Identification of Gifted Students Using the Naglieri Ability Tests

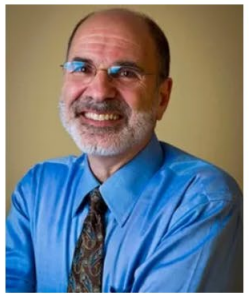
Jack A. Naglieri , Ph.D. jnaglieri@gmail.com www.jacknaglieri.com
Research Professor, Univ. of Virginia; Senior Research Scientist, Devereux Center for Resilient Children, Emeritus Professor, George Mason University

HOME ABOUT HANDOUTS CLINICIANS CORNER PUBLICATIONS PROFESSOR PPT VIDEOS

JACKNAGLIERI.COM

Assessment Tools for Psychologists and Educators

WELCOME TO JACKNAGLIERI.COM



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

Jack A. Naglieri, PhD. is a Research Professor at the University of Virginia, Senior Research Scientist at the Devereux Center for Resilient Children, and Emeritus Professor of Psychology at George Mason University. With J.P. Das, he is well known for the PASS theory of intelligence and its application using the Cognitive Assessment System and Cognitive Assessment System-Second Edition.

WHAT'S NEW?

Today's Handout

Download today's handout from recent presentations.

PASS Case Studies

Case studies that illustrate ways to identify different processing disorders and interventions that can make a difference.

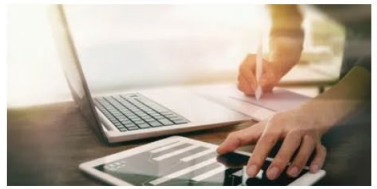
10-Minute Solutions

Short published papers that describe applications of PASS theory to identify disabilities such as Dyslexia.

CAS2 Speed/Fluency Scale

Article Library

Videos



FOR MORE INFORMATION PLEASE GO TO MY WEB PAGE

My Background

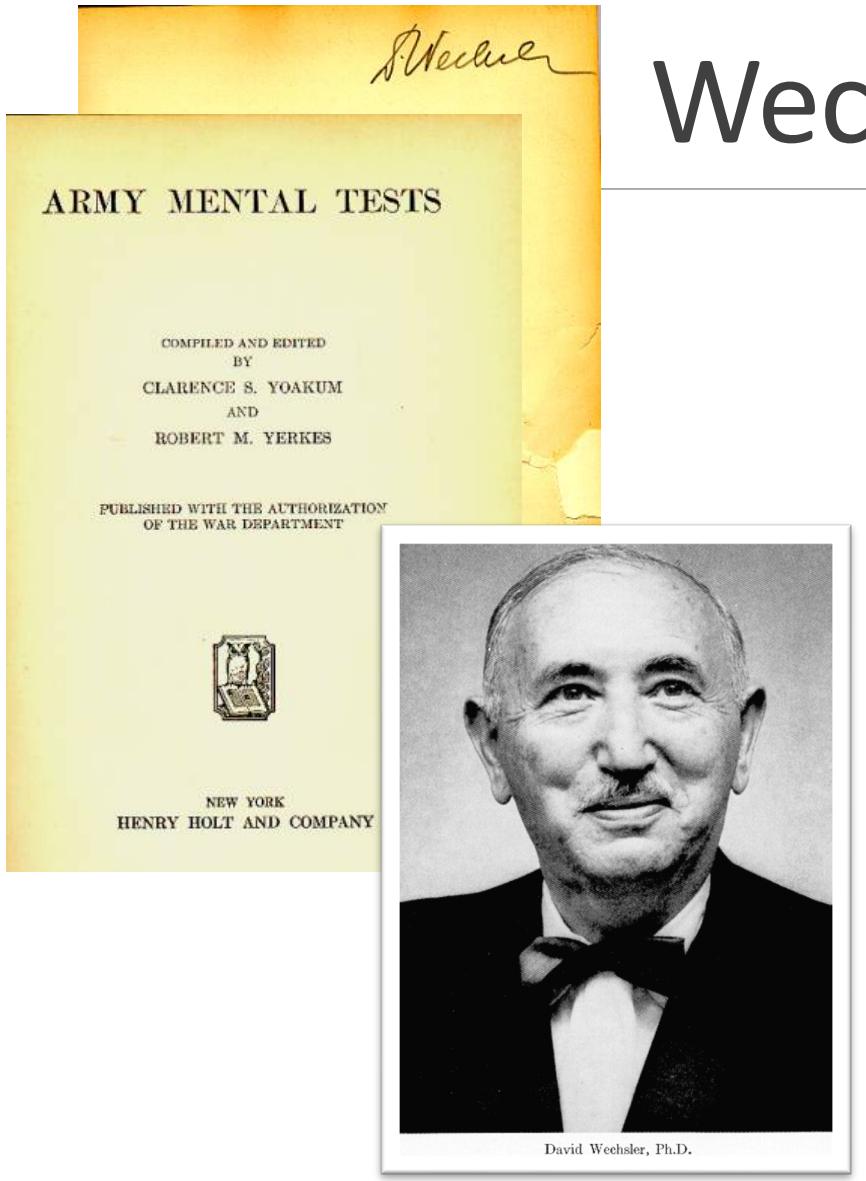
- Interest in the concept of intelligence, its measurement and instruction

Traditional IQ and Achievement Tests

- When I worked as a school psychologist I noticed that parts of the WISC was VERY similar to parts of the achievement tests

- The WISC had VERBAL (with Arithmetic) and Nonverbal Scales
- The Verbal tests were just like those on the Achievement test
- HOW DOES THAT MAKE SENSE?
- WHY THIS SIMILARITY?
- WHERE DID THIS COME FROM?

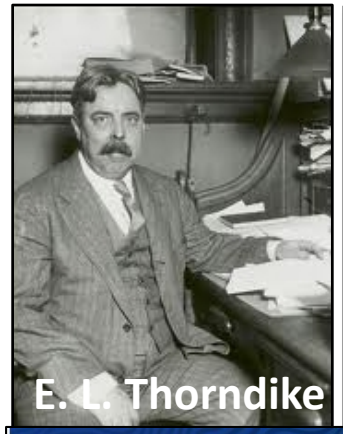
- 1975 Charles Champagne Elementary, Bethpage, NY

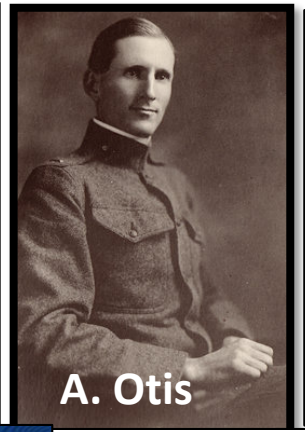


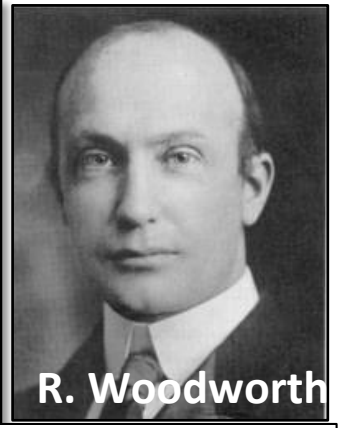
Wechsler (1939)

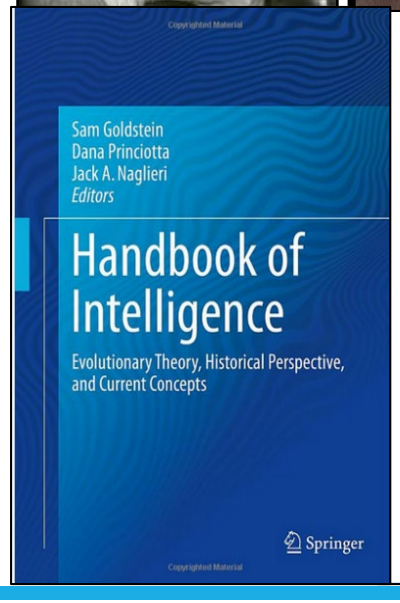
- Built his IQ test on the Army Alpha and Beta
- His definition of intelligence was
  "The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (1939)"
- but his test yielded a Verbal IQ and Performance IQ suggesting two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

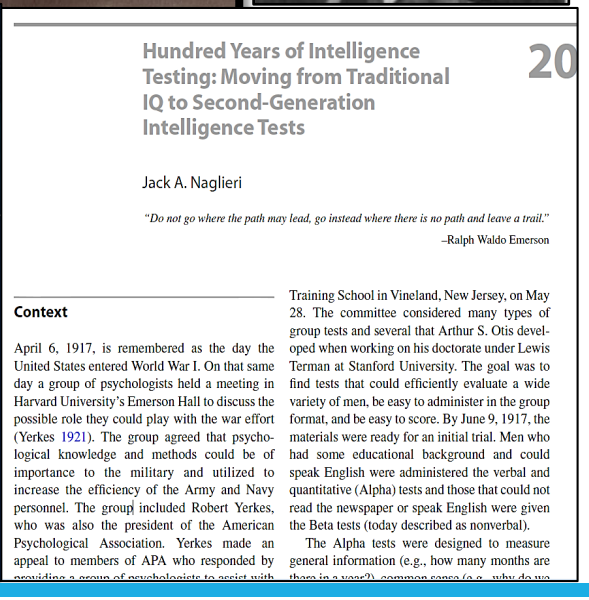
Evolution of IQ http://www.jacknaglieri.com/cas2.html











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

20

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 6, 1917, is remembered as the day the United States entered World War I. On that same day a group of psychologists held a meeting in 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

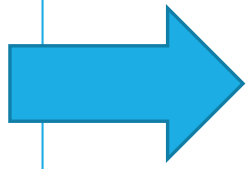
Training School in Vineland, New Jersey, on May 28. The committee considered many types of group tests and several that Arthur S. Otis developed when working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of men, be 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 (today described as nonverbal).

The Alpha tests were designed to measure general information (e.g., how many months are

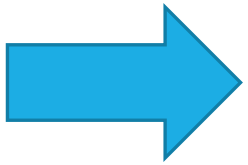
- A group of psychologists met at Harvard in April of 1917 to construct an ability test to help the US military evaluate recruits (WWI) for responsible positions
- Their goal was to develop a workable set of tests

From Alpha & Beta to Wechsler IQ

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

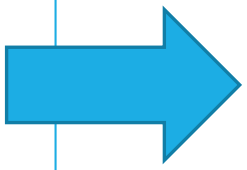


Verbal IQ

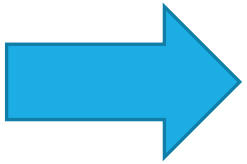


Verbal and Quantitative on CogAT & Otis-Lennon

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



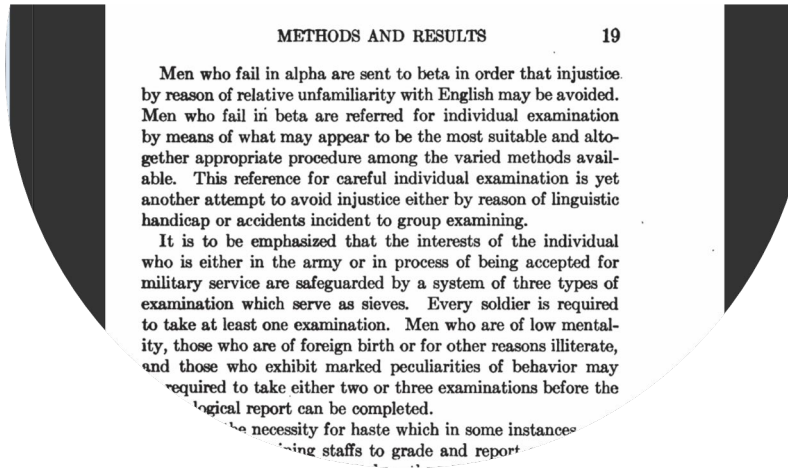
Originally called “Performance” now “Nonverbal”



Naglieri Nonverbal Ability Tests

General ability

- Wechsler “believed that his Verbal and Performance Scales represented … general ability… he never believed and nonverbal intelligence as being separate from general ability. 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)
- Yoakum and Yerkes (1920, p. 19) “Men who fail in alpha are sent to beta in order that injustice by reason of relative unfamiliarity with English may be avoided”
- This is a social justice issue of equitable assessment



METHODS AND RESULTS 19

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

It is to be emphasized that the interests of the individual who is either in the army or in process of being accepted for military service are safeguarded by a system of three types of examination which serve as sieves. Every soldier is required to take at least one examination. Men who are of low mentality, those who are of foreign birth or for other reasons illiterate, and those who exhibit marked peculiarities of behavior may required to take either two or three examinations before the logical report can be completed.

the necessity for haste which in some instances ining staffs to grade and report

Take this IQ Test

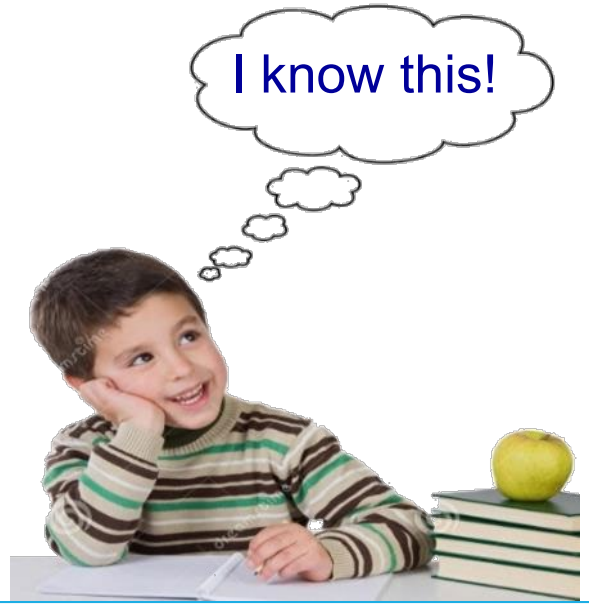
1. Bull Durham is the name of
2. The Mackintosh Red is a kind of
3. The Oliver is a
4. A passenger locomotive type is the
5. Stone & Webster are well know
6. The Brooklyn Nationals are called
7. Pongee is a
8. Country Gentleman is a kind of
9. The President during the Spanish War was
10. Fatima is a make of

1. **tobacco**
2. **fruit**
3. **typewriter**
4. **Mogul**
5. **engineers**
6. **Superbas**
7. **fabric**
8. **corn**
9. **Mckinley**
10. **cigarette**

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

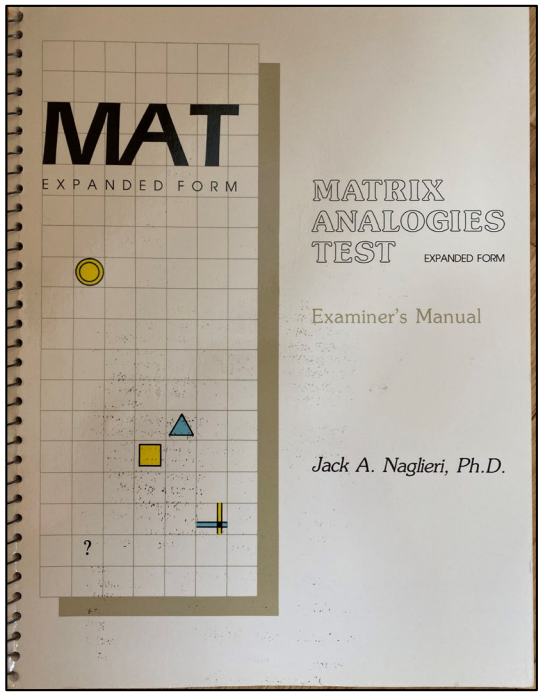
Measure Thinking not Knowledge

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

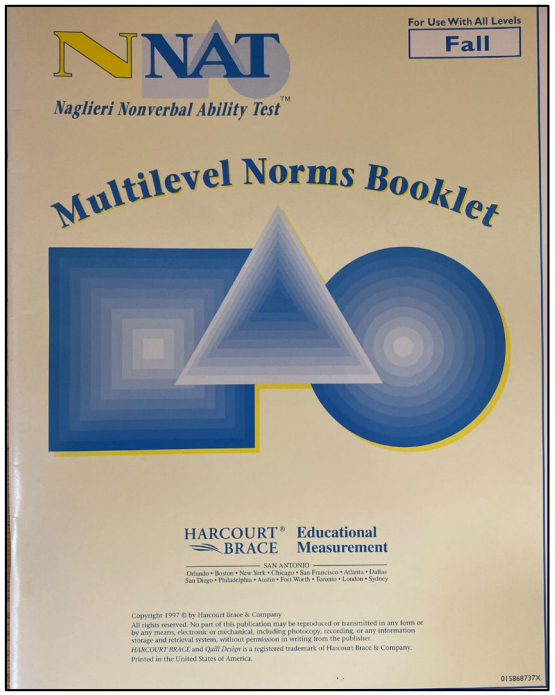


- How does the student have to think to complete a task?
  - This is dependent on the brain

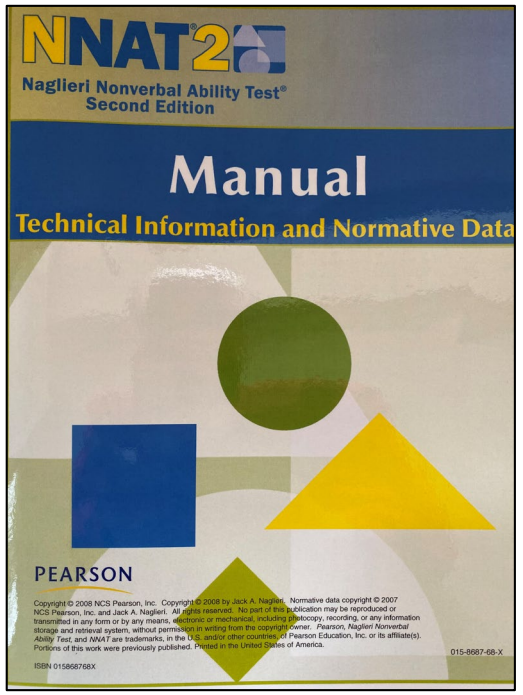
Measure Thinking Since 1985: History



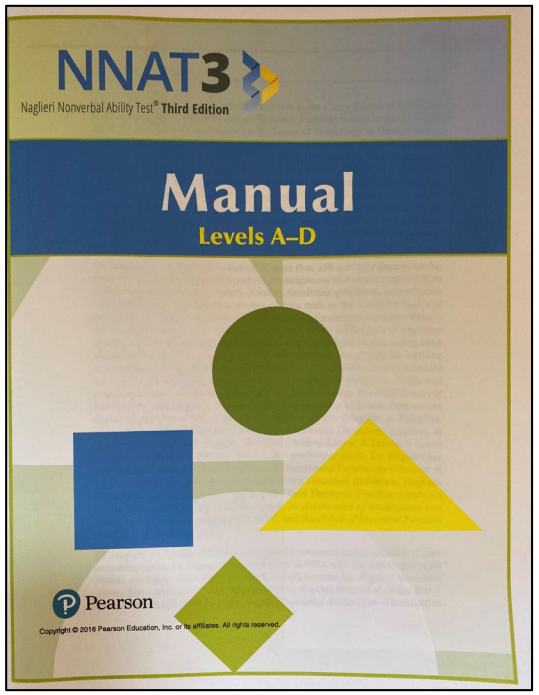
1985 MAT Short and Expanded Forms



Renamed Naglieri Nonverbal Ability Test in 1997



NNAT -2 published in 2008



NNAT -3 published in 2016

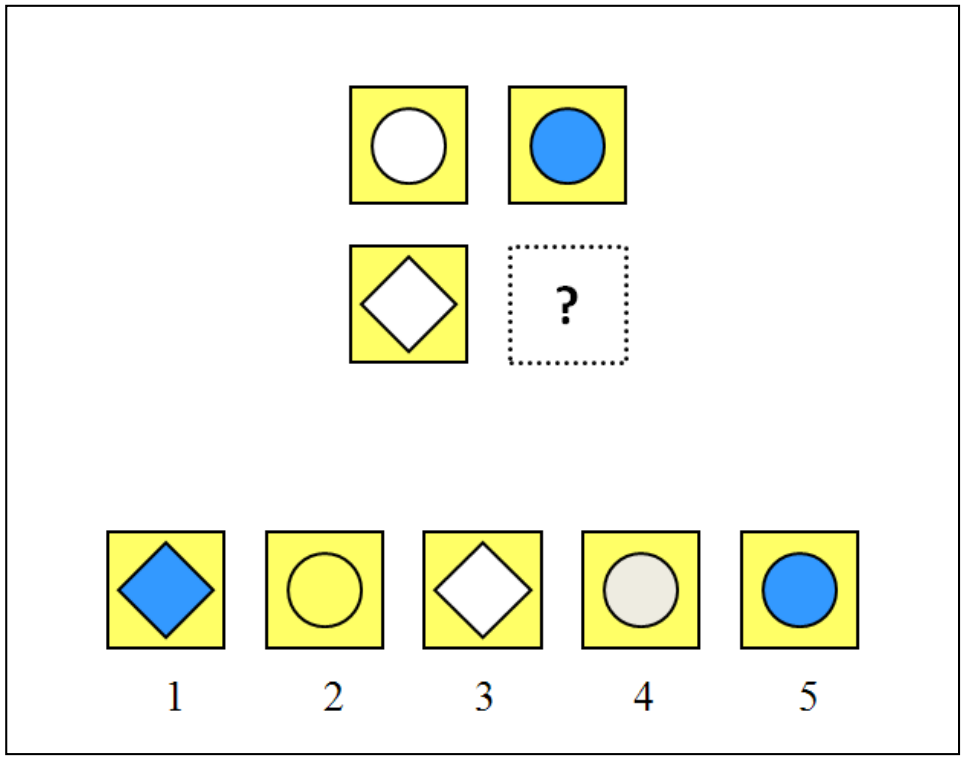
General Ability

- Wechsler recognized that the nonverbal tests were best for uneducated populations and those whose primary language was not English
- My goal, with the NNAT, NNAT-2 and NNAT-3 was to measure general ability using geometric shapes arranged in a 2 by 2 or 3 by 3 matrix. That is why these tests are called ‘progressive matrices’
- The first time I made these items was for the K-ABC

What Does A Nonverbal Test Measure?

General Ability!

These questions require General Ability!



Which word is different:
girl dog chair fish ?

3 is to 6 as 5 is to _____?

C^7 is to F as E^7 is to____?

Despite the differences in content, each of these questions requires understanding the relationships among parts.

Does the Nonverbal Test Work?

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?**

THE WALL STREET JOURNAL.

DOWJONES MONDAY, DECEMBER 29, 2003

Brain Drain

Initiative to Leave No Child Behind Leaves Out Gifted

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

Blow to Bright Minority Kids

By Daniel Golden

SPRINGFIELD, Ill.—To make sure even the most disadvantaged students learn the three R's, Congress two years ago passed a law known as No Child Left Behind. National test scores suggest it is indeed helping the weakest students.

There's just one problem: It may be leaving behind some of the strongest.

The 2001 law, championed by the Bush administration, calls for all public-school students to be proficient in reading and math by 2014. Schools must make steady progress toward these goals. They face penalties if they don't continually raise their proportion of proficient students, both overall and within various racial and other categories. Schools that miss milestones can be required to pay for outside tutors and let parents transfer children elsewhere. But a school faces no penalty if top students fall off as long as they remain profi-

Devion Ross

What's News—

Business and Finance

THE PARMALAT SCANDAL widened, with prosecutors saying company founder Calisto Tanzi is under investigation for misappropriating about $600 million. An Italian court Saturday declared the dairy company insolvent. Prosecutors believe Parmalat's complex global financial structure was the means by which the firm was able to mask the alleged fraud for years.

■ **Two Grant Thornton employees** are under scrutiny in connection with fraudulent documents related to their audits of a Cayman Islands-based Parmalat unit.

(Articles in Column 5 and on Page A2)

■ **The U.S. Holstein** infected with mad-cow disease might have originated in Canada. Meat companies and retailers are trying to recall beef from the cow.

■ **Some experts say** the risk of eating meat made from sick cattle remains unknown. Japan and other trading partners are unlikely to lift their bans on U.S. beef.

(Articles on Pages A3, A8, B1 and C6)

■ **Retail spending grew** a healthy 6.5% during the holiday shopping season, according to data showing MasterCard use.

(Article on Page B1)

■ **Corporate related-party deals** are attracting increased attention,

World-Wide

■ **U.S. AND OTHER AID POURED** into Bam, Iran's quake-blasted city. Death-toll estimates passed 22,000 after the 6.6-magnitude temblor hit the region of mud-brick structures Friday and aftershocks tumbled much of what initially survived. As many as 30,000 are injured and 100,000 are homeless. Despite policy divisions, the Bush administration dispatched seven planeloads of rescue workers and supplies. Such "earthquake diplomacy" can heal enmity. (Page A3)

Lost to humanity is the Bam citadel, a maze of crenelated walls, towers, mosques and caravanserai that lay along the ancient Silk Road. Parts of the complex dated back 2,000 years.

■ **Roadside bombs killed** two U.S. soldiers and two Iraqi children in and near Baghdad. On Saturday, a series of coordinated suicide attacks in Karbala left five Bulgarian and two Thai troops dead, as well as 12 Iraqis, including policemen. Four Americans died Friday. Japan said it would forgive most of what Iraq owes it if other Paris Club nations do likewise.

■ **North Korea confirmed** it is willing to hold a fresh round of nuclear-crisis talks with the U.S. and four other nations early in 2004. The announcement came in a weekend visit by a high-level Chinese diplomat.

■ **The chief U.N. atomic inspector led** teams in searching four Libyan nuclear-related sites, first fruits of Tripoli's renunciation of banned arms.

■ **Pakistan will go ahead** with next week's regional summit in Islamabad

Devion Graduated High School and…

Gifted Identification

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

Number of Students Missed = 848,402

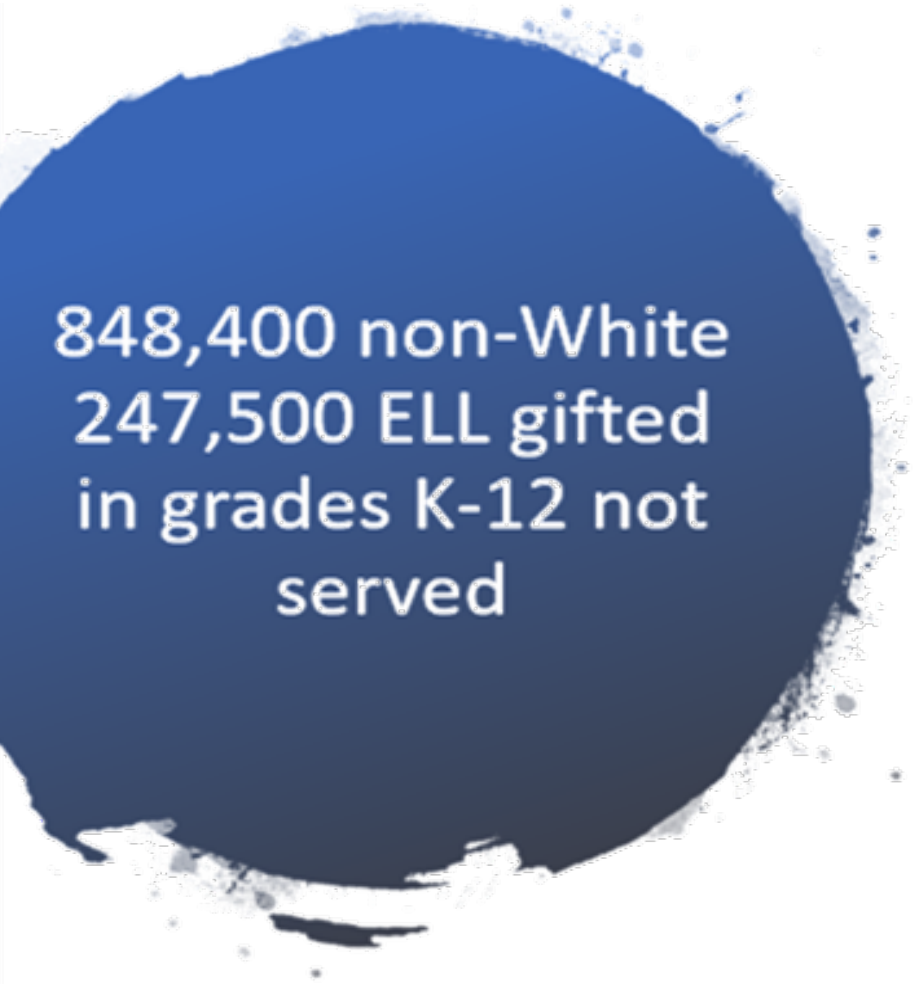
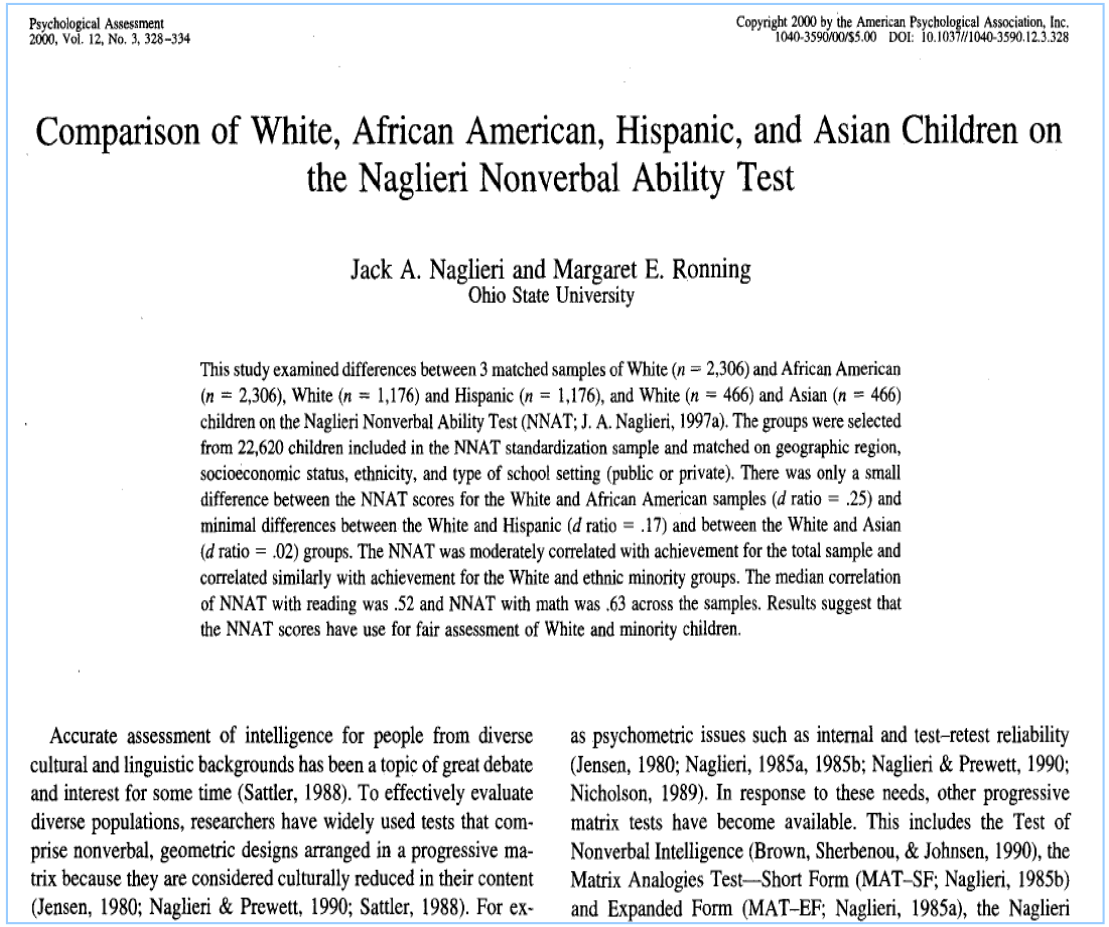


Table 1. Number of Students in US Public Schools Grades K-12 in 2018

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

From: Naglieri, J. A. (in preparation). *Manual for the Naglieri Ability Test: Nonverbal*.

Does the NNAT work for all groups?



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

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

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

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

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

Accurate assessment of intelligence for people from diverse cultural and linguistic backgrounds has been a topic of great debate and interest for some time (Sattler, 1988). To effectively evaluate diverse populations, researchers have widely used tests that comprise nonverbal, geometric designs arranged in a progressive matrix because they are considered culturally reduced in their content (Jensen, 1980; Naglieri & Prewett, 1990; Sattler, 1988). For example, psychometric issues such as internal and test–retest reliability (Jensen, 1980; Naglieri, 1985a, 1985b; Naglieri & Prewett, 1990; Nicholson, 1989). In response to these needs, other progressive matrix tests have become available. This includes the Test of Nonverbal Intelligence (Brown, Sherbenou, & Johnsen, 1990), the Matrix Analogies Test—Short Form (MAT–SF; Naglieri, 1985b) and Expanded Form (MAT–EF; Naglieri, 1985a), the Naglieri

	N	Mean	Diff
White	2,306	99.3	
Black	2,306	95.1	4.2
White	1,176	101.4	
Hispanic	1,176	98.6	2.8
White	466	103.6	
Asian	446	103.9	0.3

Table 20.1 Mean score differences in standard scores by race on traditional IQ and second-generation intelligence tests

Test	Difference
Traditional	
SB-IV (matched)	12.6
WISC-IV (normative sample)	11.5
WJ-III (normative sample)	10.9
WISC-IV (matched)	10.0
Second generation	
KABC (normative sample)	7.0
KABC (matched)	6.1
KABC-2 (matched)	5.0
CAS2 (normative sample)	6.3
CAS (demographic controls)	4.8
CAS2 (demographic controls)	4.3

Notes: Stanford-Binet IV (SB-IV) from Wasserman (2000); (Woodcock-Johnson III) WJ-III from Edwards and Oakland (2006); Kaufman Assessment Battery for Children (KABC) matched from Naglieri (1986); Kaufman Assessment Battery for Children – 2 from (Lichtenberger et al. 2009); CAS from Naglieri, Rojahn, Matto, and Aquilino (2005); Wechsler Intelligence Scale for Children – IV (WISC-IV) from O'Donnell (2009)

Race Differences by Test (Naglieri 2015)

Naglieri, J. A. (2015). 100 Years of intelligence testing: Moving from traditional IQ to second-generation intelligence tests. In Goldstein, Princiotta & Naglieri, *Handbook of Intelligence*. New York: Springer.

NNAT's Small Race & Ethnic Differences

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

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

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

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

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

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

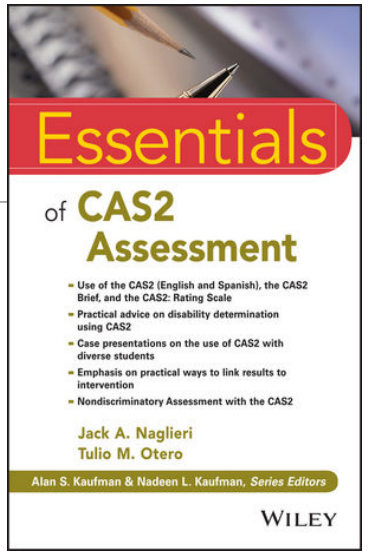


Table 1.6 Standard Score Mean Differences by Race on Traditional and Nontraditional Intelligence Tests

Test	Difference
Traditional IQ Tests	
SB-IV (matched samples)	12.6
WISC-IV (normative sample)	11.5
WJ-III (normative sample)	10.9
WISC-IV (matched samples)	10.0
Nontraditional Tests	
K-ABC (normative sample)	7.0
K-ABC (matched samples)	6.1
KABC-II (matched samples)	5.0
CAS2 (normative sample)	6.3
CAS (demographic controls of normative sample)	4.8
CAS2 (demographic controls of normative sample)	4.3

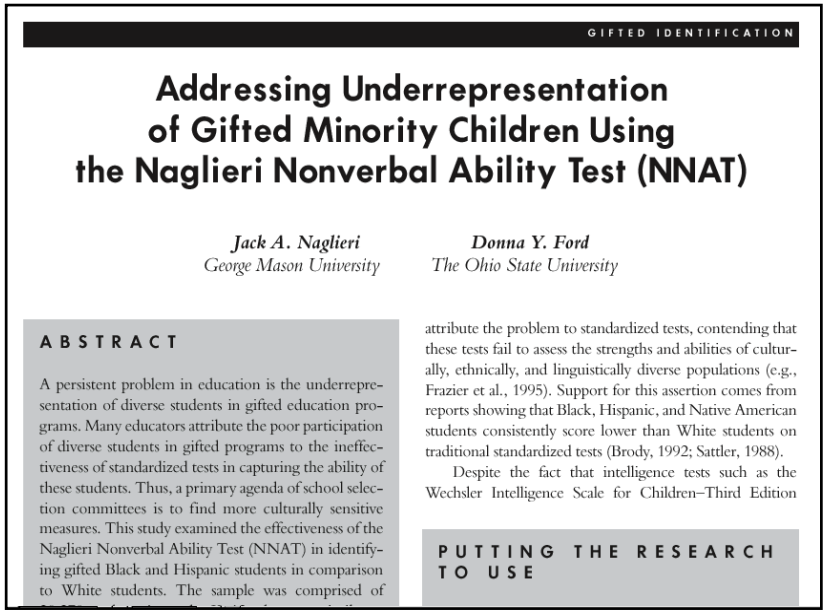
NNAT Identified Equal Percentages

Table 2

NNAT Scores

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

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



GIFTED IDENTIFICATION

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

Jack A. Naglieri
George Mason University

Donna Y. Ford
The Ohio State University

ABSTRACT

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

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

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

PUTTING THE RESEARCH TO USE

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

Hispanic Children

Psychological Assessment
2004, Vol. 16, No. 1, 81–84

1040-3590/04/$12.00 DOI: 10.1037/1040-3590.16.1.81

BRIEF REPORTS

Comparison of Hispanic Children With and Without Limited English Proficiency on the Naglieri Nonverbal Ability Test

Jack A. Naglieri
George Mason University

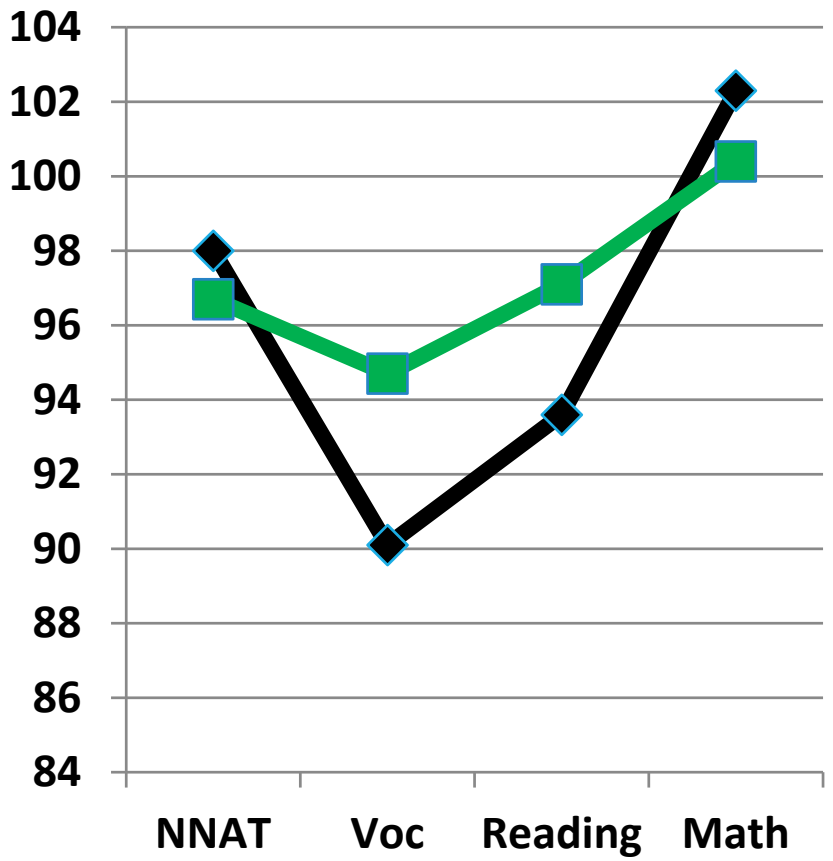
Ashley L. Booth
University of Virginia

Adam Winsler
George Mason University

Hispanic children with (n = 148) and without (n = 148) limited English proficiency were given the Naglieri Nonverbal Ability Test (NNAT; J. A. Naglieri, 1997a) and the Stanford Achievement Test—9th edition (SAT–9; 1995). The groups were selected from the NNAT standardization sample (N = 22,620) and matched on geographic region, gender, socioeconomic status, urbanicity, and ethnicity. There was a very small difference (d ratio = 0.1) between the NNAT standard scores for the children with limited English proficiency (M = 98.0) and those without limited English proficiency (M = 96.7). The NNAT correlated moderately and similarly with achievement for the 2 groups. The sample of children with limited English proficiency earned considerably lower scores on SAT–9 Reading and Verbal subtests. Results suggest that the NNAT may be useful for the assessment of Hispanic children with and without limited English proficiency.

Assessment of intelligence for persons with limited English language skills has been an important issue since the familiar verbal–nonverbal organization of tests was initially made popular in the Army Alpha and Beta tests (Yoakum & Yerkes, 1920). The value of a nonverbal test for evaluation of diverse populations was noted by Yoakum and Yerkes more than 80 years ago: "Men who fail in alpha [the verbal tests] are sent to beta [the nonverbal tests] in order that injustice by reason of relative unfamiliarity with English may be avoided" (p. 19). The Beta tests and other similar nonverbal tests have, therefore, served an important role in effective assessment of diverse populations because their content is

Recent research on the nonverbal approach to measuring general ability has shown that the Naglieri Nonverbal Ability Test (NNAT; Naglieri, 1997a) can be an effective way to assess general ability, yields small race and ethnic group differences, and shows good prediction of achievement. Naglieri and Ronning (2000a) provided a detailed study of mean score differences between matched samples of White (n = 2,306) and Black (n = 2,306), White (n = 1,176) and Hispanic (n = 1,176), and White (n = 466) and Asian (n = 466) children on the NNAT. Only small differences were found between the NNAT scores for the White and Black samples (Cohen's d



Does the NNAT work for males & females?

ELSEVIER

Available online at www.sciencedirect.com
SCIENCE DIRECT®

Intelligence 34 (2006) 253–260

INTELLIGENCE

Developmental gender differences on the Naglieri Nonverbal Ability Test in a nationally normed sample of 5–17 year olds

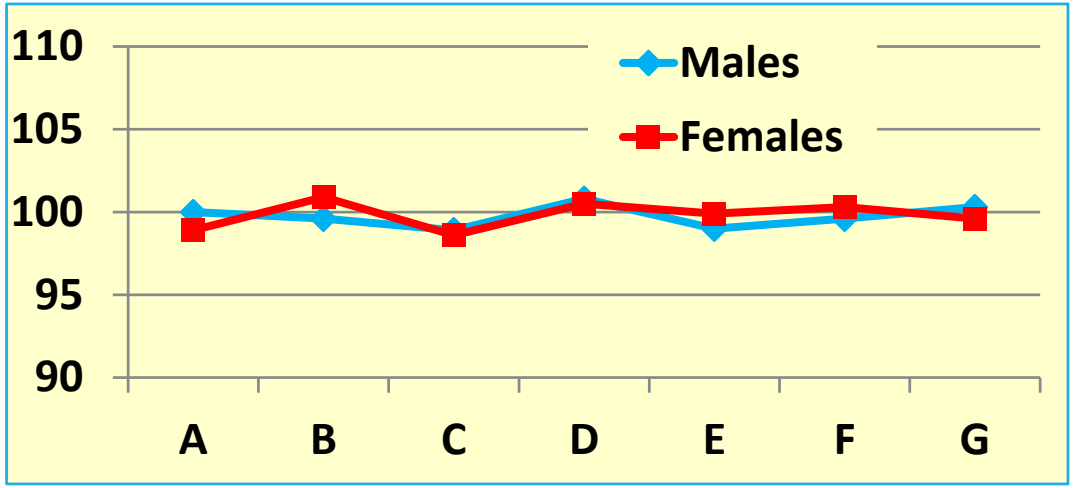
Johannes Rojahn *, Jack A. Naglieri

George Mason University, United States

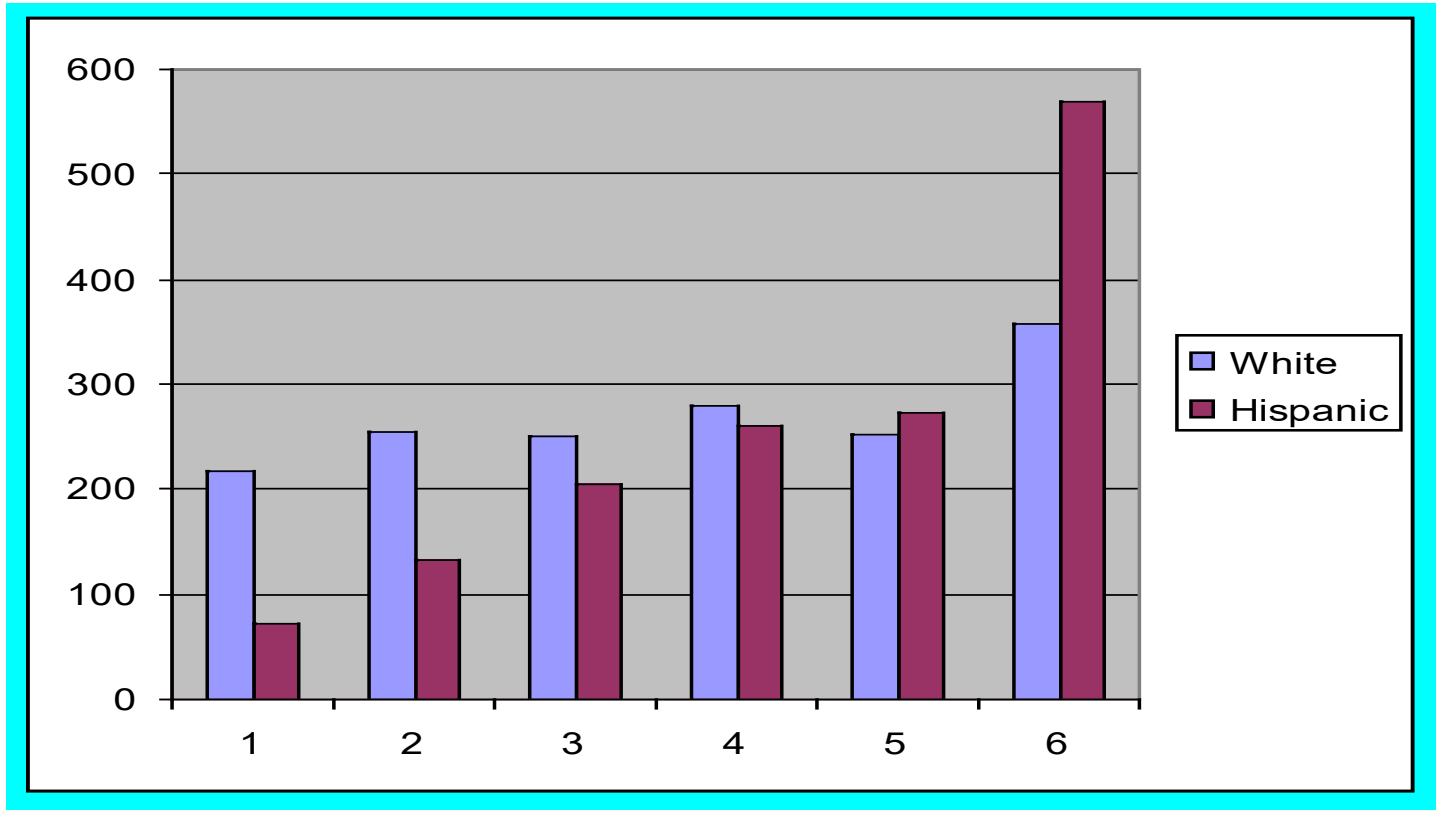
Received 22 June 2005; received in revised form 18 September 2005; accepted 26 September 2005
Available online 14 November 2005

Abstract

Lynn [Lynn, R. (2002). Sex differences on the progressive matrices among 15–16 year olds: some data from South Africa. *Personality and Individual Differences 33*, 669–673.] proposed that biologically based developmental sex differences produce different IQ trajectories across childhood and adolescence. To test this theory we analyzed the Naglieri Nonverbal Ability Test (NNA; [Naglieri, J. A. (1997). *Naglieri Nonverbal Ability Test-Multilevel Form*. San Antonio: Harcourt Assessment Company.]) standardization sample of 79,780 children and adolescents in grades K-12, which was representative of the US census on several critical demographic variables. NNAT data were consistent with Lynn's developmental theory of gender differences insofar as (a) there were no gender differences between 6 and 9 years; (b) females scored slightly higher between 10 and 13 years; and (c) males were ahead of females between the ages of 15 and 16. However, the discrepancies between the genders were smaller than predicted by Lynn. In fact they were so small that they have little or no practical importance. In other words, the NNAT did not reveal meaningful gender differences at any stage between the ages of 6 and 17 years.



Dr. Dina Brulles Glendale, AZ
Gifted using NNAT in Years 2000-2006



Numbers of gifted population depicted by ethnic representation of White and Hispanic gifted student populations between 2000-2006

ID Rates for NNAT and COGAT

2013-2015 Screening pool

NNAT

Ethnic Group	Frequency	Percent
White	1492	80.6%
Black	87	4.7%
Hispanic	272	14.7%
Total	1851	

COGAT VQN

Ethnic Group	Frequency	Percent
White	1333	89.0%
Black	40	2.7%
Hispanic	125	8.3%
Total	1498	

% Inscrease for Blacks -->	54.0%
% Inscrease for Hispanics -->	54.0%

Introducing The Naglieri Tests of General Ability

(Naglieri, Brulles & Lansdowne, 2021)

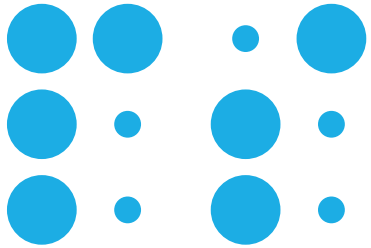
Naglieri Nonverbal (Naglieri)

Naglieri Verbal (Naglieri & Brulles)

Naglieri Quantitative (Naglieri & Lansdowne)

Measuring Ability Equitably

- Dina Brulles, Kim Lansdowne and I have constructed three new tests that will be used for identification of gifted students
- The focus of these tests is EQUITABLE ASSESSMENT of all students
- The tests are currently in norming phase
- The tests measure general ability using three types of content: Verbal, Nonverbal and Quantitative
  - Naglieri Ability Test- **Nonverbal** (NAT-NV) (Naglieri, 2021)
  - NAT-**Verbal** (Naglieri & Brulles, 2021)
  - NAT-**Quantitative** (Naglieri & Lansdowne, 2021)

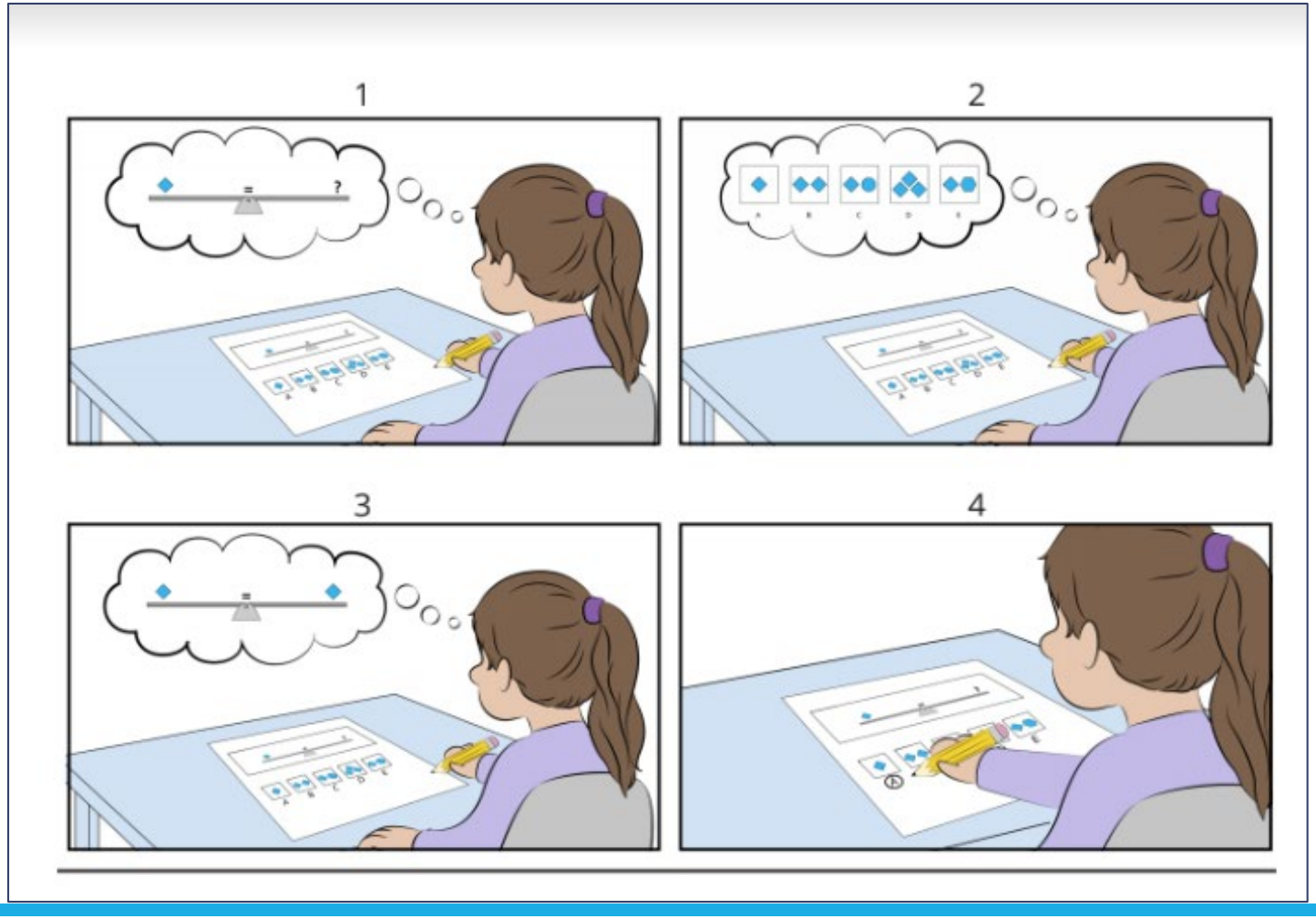


Description Of The Nonverbal Measure Of General Ability

Naglieri (2021)

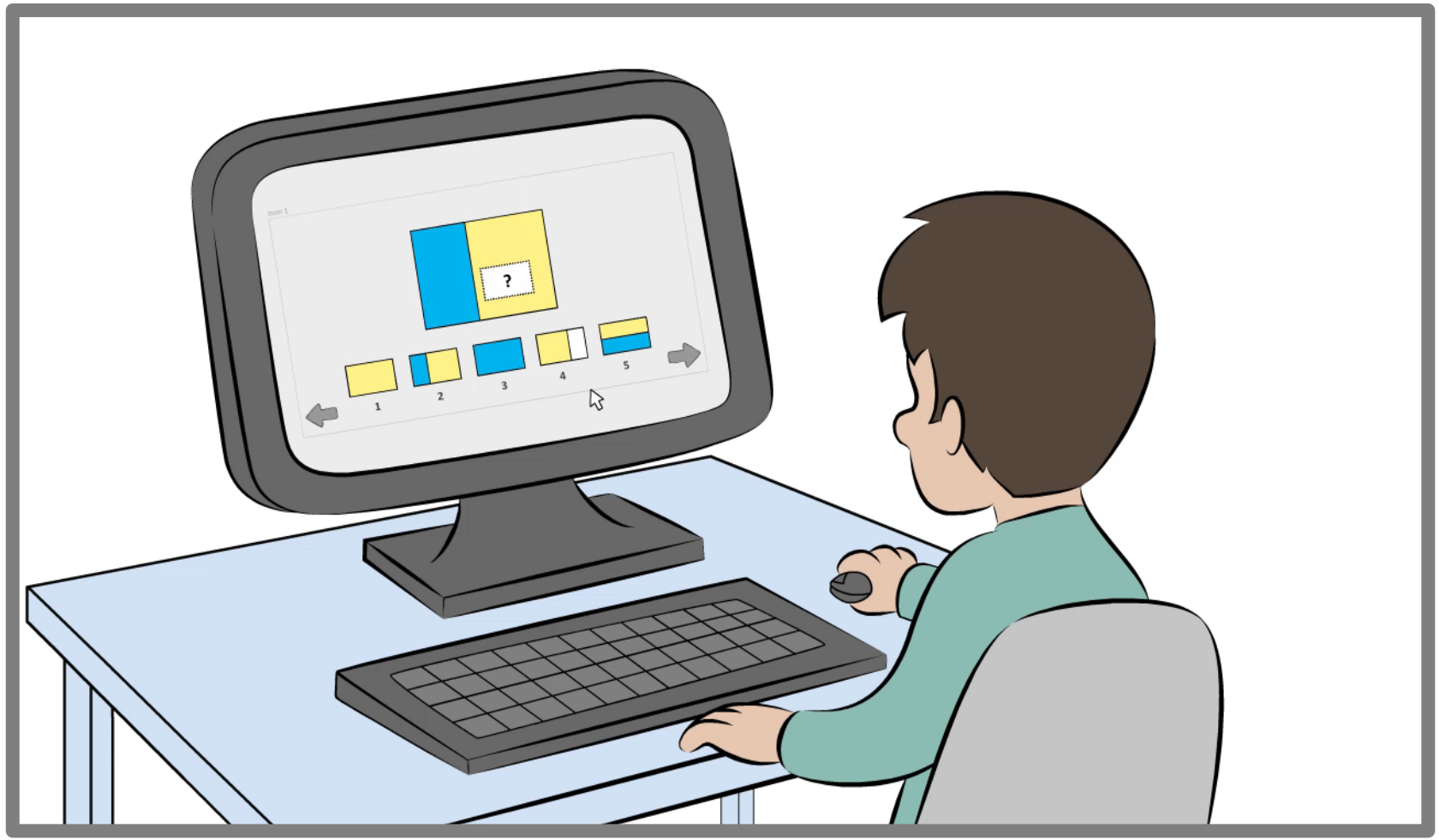
Pictorial Instructions for All Students

- The paper form for all three tests have *pictorial directions*
- Naglieri Nonverbal: General Ability Test (Naglieri, 2021)
- Naglieri Verbal: General Ability Test (Naglieri & Brulles, 2021)
- Naglieri Quantitative: General Ability Test (Naglieri & Lansdowne, 2021)

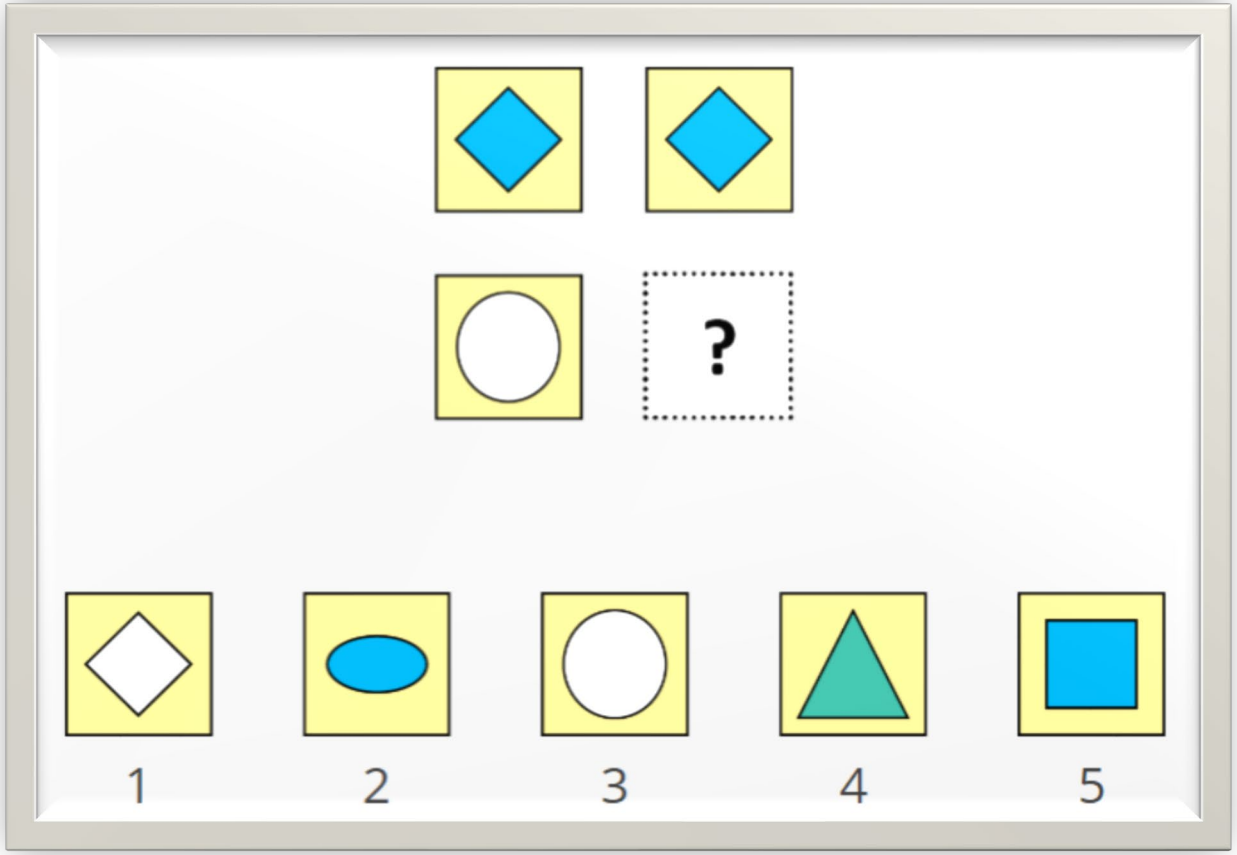


Animated Directions for All Students

- All three online tests have *animated directions*
- Naglieri NonVerbal: General Ability Test (Naglieri, 2021)
- Naglieri Verbal: General Ability Test (Naglieri & Brulles, 2021)
- Naglieri Quantitative: General Ability Test (Naglieri & Lansdowne, 2021)



Naglieri Ability Test - Non-verbal



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

NAT-Nonverbal Pilot Study Results

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

Description of the Verbal Measure of General Ability

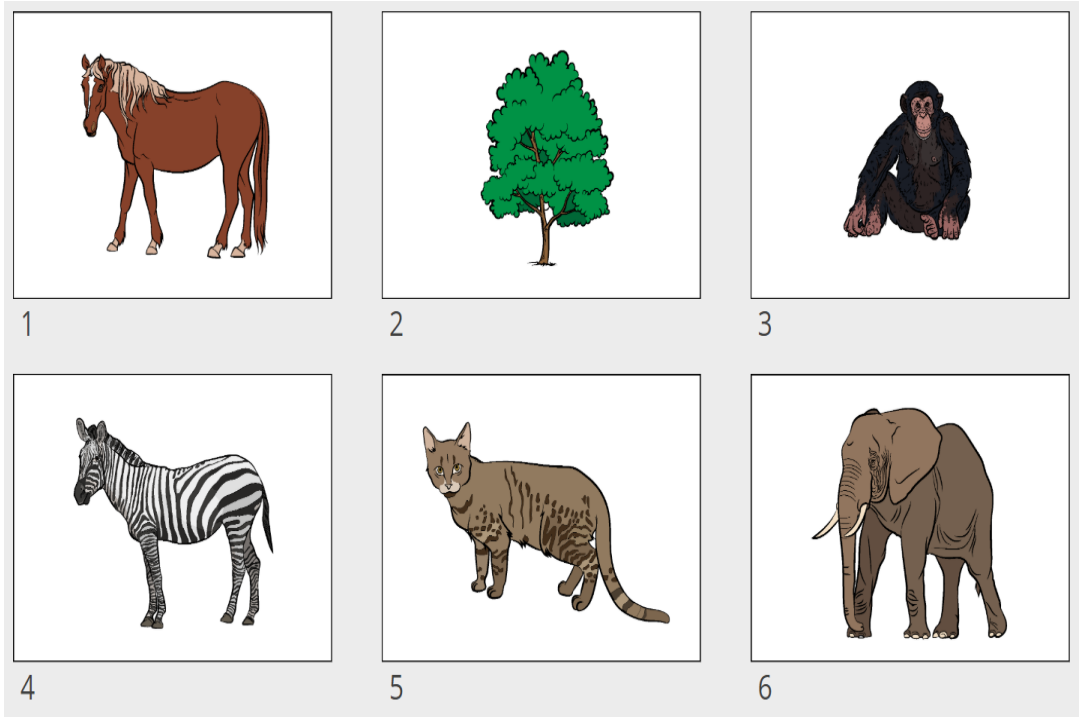
Naglieri & Brulles (in preparation)

Naglieri Ability Test - Verbal

This test was modeled after an approach described by A. R. Luria (1966) to evaluate verbal conceptual thinking.

Luria (1982) stated that language involves, "a complex system of codes (p. 29)" where, "every word *designates a thing, an attribute, an action or a relationship* (p 34)."

The task, referred to as superfluous fourth, demands that a subject reason and identify which word does not belong with the others, for example, "rose, daisy, stem, tulip,".



Authors: Jack Naglieri & Dina Brulles

NAT-Verbal Pilot Study Results

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

Description of the Quantitative Measure of General Ability

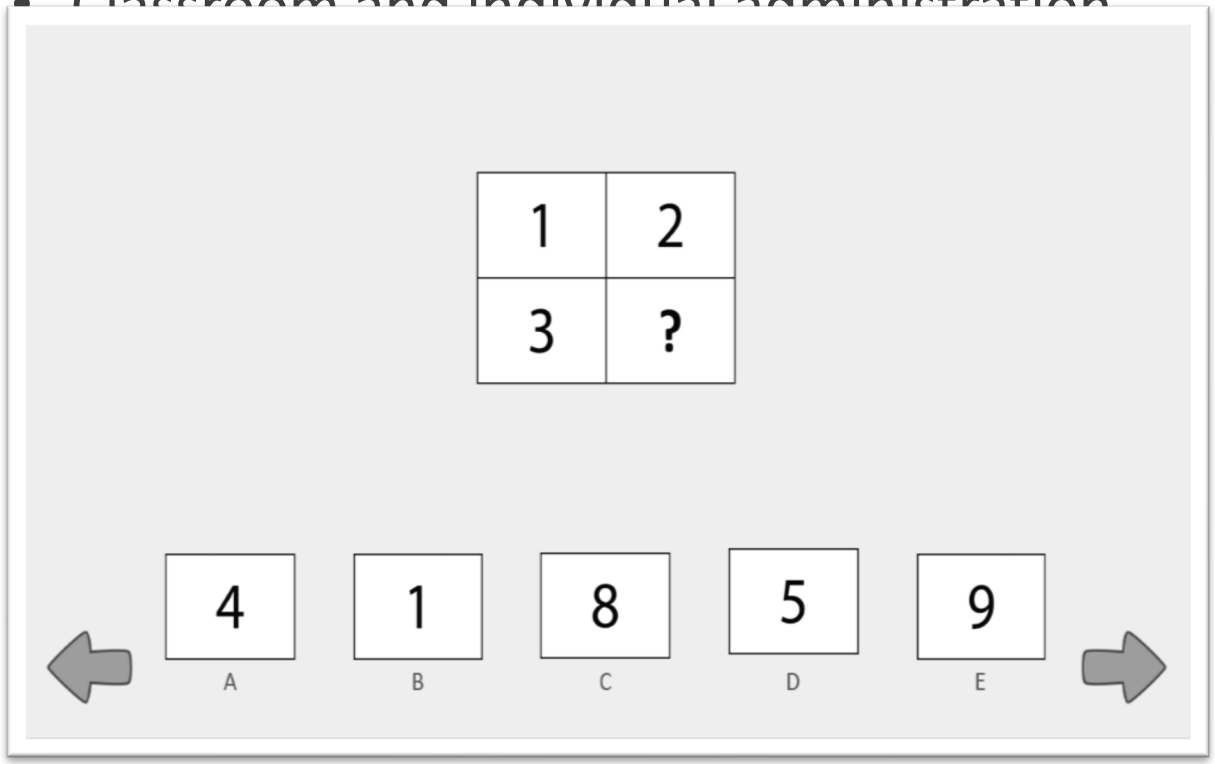
Naglieri & Lansdowne (in preparation)

Naglieri Ability Test - Quantitative

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

Authors: Jack Naglieri & Kim Lansdowne

- Online and paper version
- Classroom and individual administration



Quantitative Pilot Study Results

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

Turn & Talk:
Do you agree that these tests all measure the same ability?

How Best to Use These Tests

Final Thoughts

Verbal Tests Discriminate

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 n Mariela Montoya; JOCELYN BURC by her parent and next friend, Griseld and KASHMIR IVY, minors, by thei and next friend, Beverly Ivy; KRISTIA SIFUENTES, minors, by her parent ar friend, Irma Sifuentes,

Plaintiffs,

v.

BOARD OF EDUCATION FOR ILLINOIS SCHOOL DISTRICT U-46,

Defendant.

Judge Robert W. Gettleman

CogAt Verbal, Quantitative require English

Weighted matrix favored achievement and CogAT

Too little reliance on NNAT

The district with 42 only 2% were identified as gifted.
Did the District discriminate against Hispanic Students?

On July 11, 2013, Judge Robert Gettlemen 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

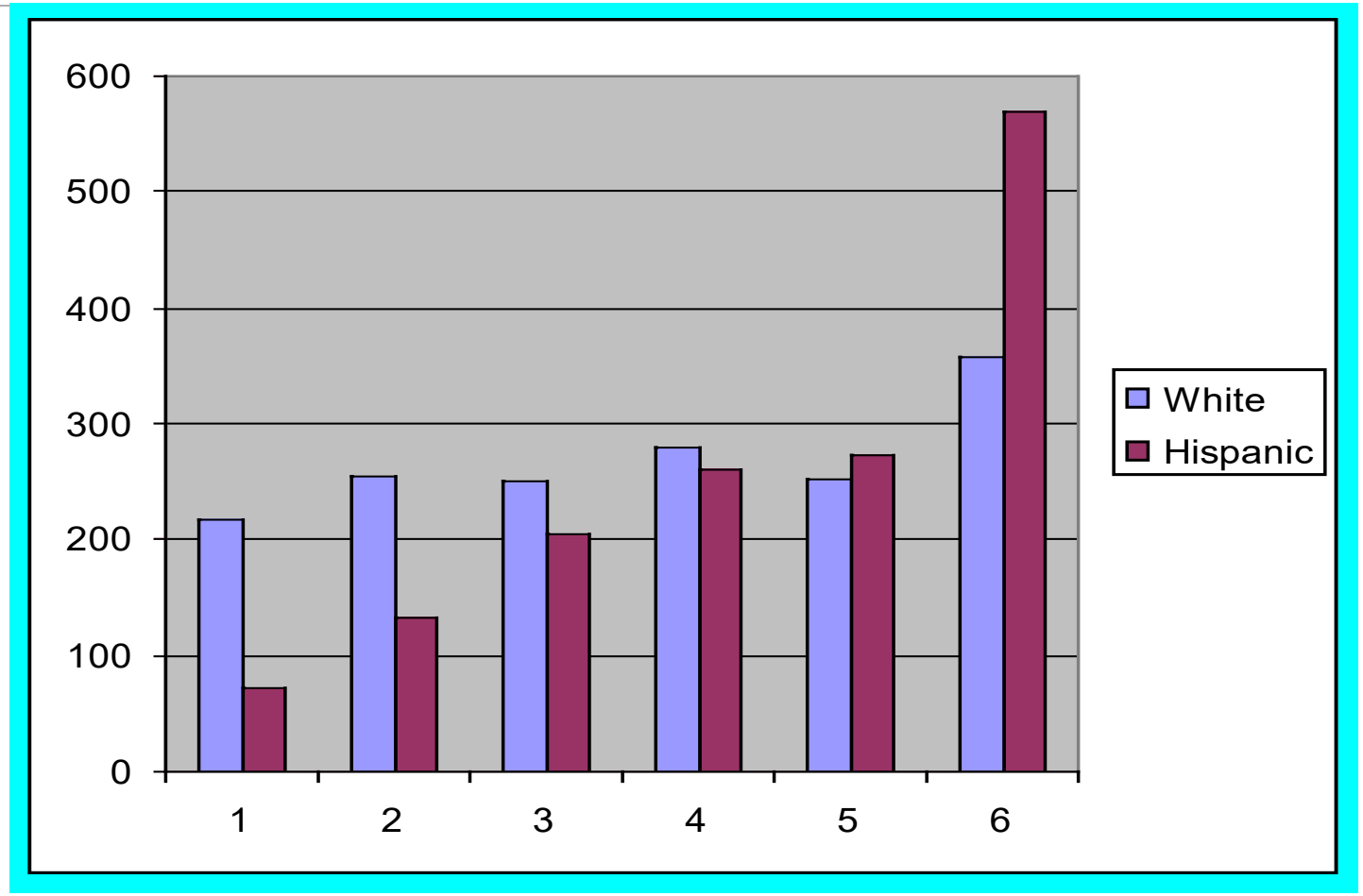
students – Hispanic and Black students for SWAS. Judge Gettlemen found discrimination regarding (a) tests for screening and for identification, (b) designated cutoff scores for screening and identification, (c) use of both verbal and math scores at arbitrary designated levels for screening and for identification, (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 SWAS, (f) re-testing Hispanic students for middle school gifted program, (g) timing of testing, (h) use of parental referrals, and (i) use of teacher referrals (see Table 2).

How to Equitably Identify Gifted

- Do **universal screening** with ability tests that do not require knowledge of English
- Naglieri nonverbal has been shown to be an efficient way to test a large number of students for gifted programs
- Adding Verbal and Quantitative tests that do not demand knowledge of English will increase participation of under-served populations
- These tests will also be useful when using a matrix to avoid problems illustrated in the U-46 court case

Dr. Dina Brulles Glendale, AZ
Gifted using NNAT in Years 2000-2006

Numbers of White and Hispanic gifted student populations between 2000-2006



Verbal Tests Discriminate

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 n Mariela Montoya; JOCELYN BURC by her parent and next friend, Griseld and KASHMIR IVY, minors, by thei and next friend, Beverly Ivy; KRISTI SIFUENTES, minors, by her parent ar friend, Irma Sifuentes,

Plaintiffs,

v.

BOARD OF EDUCATION FOR ILLIN SCHOOL DISTRICT U-46,

Defendant.

Judge Robert W. Gettleman

CogAt Verbal, Quantitative require English

Weighted matrix favored achievement and CogAT

Too little reliance on NNAT

The district with 42 only 2% were identified as gifted.
Did the District discriminate against Hispanic Students?

On July 11, 2013, Judge Robert Gettlemen 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 students – Hispanic and Black students for SWAS. Judge Gettlemen found discrimination regarding (a) tests for screening and for identification, (b) designated cutoff scores 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 SWAS, (f) re-testing Hispanic students for middle school gifted program, (g) timing of testing, (h) use of parental referrals, and (i) use of teacher referrals (see Table 2).

How to Equitably Identify Gifted

- Do **universal screening** with ability tests that do not require knowledge of English
- Naglieri nonverbal has been shown to be an efficient way to test a large number of students for gifted programs
- Adding Verbal and Quantitative tests that do not demand knowledge of English will increase participation of under-served populations
- These tests will also be useful when using a matrix to avoid problems illustrated in the U-46 court case


WE CAN DO
BETTER

Participate in Standardization of New Tests

- MHS is looking for standardization sites to finalize the development of these three tests.
- Raw score data (like normed standard scores) could be used as part of the process to identify students for gifted and talented educational programs
- Contact: **Sydney Scanlan, Data Collection Coordinator at MHS: sydney.scanlan@mhs.com**

800-456-3003 ext. 447

Final thoughts and questions please

Gifted Identification is a Social Justice Issue