

How Intelligence Tests have Influenced Diversity in Gifted Programs

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1

Disclosures



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2

2

The Goals for Today

- Recognition of Drs. Ford, Brulles, and Lansdowne contributions to this session
- The American Psychological Association released an apology for the role psychology and APA itself has played in promoting racism
 - I will review this apology which many have rightfully criticized – see: *“Time Will Tell: Three Black Scholars Ponder APA’s Apology for Silence and Complicity in Perpetuating Racism”* (Pope-Davis, Moore, Ford, 2021)
- How many students of color are currently excluded
- What is it about IQ tests that has led to under-representation
- What research can guide our decision-making
- We CAN and we MUST follow the science

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3

American Psychological Association Apology

- ‘APA recognizes the roles of psychology in promoting...racism, and the harms that have been inflicted on communities of color ...’
- ‘Psychologists created and promoted the widespread application of psychological tests that have been used to disadvantage many communities of color’
- ‘APA and its leadership failed to take action in response to calls from Black psychologists for an end to the misuse of tests developed by psychologists that perpetuated racial inequality... and the ways measurement of intelligence has been systemically used to create the ideology of White supremacy’

APA apologizes to communities of color for longstanding contributions to systemic racism [Read more](#)

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Home / About APA / Council Policy Manual / Apology to People of Color for APA's...

Apology to People of Color for APA's Role in Promoting, Perpetuating, and Failing to Challenge Racism, Racial Discrimination, and Human Hierarchy in U.S.

Resolution adopted by the APA Council of Representatives on October 29, 2021

The American Psychological Association failed in its role leading the discipline of psychology, was complicit in contributing to systemic inequalities, and hurt many through racism, racial discrimination, and denigration of people of color, thereby falling short on its mission to benefit society and improve lives. APA is profoundly sorry, accepts responsibility for, and owns the actions and inactions of APA itself, the discipline of psychology, and individual psychologists who stood as leaders for the organization and field.

The governing body within APA should have apologized to people of color before today. APA, and many in psychology, have long considered such an apology, but failed to accept responsibility. APA previously engaged in unsuccessful efforts to issue apologies in the past, including an apology to Indigenous peoples. The work done to make this apology to people of color a reality was led by the people and voices of a broad cross-section of today's APA—members, APA's elected and appointed leaders, and staff—in a shared commitment to not only truly assess the harms and the harmed, but also to take responsibility and commit to taking those collective learnings and direct them into an apology that will affect true change. It is informed by listening with intention to the voices of the past—as outlined in a stunning chronology of psychology's history—and especially informed by the voices of today, the lived experience of psychologists of color, Ethnic Psychological Associations, and those who serve people of color.

APA Council of Representatives resolutions

- Apology to People of Color for APA's Role in Promoting, Perpetuating, and Failing to Challenge Racism, Racial Discrimination, and Human Hierarchy in U.S.
- Role of Psychology and APA in Dismantling Systemic Racism Against People of Color in U.S.
- Advancing Health Equity in Psychology

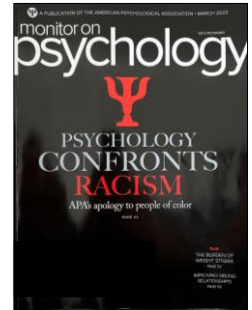
More information

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4

American Psychological Association Apology

- Throughout the 1900s prominent psychologists involved in IQ test development supported eugenics and called for sterilization for unfit and inferior races
- In 1916 Lewis Terman created the *Stanford-Binet* and advocated an educational system which separated white children from Blacks, Mexicans and Native Americans
- 1933 Raymond Cattell (CHC & WJ) spoke out against race mixing and he lobbied to overturn the 1954 *Brown v. Board Education*



5

IQ Tests Role in Promoting Racism

- Lewis Terman – promoter of eugenics (Greek for good birth) and author of the *Stanford-Binet* (1916) wrote that his test would reveal “significant racial differences in general intelligence...which cannot be wiped out by any culture”
- identification of low-intelligence children and adults who would be involuntarily institutionalized and sterilized would improve society. (p. 68, Brookwood, 2021)

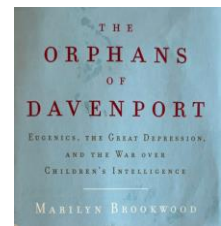


TABLE II

DISTRIBUTION OF INTELLIGENCE QUOTIENTS BY RACIAL STOCK

RACIAL DIFFERENCES IN THE INTELLIGENCE OF SCHOOL CHILDREN

BY FLORENCE L. GOODENOUGH
Institute of Child Welfare, University of Minnesota

IQ	American	Armenian	Italian	Spanish-Mexican	California Negroes	Southern Negroes	Hoopla Valley Indians	Jewish	Chinese	Japanese	Germans	Portuguese	and Saxons
Total cases	500	123	456	367	69	613	79	55	25	42	29	11	14
Mdn.	100.3	91.8	87.5	87.2	82.7	76.5	85.6	66.3	103.1	99.5	98.8	93.3	99.5
Mean	101.5	92.3	89.1	88.5	85.8	78.7	85.6	66.1	104.1	101.9	101.1	94.5	100.2
S.D.	18.3	15.6	16.0	17.5	18.7	17.5	14.1	16.2	18.0	18.0	19.3	16.5	16.8
Coeff. of var.	18.0	16.9	18.0	19.8	21.8	22.2	16.5	15.3	17.2	17.7	19.1	17.5	16.8

6

Origins of Traditional IQ Tests

E. Thorndike **A. Otis** **R. Woodworth**

Handbook of Intelligence
Evolutionary Theory, Historical Perspective, and Current Concepts
Springer

Hundred Years of Intelligence Testing: Moving from Traditional IQ to Second-Generation Intelligence Tests
Jack A. Naglieri
"Do not go where the path may lead; go instead where there is no path and leave a trail."
— Ralph Waldo Emerson

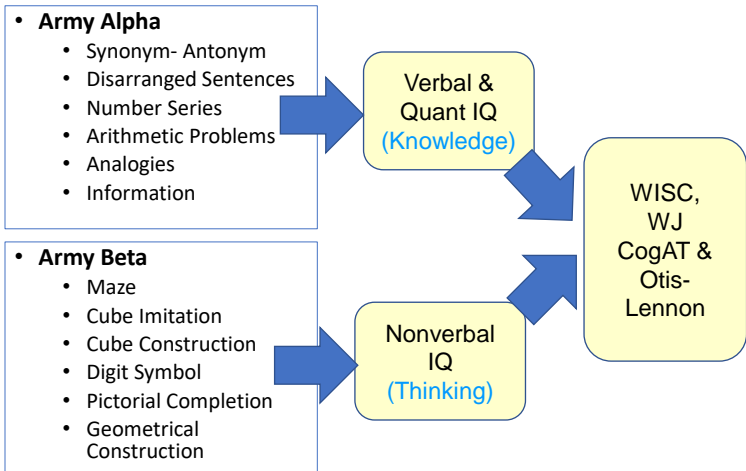
Context
April 8, 1917, is remembered as the day the United States entered World War I. On that same day a group of psychologists held a meeting at Harvard University's Emerson Hall to discuss the possible role they could play with the war effort (Yerkes 1921). The group agreed that psychological knowledge and methods could be of importance to the military and utilized to increase the efficiency of the Army and Navy personnel. The group included Robert Yerkes, who was also the president of the American Psychological Association. Yerkes made an appeal to members of APA who responded by forming a committee to study the problem. The committee considered many types of group tests and several that Arthur S. Otis developed while working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of cases, be easy to administer in the group format, and be easy to score. By June 9, 1917, the materials were ready for an initial trial. Men who had some educational background and could speak English were administered the verbal and quantitative (Alpha) tests and those that could not read the newspaper or speak English were given the Beta tests (Yerkes described as nonverbal). The Alpha tests were designed to measure general information (e.g., how many months are...

- A group of psychologists met at Harvard in April of 1917 to construct an ability test to help the US military evaluate recruits (WWI)
- By July 1917 their research showed that the Army Alpha (Verbal & Quantitative) and Beta (Nonverbal) tests could “aid in segregating and eliminating the mentally incompetent, classify men according to their mental ability; and assist in selecting competent men for responsible positions” (p. 19, Yerkes, 1921).
- This was the foundation of the **Wechsler Scales – Verbal, Performance (Nonverbal) and Quantitative** subtests as well as the **Otis-Lennon and CogAT**

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7

Alpha & Beta → Wechsler



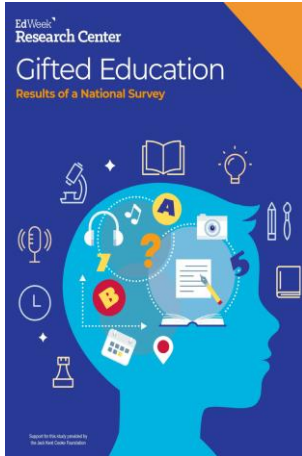
ARMY MENTAL TESTS
COMPILED AND REVISED BY CLARENCE S. YOAKUM AND ROBERT M. YERKES
PUBLISHED WITH THE AUTHORIZATION OF THE WAR DEPARTMENT
NEW YORK HENRY HOLT AND COMPANY

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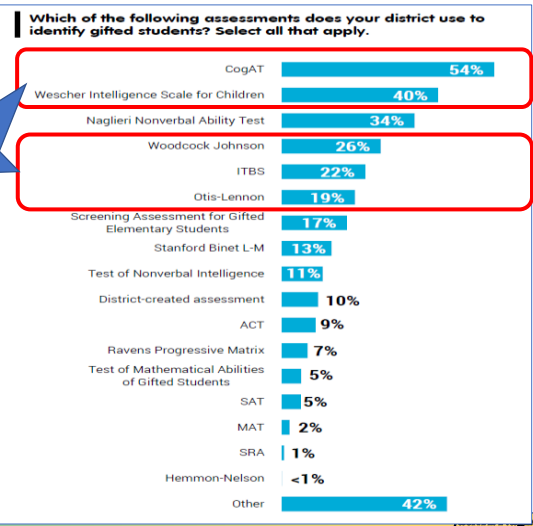
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National Survey of Gifted Education



These tests have verbal and quantitative questions and lengthy verbal directions



9

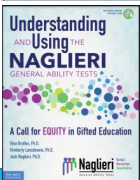
Numbers of Students Missed

Total Enrollments by Race and Ethnicity as of 2020.

	N in Public Education K-12 in 2020	N Potentially Gifted (8%; 92 %tile)	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 American/ Alaska Native	484,766	38,781	27,712	-11,069
Two or More Races	1,641,817	131,345	105,371	-25,974
Total Non-Whites	24,218,556	1,937,484	1,064,355	-873,129

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

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



Percent of Schools that Identify	58.5%
Percent of Schools that do not Identify	41.5%
Additional non-white gifted students = 41.5% of 873,129	N = 362,305
Total non-white gifted students missed	N = 1,235,434



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10

The Problem with Traditional IQ Tests

The measurement of intelligence is **CONFOUNDED** by knowledge

11

Traditional IQ and Achievement Tests

- When I started working as a school psychologist in 1975...I noticed that parts of the intelligence tests we used were VERY similar to parts of the achievement tests
 - In fact the Achievement Test had a General Information and Arithmetic subtests JUST LIKE THE WISC!
- **THAT DID NOT MAKE SENSE**



1975 Charles Champagne Elementary, Bethpage, NY

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12

How and Why...

- First job as assistant professor at Northern Arizona University - 1979



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13

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-R RECORD FORM

Wechsler Intelligence Scale for Children—Revised

NAME _____

ADDRESS _____

PARENT'S _____

SCHOOL _____

PLACE OF _____

REFERRED BY _____

WISC-R PROFILE

Directions: 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								
Scaled Score	Information	Similarities	Arithmetic	Vocabulary	Comprehension	Digit Span	Picture Completion	Picture Arrangement	Block Design	Object Assembly	Coding	Matrix	Scaled Score
19													19
18													18
17													17
16													16
15													15
14													14
13													13
12													12
11													11
10													10
9													9
8													8
7													7
6													6
5													5
4													4
3													3
2													2
1													1

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

NOTES x̄ = 9.4

Year	81	Month	8	Day	7
Date Tested					
Date of Birth	74	4	26		
Age	7	4	18		

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

*Present 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.

Naglieri, J. A., & Yazzie, C. (1983). Comparison of the WISC-R and PPVT-R with Navajo children. *Journal of Clinical Psychology*, 39, 598-600.

14

The US Army Alpha Test (Verbal)

- tobacco** 1. Bull Durham is the name of
fruit 2. The Mackintosh Red is a kind of
typewriter 3. The Oliver is a
Mogul 4. A passenger locomotive type is the
engineers 5. Stone & Webster are well know
Superbas 6. The Brooklyn Nationals are called
fabric 7. Pongee is a
corn 8. Country Gentleman is a kind of
Mckinley 9. The President during the Spanish War was
cigarette 10. Fatima is a make of

From: Psychological Examining the United States Army (Yerkes, 1921, p. 213)

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15

Knowledge is Included in “Ability” Tests

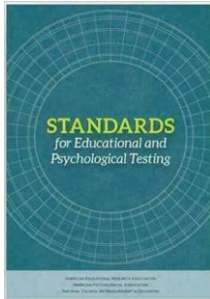
Stanford-Binet-5	WISC-V	WJ-IV	KABC-II	OLSAT	CogAT
<ul style="list-style-type: none"> • Verbal • Knowledge • Quantitative Reasoning • Vocabulary • Verbal Analogies 	<ul style="list-style-type: none"> • Verbal Comprehension • Vocabulary, Similarities, Information & Comprehension • Fluid Reasoning • Figure 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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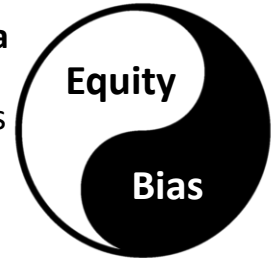
16

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 the norming data do not demonstrate test bias.



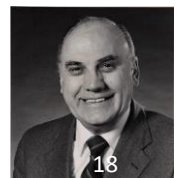
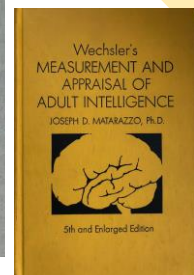
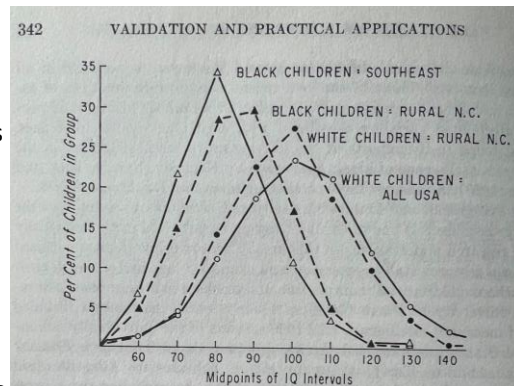
- Evidence of EQUITY is examined by test content and mean score differences

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17

Test Content and Race Differences

- When English is required in a vocabulary test of general ability this disadvantages students with limited educational opportunity.
- Matarazzo (1972) wrote about the Wechsler Scales
 - "...Vocabulary is necessarily influenced by ... education and cultural opportunities (p. 218)"
 - when referring to the Arithmetic subtest, "...its merits are lessened by the fact that it is influenced by education (p. 203)."

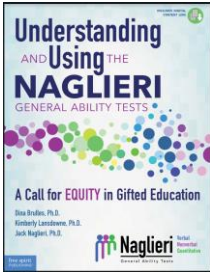


Even though the role of education was known, psychologists still attributed IQ test differences to the **people** instead of the **test**.

18

18

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



Note: Even though traditional intelligence tests may not show psychometric bias (Worrell, 2019) the large mean score differences suggest they are unfair (Brulles, et al., 2022).

Race and Ethnic Standard Score Differences Across Intelligence Tests	By Race	By Ethnicity
Tests that require knowledge	Mn = 11.5	Mn = 9.2
Otis-Lennon School Ability Test (distric wide)	13.6	
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	
WJ- III (normative sample)	10.9	10.7
CogAT7 (Nonverbal scale)	11.8	7.6
WISC-V (statistical controls normative sample)	8.7	
Tests that require minimal knowledge	Mn = 4.1	Mn = 2.6
K-ABC (normative sample)	7.0	
K-ABC (matched samples)	6.1	
CAS-2 (normative sample)	6.3	4.5
CAS (statistical controls normative sample)	4.8	4.8
CAS-2 (statistical controls normative sample)	4.3	1.8
CAS-2 Brief (normative samples)	2.0	2.8

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Notes: 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 & Oakland (2006) and ethnic differences by Sotelo- Dynega, Ortiz, Flanagan & Chaplin (2013); CogAT7 by Carman, Walther and Bartsch (2018); WISC-V by Kaufman, Raiford & Coalsen (2016); Kaufman Assessment Battery for Children-II by Lichenberger, Sotelo- Dynega and Kaufman (2009); CAS by Naglieri, Rojahn, Matto & Aquilino (2005); CAS-2 and CAS2-Brief by Naglieri, Das & Goldstein, 2014; Naglieri Nonverbal Ability Test by Naglieri and Ronning (2000), and Naglieri General Ability Tests by Naglieri, Brulles and Lansdowne (2021).



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 assessment requires self-reflection and self-correction in response to current research findings

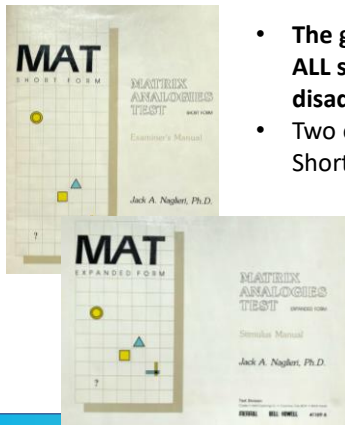
How Intelligence can be Measured More Efficiently

Use test questions that measure THINKING in a way that is not dependent upon KNOWING

21

Naglieri's Nonverbal Tests: 1985 to Present

• First and Second Versions



MAT Short and Expanded Forms 1985

- The goal was to provide efficient ways to evaluate *general ability* for ALL students and especially “intellectually gifted children from disadvantaged backgrounds (Naglieri, 1985, p. 3).”
- Two options: The MAT: Expanded Form for individual and the MAT: Short Form for group administration.

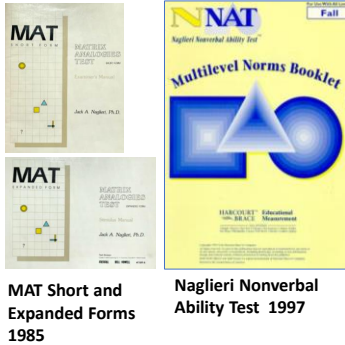
Validity Results:

1. Males Females differences were trivial (< 1 point) on MAT:EF (452) & MAT:SF (N = 2,636)
2. Differences by Race were trivial (< 1 point) on MAT:EF (N = 110) and MAT:SF (N = 672)
3. MAT:SF correlations with reading and math achievement were substantial across grades K-12 (N = 3,022)

22

Naglieri's Nonverbal Tests : 1985 to Present

• Third Version of the Naglieri Nonverbal Tests



- The MAT was rebranded as the Naglieri Nonverbal Ability Test Multilevel (NNAT) and released as a group administered test.

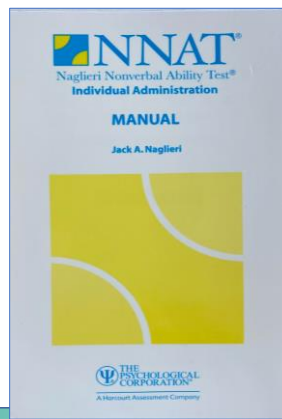
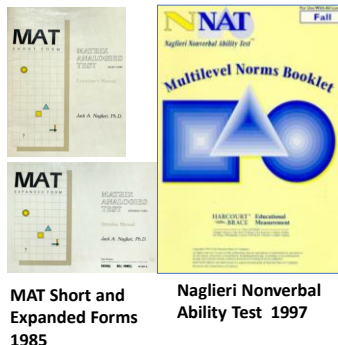
- **Initial Research Findings:**
- Naglieri, J. A., & Ronning, M. E. (2000). The Relationships between General Ability Using the NNAT and SAT Reading Achievement. *Journal of Psychoeducational Assessment*, 18, 230-239. **STRONG CORRELATION WITH ACHIEVEMENT**
- Naglieri, J. A., & Ronning, M. E. (2000). Comparison of White, African-American, Hispanic, and Asian Children on the Naglieri Nonverbal Ability Test. *Psychological Assessment*, 12, 328-334. **TRIVIAL DIFFERENCES BY RACE AND ETHNICITY**
- Naglieri, J., & Ford, D. Y. (2003). Addressing Under-representation of Gifted Minority Children Using the Naglieri Nonverbal Ability Test (NNAT). *Gifted Child Quarterly*, 47, 155-160. **SIMILAR % OF BLACK, WHITE & HISPANICS FOUND USING THE NNAT**

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23

Naglieri's Nonverbal Tests : 1985 to Present

• Fourth Version of the Naglieri Nonverbal Tests



NNAT –Individual (2003) for one-on-one testing and two forms

The NNAT individual Validity:

- Similar scores by race, ethnicity and ELL status and students with hearing impairment
- Strong correlation with the Ravens Progressive Matrices (.78), TONI-3 (.63), WISC-IV Matrix Reasoning ($r = .62$)

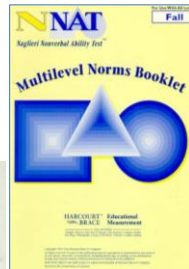
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Naglieri's Nonverbal Tests : 1985 to Present

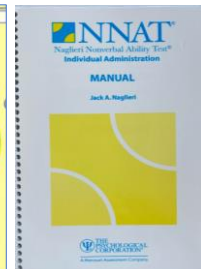
• Fifth Version of the Naglieri Nonverbal Tests



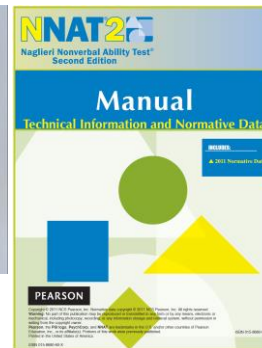
MAT Short and Expanded Forms 1985



Naglieri Nonverbal Ability Test 1997



NNAT -Individual, 2003



The NNAT2 Validity:

- Strong correlation with OLSAT8 ($r = .67$, $N = 592$)
- Strong correlation with Reading & Math (SAT10) ($r = .65$, $N = 2,552$)
- **Small differences between race/ethnicity and ELL and matched samples)**
- Strong correlation with the Wechsler Nonverbal Scale ($r = .74$) for gifted students.

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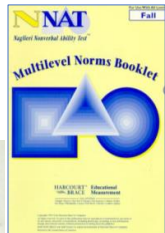
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Naglieri's Nonverbal Tests : 1985 to Present

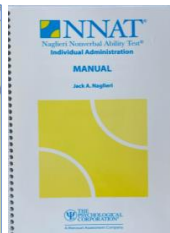
• Sixth Version of the Naglieri Nonverbal Tests



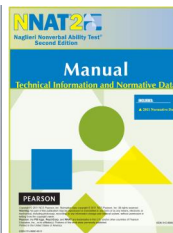
MAT Short and Expanded Forms 1985



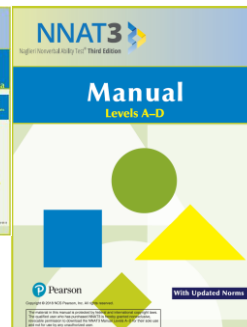
Naglieri Nonverbal Ability Test 1997



NNAT -Individual, 2003



NNAT -2 2008



The NNAT3 (2016) was created to provide new items and updated norm group

The NNAT3 Validity:

- No difference between online & paper
- The NAI scores correlated with the OLSAT 8 suggesting that the two tests measure general ability.

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26

Can a Nonverbal Test Identify Gifted Students?

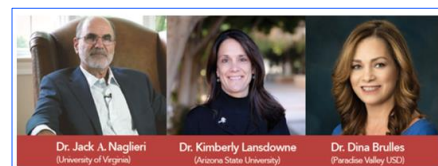
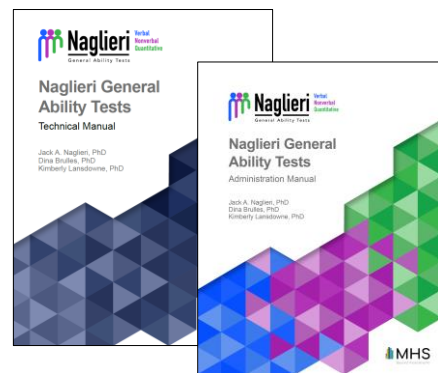
- The research on the NNAT is very strong and suggests:
 - NNAT is a nonverbal test of intelligence that WILL identify those **gifted** students who may not YET be **talented**
 - NNAT is strongly correlated with academic skills
 - BUT...
 - Can measures of general ability using VERBAL and QUANTITATIVE test questions be constructed that do not demand academic knowledge ?

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27

Measuring General Ability Equitably Using the Naglieri General Ability Tests: Verbal, Nonverbal and Quantitative

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28

Naglieri General Ability Tests



- 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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29

Solution: Measure Thinking not Knowledge

- What does the student have to know to complete a task?

- This is dependent upon educational opportunity



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

- This is dependent on the brain



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30

Naglieri General Ability Test – Verbal (Naglieri & Brulles)

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.

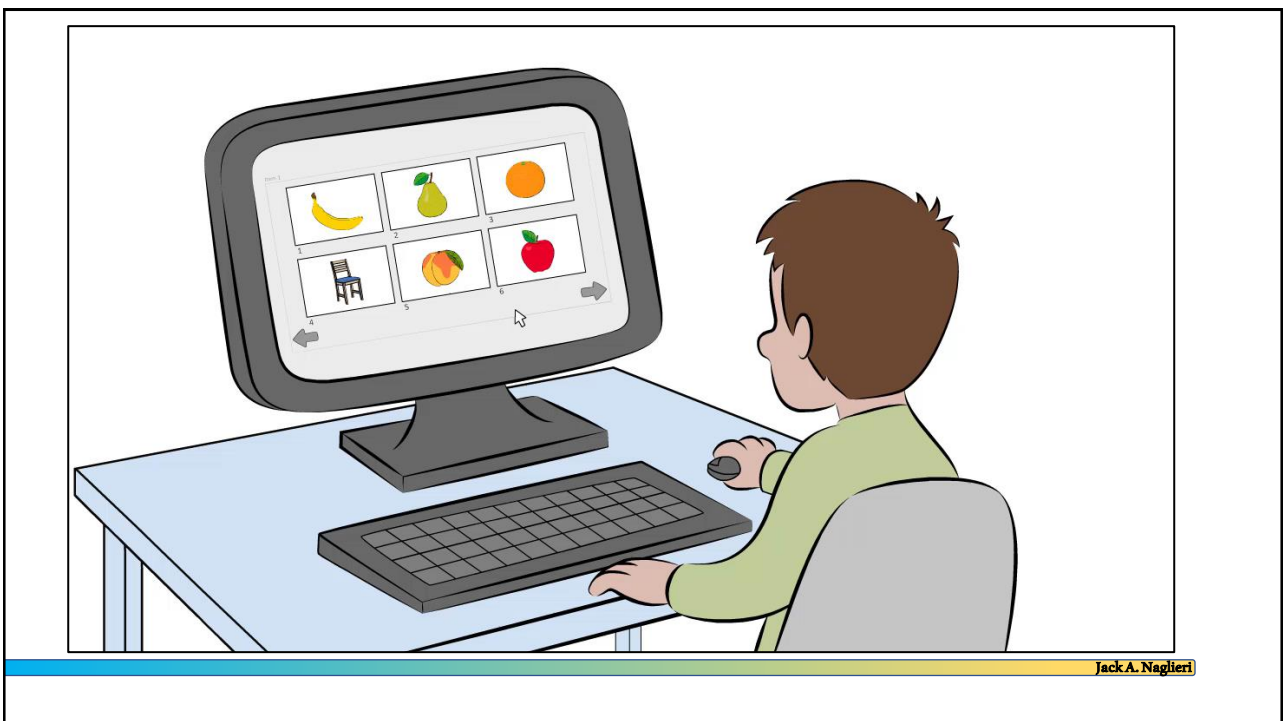
The student's task is to identify which of the six pictures does *not* represent the verbal concept shared by the other five.

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



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31



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32

Naglieri General Ability Test – Quantitative (Naglieri & Lansdowne)

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.



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33



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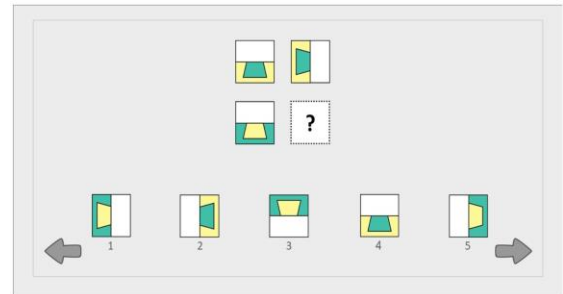
34

Naglieri General Ability Test - Nonverbal

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

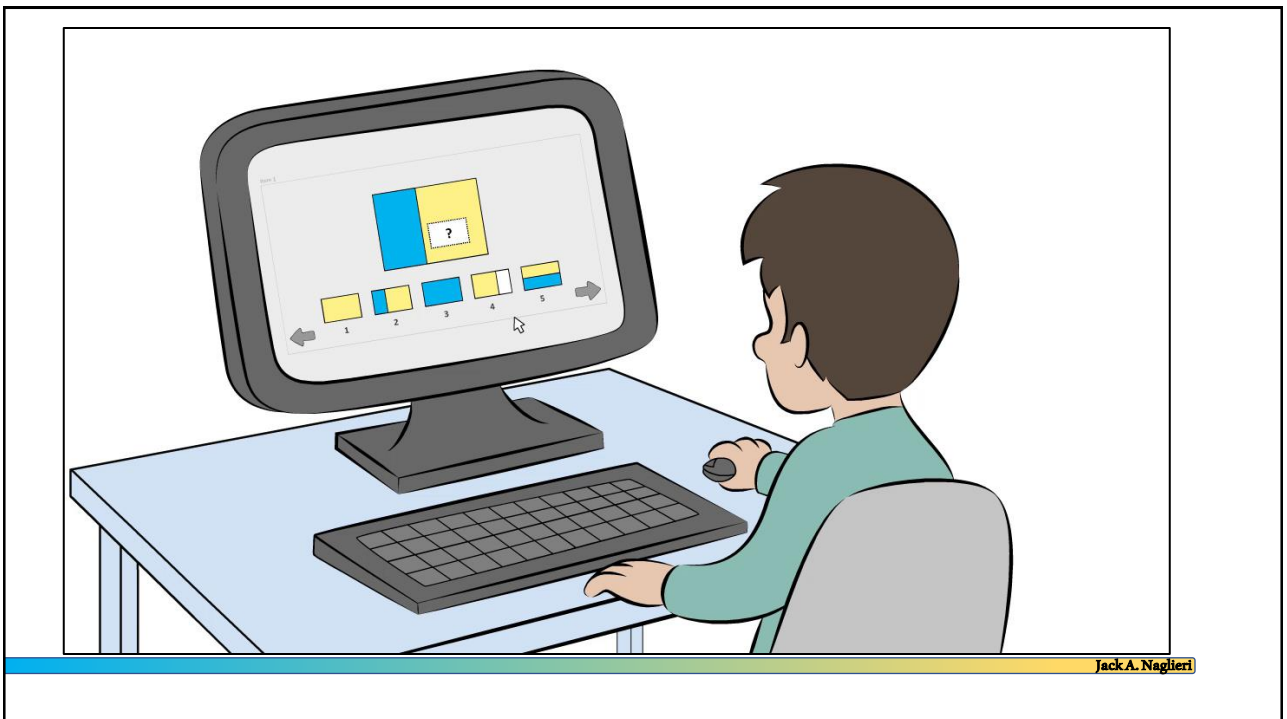
The structure of the items varies, but all items require that the student decipher the logic behind *the relationships among the shapes*, sequences, spatial orientations, patterns, and other distinguishing characteristics.

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



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35



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36

Three Research Studies (2022)

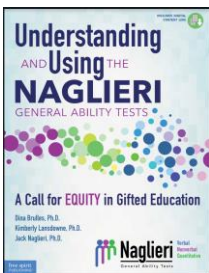
Selvamenan, M., Paolozza, A., Solomon, J., Naglieri, J. A., & Schmidt, M. T. (submitted for publication, 2022). Race, Ethnic, Gender, and Parental Education Level Differences on Verbal, Nonverbal, and Quantitative Naglieri General Ability Tests: Achieving Equity.

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> VERBAL SAMPLE <ul style="list-style-type: none"> 2,482 That closely matches the US population on key demographics GENDER <ul style="list-style-type: none"> No differences between males and females for raw score across all forms RACE/ETHNICITY <ul style="list-style-type: none"> No differences among White, Black, & Hispanic for raw score across all forms PARENTAL EDUCATION LEVEL <ul style="list-style-type: none"> No differences among five education levels (No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree) for raw score across all forms | <ul style="list-style-type: none"> NONVERBAL SAMPLE <ul style="list-style-type: none"> 3,630 That closely matches the US population on key demographics GENDER <ul style="list-style-type: none"> No differences between males and females for raw score across all forms RACE/ETHNICITY <ul style="list-style-type: none"> No differences among White, Black, & Hispanic for raw score across all forms PARENTAL EDUCATION LEVEL <ul style="list-style-type: none"> No differences among five education levels (No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree) for raw score across all forms | <ul style="list-style-type: none"> QUANTITATIVE SAMPLE <ul style="list-style-type: none"> 2,841 That closely matches the US population on key demographics GENDER <ul style="list-style-type: none"> No differences between males and females for raw score across all forms RACE/ETHNICITY <ul style="list-style-type: none"> No differences among White, Black, & Hispanic for raw score across all forms PARENTAL EDUCATION LEVEL <ul style="list-style-type: none"> No differences among five education levels (No high school diploma; High School graduate; Some college/Associate's degree; Bachelor's degree; Graduate/professional degree) for raw score across all forms |
|--|---|--|

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37

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



Note: Even though traditional intelligence tests may not show psychometric bias (Worrell, 2019) the large mean score differences suggest they are unfair (Brulles, et al., 2022).

Race and Ethnic Standard Score Differences Across Intelligence Tests	By Race	By Ethnicity
Tests that require knowledge	Mn = 11.5	Mn = 9.2
Otis-Lennon School Ability Test (distric wide)	13.6	
Stanford-Binet IV (normative sample)	12.6	
WISC-V (normative sample)	11.6	
WJ- III (normative sample)	10.9	10.7
CogAT7 (Nonverbal scale)	11.8	7.6
WISC-V (statistical controls normative sample)	8.7	
Tests that require minimal knowledge	Mn = 4.1	Mn = 2.6
K-ABC (normative sample)	7.0	
K-ABC (matched samples)	6.1	
CAS-2 (normative sample)	6.3	4.5
CAS (statistical controls normative sample)	4.8	4.8
CAS-2 (statistical controls normative sample)	4.3	1.8
CAS-2 Brief (normative samples)	2.0	2.8
NNAT (matched samples)	4.2	2.8
Naglieri General Ability Test-Verbal	2.2	1.6
Naglieri General Ability Test-Nonverbal	1.0	1.1
Naglieri General Ability Test-Quantitative	3.2	1.3

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38

Notes: 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 & Oakland (2006) and ethnic differences by Sotelo- Dynega, Ortiz, Flanagan & Chaplin (2013); CogAT7 by Carman, Walther and Bartsch (2018); WISC-V by Kaufman, Ralford & Coalson (2016); Kaufman Assessment Battery for Children-II by Lichenberger, Sotelo- Dynega and Kaufman (2009); CAS by Naglieri, Rojahn, Matto & Aquilino (2005); CAS-2 and CAS2-Brief by Naglieri, Das & Goldstein, 2014; Naglieri Nonverbal Ability Test by Naglieri and Ronning (2000), and Naglieri General Ability Tests by Naglieri, Brulles and Lansdowne (2021).

38

CAUTION!

Using **one fair test** does **NOT** ensure an equitable assessment process.

To find ALL gifted students **the entire assessment process must be equitable.**

The U-46 case reminds us that **HOW** tests scores are used in the assessment process as important as **WHICH** tests are used.



39

How Scores are Combined

Main question: Does the District's gifted program unlawfully discriminate against Hispanic Students?

The district with 42% Hispanics but only 2% of students in gifted were Hispanic.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

DANIEL, DINAH and DEANNA MCFADDEN,)
minors, by their parent and next friend, Tracy)
McFadden; KAREN, RODOLFO and KIARA)
TAPIA, minors, by their parent and next friend,)
Mariela Montoya; JOCELYN BURCIAGA, minor,)
by her parent and next friend, Griselda Burciaga;)
and KASHMIR IVY, minors, by their parent)
and next friend, Beverly Ivy; KRISTIANNE)
SIFUENTES, minors, by her parent and next)
friend, Irma Sifuentes,)

Plaintiffs,)
v.)

BOARD OF EDUCATION FOR ILLINOIS)
SCHOOL DISTRICT U-46,)
Defendant.)

Weighted matrix favored achievement and CogAT

Too little reliance on NNAT

No. 05 C 0760
Judge Robert W. Gettleman

On July 11, 2013, Judge Robert Gettleman issued a decision holding that District U-46 intentionally discriminated against Hispanic students specific in their gifted programming (placement), and found problems with policies and instruments for

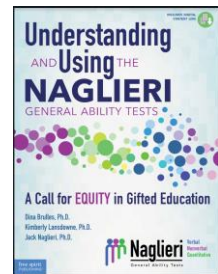
screening and identification, (c) use of both verbal and math scores at arbitrary designated levels for screening and for identification, (d) use of weighted matrix, as well as content and criteria in weighted matrices that favored achievement and traditional measures, (e) too little reliance on a nonverbal test (Naglieri Nonverbal Ability Test) for admission to

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40

Equitable Process of Identification

- Begins with choosing **EQUITABLE** tests
- Tests can **ONLY** solve the problem if they are used correctly
- Universal testing of **ALL** students, not just those nominated by teachers or parents
- Use **LOCAL** norms as well as national norms
 - Norms by school can help achieve equity
- Adjust the curriculum to **MATCH** the students' needs
- See Brulles, Lansdowne and Naglieri (2022) for details



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41

Your Thoughts and Questions...



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42

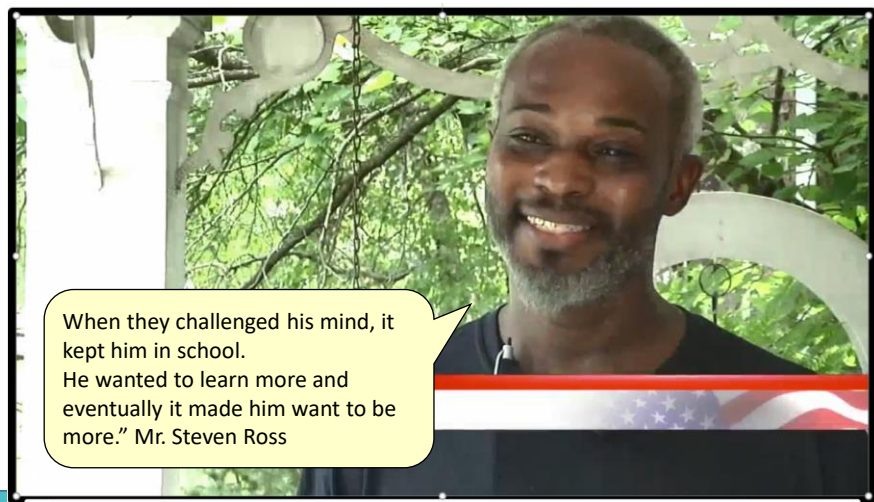
Wall Street Journal - December 2003

- In kindergarten, he scored **141** on the *Naglieri Nonverbal Ability Test*
- He was the only African-American at his school to qualify for gifted services
- But Devion was NOT getting good grades in school and was not considered GT
- He was bored and resistant to do silly work
- He appeared in the *Wall Street Journal* article, and was invited to Iles magnet school
- He started there January 5th, 2004
- **WHAT HAPPENED SINCE THEN?**



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Devion Graduated High School and...



When they challenged his mind, it kept him in school. He wanted to learn more and eventually it made him want to be more." Mr. Steven Ross



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

FOR MORE INFORMATION PLEASE GO TO MY WEB PAGES

The image shows two screenshots of the Naglieri website. The left screenshot is the homepage, featuring the Naglieri logo (Verbal, Nonverbal, Quantitative) and a navigation menu. A large banner for 'Naglieri General Ability Tests' is prominent, with a sub-headline 'EQUITABLE ASSESSMENT OF GIFTED STUDENTS USING THE Naglieri General Ability Tests' and 'Now Available'. Below the banner are two articles: 'Inequity in Gifted Testing' and 'Achieving Equity'. The right screenshot is a detailed page for 'NAGLIERI GENERAL ABILITY TESTS: VERBAL, NONVERBAL AND QUANTITATIVE'. It includes a photo of Jack A. Naglieri, a bio, and a grid of links to 'HANDOUTS', 'WEBINARS', 'EQUITY', 'EXECUTIVE FUNCTION', and 'HELPING CHILDREN LEARN'.