
 Student ID: 123456
 Grade: 3
 School: Manhattan Public School
 School District: Dovercourt Public District School Board


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

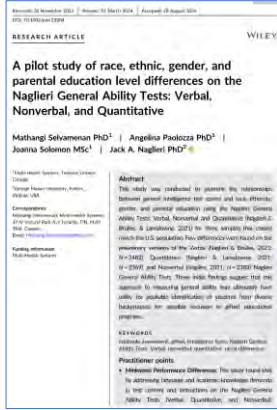
For more information on the Naglieri General Ability Tests™, scan the QR code or visit: [URL](#) 

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Research Evidence of Equity

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.



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

Comparison of English and Non-English Groups

- Total sample size = 322
- A matched sample was randomly drawn, pairing an English-speaking student with a Non-English-speaking student on the basis of gender, race, ethnicity, region, and age

Table 6.30. Demographic Characteristics of Matched English and Non-English Sample: Naglieri General Ability Tests

Demographic	English		Non-English		Total		
	N	%	N	%	N	%	
Grade	Kindergarten	1	0.6	3	1.9	4	1.2
	Grade 1	25	15.5	7	4.3	32	9.9
	Grade 2	36	22.4	68	42.2	104	32.3
	Grade 3-4	55	34.2	41	25.5	96	29.8
	Grade 5-6	23	14.3	21	13.0	44	13.7
	Grade 7-9	21	13.0	21	13.0	42	13.0
Gender	Female	86	53.4	86	53.4	172	53.4
	Male	75	46.6	75	46.6	150	46.6
	Other	0	0.0	0	0.0	0	0.0
Racial/Ethnic Group	Asian	9	5.6	9	5.6	18	5.6
	Black	10	6.2	10	6.2	20	6.2
	Hispanic	85	52.8	85	52.8	170	52.8
	White	55	34.2	55	34.2	110	34.2
U.S. Region	Other	2	1.2	2	1.2	4	1.2
	Midwest	0	0.0	0	0.0	0	0.0
	South	149	92.5	149	92.5	298	92.5
	West	12	7.5	12	7.5	24	7.5
Age in years M (SD)	9.1 (2.2)		9.1 (2.2)		9.1 (2.2)		
Total	161	100.0	161	100.0	322	100.0	

Group Differences by Primary Language Spoken

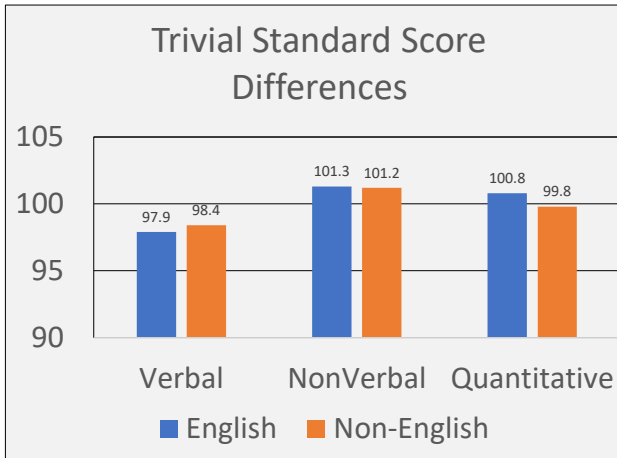


Table 6.31. Group Differences by Primary Language Spoken: Naglieri General Ability Tests

Test	Language Spoken	Descriptives		Differences		
		M	SD	Cohen's <i>d</i>	95% CI	<i>t</i>
Naglieri-V	English	97.9	14.5	-0.04	-0.07, 0.13	-0.32
	Non-English	98.4	14.8			
Naglieri-NV	English	101.3	14.1	0.00	-0.17, 0.02	0.04
	Non-English	101.2	13.5			
Naglieri-Q	English	100.8	14.1	0.07	-0.07, 0.13	0.65
	Non-English	99.8	12.9			

Note. *N* = 161 for each English and Non-English group. *t* statistic produced from a Welch Two Sample test. Cohen's *d*: small effect size = 0.20 to 0.49; medium effect size = 0.50 to 0.79; large effect size ≥ 0.80. Positive *d* values indicate higher scores for English Primary students. Naglieri-V = Naglieri General Ability Tests-Verbal; Naglieri-NV = Naglieri General Ability Tests-Nonverbal; Naglieri-Q = Naglieri General Ability Tests-Quantitative.

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

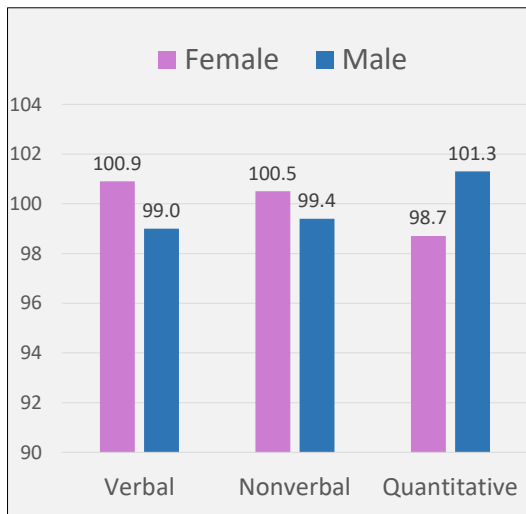


Table 7.9. Group Differences by Gender: Naglieri General Ability Tests

Test		Gender		Cohen's <i>d</i>
		Female	Male	
Naglieri-V	M	100.9	99.0	0.13
	SD	14.7	15.2	
Naglieri-NV	M	100.5	99.4	0.08
	SD	14.7	15.3	
Naglieri-Q	M	98.7	101.3	-0.17
	SD	14.4	15.4	
Total Score	M	100.1	99.9	0.01
	SD	14.7	15.3	

Note. Female *N* = 3,000 and Male *N* = 2,999. Guidelines for interpreting Cohen's *d*: small effect size = 0.20 to 0.49; medium effect size = 0.50 to 0.79; large effect size ≥ 0.80. Positive Cohen's *d* values imply higher scores for females. Naglieri-V = Naglieri General Ability Tests-Verbal; Naglieri-NV = Naglieri General Ability Tests-Nonverbal; Naglieri-Q = Naglieri General Ability Tests-Quantitative. Naglieri-V = Naglieri General Ability Tests-Verbal; Naglieri-NV = Naglieri General Ability Tests-Nonverbal; Naglieri-Q = Naglieri General Ability Tests-Quantitative; Total Score = Naglieri General Ability Tests-Total Standard Score.

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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POST COVID National 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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Interpretive Considerations for 3 Test Scores

- The suite of Naglieri General Ability tests includes **three separate tests designed to measure “general ability, or g”**
- The three tests use questions that have different content- Verbal, Nonverbal and Quantitative and different authors.
- This provides MULTIPLE measures of general ability, 3 Total Scores and a Composite score (V, NV and Q).
- We examined how many students in the normative sample would be identified if various combinations of the three tests were given.
 - For example: “How many students had a standard score of 120 (91st percentile) on one, two or all three of these tests.”

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Why Use Norms in Gifted Identification?

National and local norms are used to compare students to peers of same age or grade level.

Norms are essential for ensuring fair and accurate assessment of a student’s ability.

Expands schools’ ability to identify potential.



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National Norms

- Established using a large sample of students who match the country's demographics, inc. age, gender, race, ethnicity, region, and SES status.

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Local Norms

- Calibrate a student's performance in relation to peers in the same building or district.
- Ensures scores are based on a comparison group that aligns w/the local community and its unique demographics.
- Effective for identifying students from previously underrepresented populations.

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National norms may be easier to implement and can be effective when used with districts or schools that represent national demographics.

Use national norms when/if...

- The district represents the national demographic.
- You successfully identify the top percent of students in the school who need specialized services.
- You are testing students in grades that are outside though that have universal testing. (Local norms can only be used when universally screening all students within a grade).
- A student is new to the school/district and was unable to participate with their grade-peers as part of a local norm sample.

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Use Local Norms when/if...

- The school setting does not represent the U.S. population
- Universal testing of all students in a specific grade level is conducted
- Norming by school building is desired (i.e., all students in a grade level)
- Norming by a specific group is desired (i.e., by demographics)

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Case Study: Central School District

- A large, diverse district spanning several miles
- Varies greatly in household income, race, ethnicity
- >97 percentile in both achievement **and** ability needed for identification
- Per district policy, gifted teachers are staffed in correlation with the number of students identified

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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.

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Multiple
Measures &
*Multiple
Pathways!*

Different needs and circumstances require different approaches to testing and identification

- Ex. - Universal testing, using national norms (90-96%tile) and “flexing in” at Title I schools

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**The Gifted
Programming
Dilemma:**

The Chicken or the Egg?



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Four Common Program Models Examined through an equity lens

- Cluster Grouping
- Honors Classes
- Enrichment Classes
- Self-contained Programs



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Summary: Equitable Assessment of Intelligence


- **Equitable evaluation of intelligence** demands test questions that can be solved regardless of the amount of academic knowledge and facility with language a student has
- We have shown that
 - General ability (*g*) **can be measured equitably** across Verbal, Quantitative and Nonverbal content if the tests do not require academic knowledge
- Verbal, Quantitative and Nonverbal are **a description of the content of the tests'** questions **NOT** different types of intelligence
- Equitable tests measure THINKING in a manner that is minimally influenced by KNOWING

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Time for final Thoughts, Questions and Answers

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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

Socially just identification of gifted students requires self-reflection and self-correction in response to current research

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Let's Connect



www.NaglieriGiftedTests.com



NaglieriGiftedTests@gmail.com



[@NaglieriGeneralAbilityTests](https://www.instagram.com/NaglieriGeneralAbilityTests)



[Naglieri General Ability Tests](https://www.youtube.com/NaglieriGeneralAbilityTests)



[Naglieri General Ability Tests](https://www.facebook.com/NaglieriGeneralAbilityTests)

Maybe It's Time to Let the Old Ways Die



**Thank
You !**

NYASP 2022
Legends in
School
Psychology
Award
Interview

**What reactions do you
have about this new way
to identify gifted students?**

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