

# Practical Solutions to Identify all Gifted and Talented Students

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**"Do not go where the path may lead, go instead where there is no path and leave a trail." Ralph Waldo Emerson**

[www.jacknaglieri.com](http://www.jacknaglieri.com)  
<https://www.facebook.com/NaglieriNonverbalAbilityTest>

- ▶ General information, presentation handouts, copies of published research and book chapters and to ask a question see my Facebook and web page.

The screenshot shows the homepage of JACKNAGLIERI.COM. At the top, there is a navigation menu with links for HOME, ABOUT, PUBLICATIONS, TESTS, HANDOUTS & RESOURCES BY TEST, TESTIMONIALS, and CONTACT. Below the menu is a grid of test covers including: Comprehensive Executive Function Inventory (EF), Cognitive Assessment System (CAS2), DESSA (Devereux Student Strengths Assessment), DESSA-MINI, SYSTEM-BASED SCALAR SCALES (SBS), Gamma, NAT (Nonverbal Ability Test), Devereux Scales of Mental Disorders, and Devereux Early Childhood Assessment (DECA). Below the grid are four columns of text: ABOUT (Jack A. Naglieri, Ph.D., is Research Professor at the Curry School of Education...), PUBLICATIONS (The author of more than 300 publications...), TESTS (A comprehensive list of Jack A. Naglieri's tests...), and RESOURCES (Download a PDF of handouts of past presentations...). Each column has a 'Read More' button.

The screenshot shows the Facebook page for 'Naglieri Nonverbal Ability Test'. The page header includes the name and 'Product/Service'. There are tabs for Timeline, About, Photos, Likes, and More. The main content area shows a post from 'Naglieri Nonverbal Ability Test' dated October 20, 2018. The post text reads: 'Mark your calendar! Dr. Jack Naglieri will explain the differences between nonverbal ability assessments and other measures typically used for identifying gifted students in a session sponsored by our friends at Pearson. Dr. Naglieri will also discuss how nonverbal assessment can be used to screen with other programs to provide holistic view of student ability.' The post has 20 likes and 1 comment.

# Conclusions

- The identification of gifted children based on verbal and quantitative *ability* tests is fundamentally flawed because these tests require too much use of English.
- *The results:*
  - Students who come from low income families, are culturally different, and have limited English skills are not assessed accurately
  - Many Hispanic and Black students are denied entry to gifted education and therefore they don't reach their potential

Photo by Jack A. Napolitano  
(Copyright © Jack A. Napolitano)

# Wall Street Journal

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### 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 the 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 fail off as long as they remain profi-

## What's News

Business and Finance World-Wide

- U.S. AND OTHER AID POURED into Iraq, Iraqis quake-blasted city. Death toll estimates passed 2,000 after the 6.3-magnitude tremor hit the region of mud-brick structures. Friday and afterwards tumbled many of what initially survived. As many as 30,000 are injured and 100,000 are homeless. Despite policy divisions, the Bush administration dispatched seven thousands of rescue workers and supplies. Such "earthquake diplomacy" can build unity. *Page A1*
- Lost to humanity in the Bush era, a mass of ornamental birds, insects, seashells and other specimens that lay along the ancient Silk Road. Parts of the complex dated back 2,000 years. *Page A1*
- Bombide 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 Iraqi civilian and two Thai troops dead, as well as 12 Iraqi, including policemen. Four Americans died Friday. Japan said it would forgive most of what Iraq owes it. *Page A1*
- North Korea confirmed it is willing to hold a fresh round of nuclear talks with the U.S. and for other nations early in 2009. The announcement came in a weekend led by a high-level Chinese diplomat. *Page A1*
- The chief U.S. atomic inspector led teams in searching for Libyan nuclear-related sites. But Iraqis deny U.S. poll's renunciation of banned arms. *Page A1*
- Pakistan will go ahead with next week's general election as Islamist

### Project at Mint Draws Complaints From Many Quarters

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

By BROOKS BARNES

Heads, it's George Washington. Tails, it's Franklin D. Roosevelt. These days, a growing number of two-bit battles are rattling the sleepy U.S. Mint. The federal agency's commemorative quarters program, a pocket-change substitute to the 50 states, has pitted politicians, tourism officials and artists against each other in brawling battles. Launched in 1999 as a benign patriotic

### Business Ties Many Companies Transactions With 'Related Party' Deals Disclosed By 300 Large Corporations, Potential for Conflict

Legacy of Family Ownership

By JOHN R. EMBROW

Before the misdeeds that would shatter Enron Corp. came fully into focus, then-Chief Executive Kenneth Lay was asked in August 2001 about a suspicious-looking arrangement: two part-timers ran and partly owned by them, Chief Financial Officer Andrew Fastow that did significant business with Enron. *Page A1*

Wasn't there a glaring conflict of interest in Mr. Fastow acting on behalf of the huge energy concern and his own partnership in business deals totaling hundreds of millions of dollars? "Almost all big companies have related-party transactions," Mr. Lay said. He was right about that. Consider: At Lear Corp., a large Southfield, Mich.-based auto-parts supplier, 17 relatives of senior officials are employed by or have business ties to the company, a group of family ties that the company failed to report until late last year. At Mich.-based auto-parts supplier, 17 relatives of senior officials are employed by or have business ties to the company, a group of family ties that the company

### The Wisconsin quarter (above) that the Mint will issue next year. The design selected by a state panel (right) was seized at the 11th hour, prompting controversy.

Daniel Golden

△ Wall Street Journal

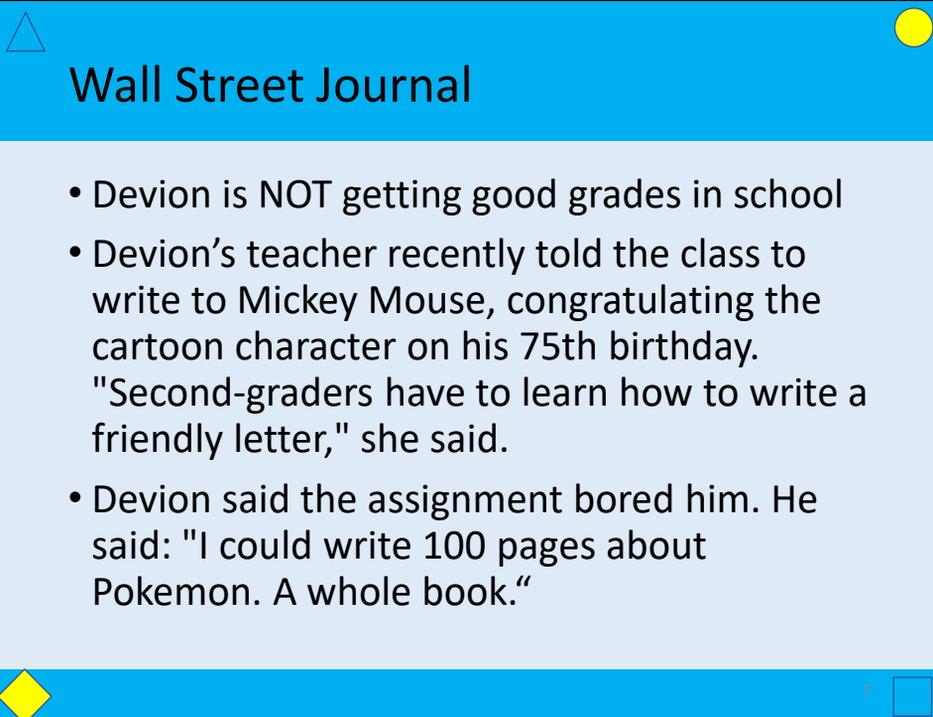
- Devion lives with his mother and father and two siblings in Springfield, Illinois
- The family has an annual income of \$12,000
- At home, Devion often reads or does word puzzles while his friends play outside.
- He is writing a book of several chapters using the family's 10-year-old computer, which was bought second-hand for \$100. It has a broken mouse.
- "I like to read books all day long,"
- He says. "I'm the only one I know that writes stories. It's a special secret I keep."



Devion Ross

△ Wall Street Journal

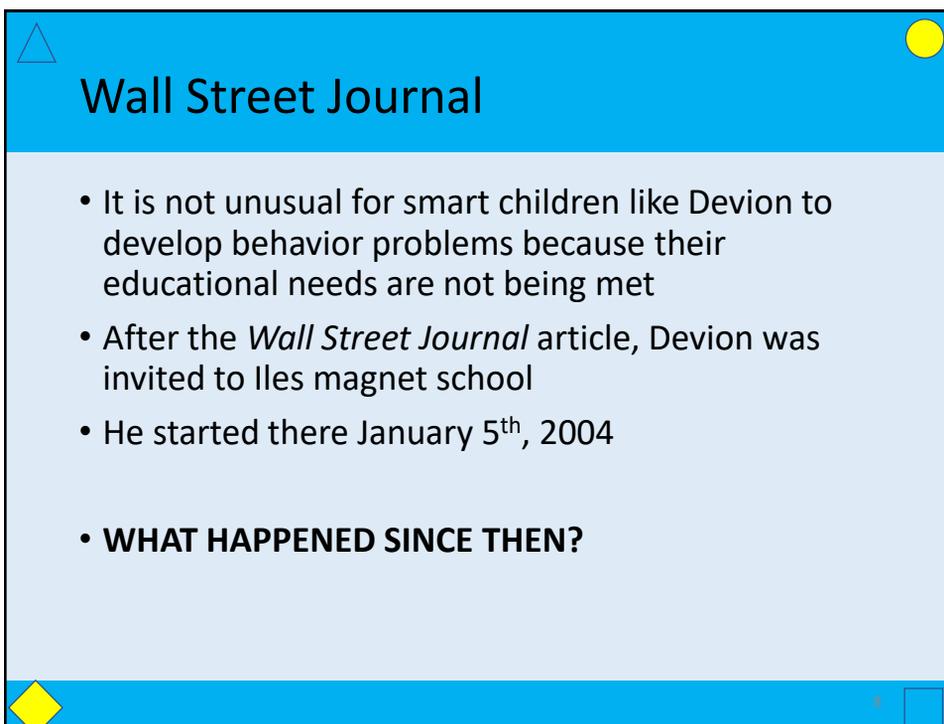
- Devion attends class in a middle-class white neighborhood, under a desegregation plan
- In kindergarten, he scored **141** out of a possible 150 on the *Naglieri Nonverbal Ability Test*
- Devion's high *Naglieri* score brought him an invitation to attend the magnet school last year
- He was the only African-American at his elementary school to qualify for gifted services
- But there have been problems



△ Wall Street Journal

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

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△ Wall Street Journal

- It is not unusual for smart children like Devion to develop behavior problems because their educational needs are not being met
- After the *Wall Street Journal* article, Devion was invited to Iles magnet school
- He started there January 5<sup>th</sup>, 2004
- **WHAT HAPPENED SINCE THEN?**

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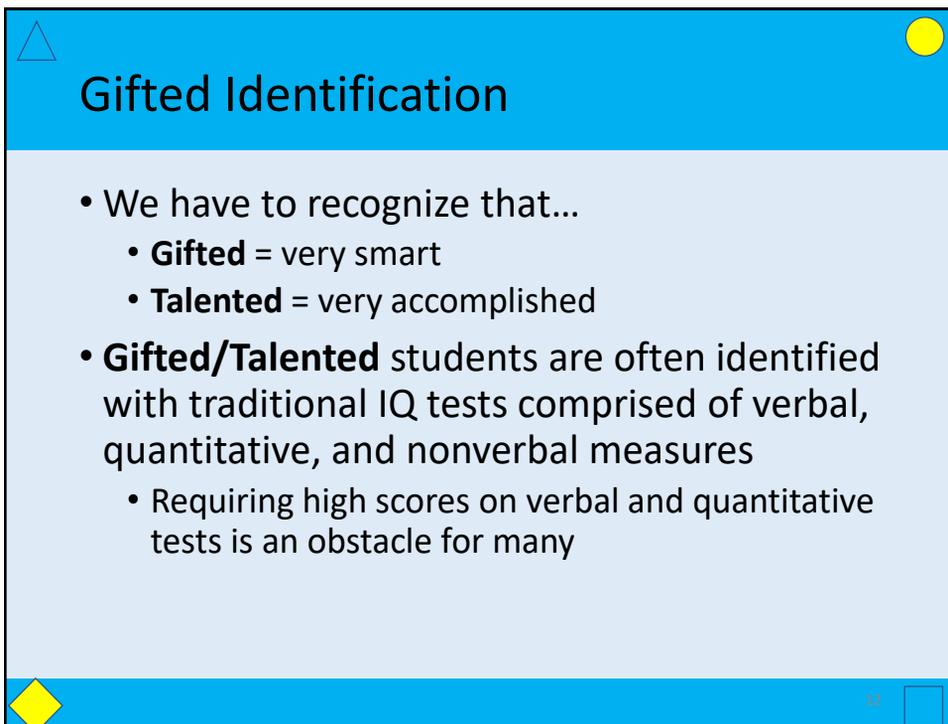
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## Gifted Identification

- This presentation is about children with may not have the academic skills or command of the English language to do well in school, yet they are very smart – **gifted**
- These children can become very **talented** given the opportunity to learn
- There are many children like this in our country, and their numbers are growing
- **HOW DO WE SELECT GT?**

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## Gifted Identification

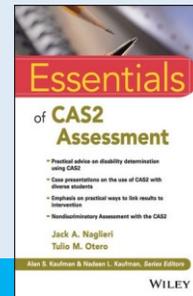
- We have to recognize that...
  - **Gifted** = very smart
  - **Talented** = very accomplished
- **Gifted/Talented** students are often identified with traditional IQ tests comprised of verbal, quantitative, and nonverbal measures
  - Requiring high scores on verbal and quantitative tests is an obstacle for many

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12

## Representation by race and ethnicity

- Black and Hispanic students have been and remain considerably underrepresented in gifted education
  - (Baldwin, 2004; Castellano & Frasier, 2010; Ford, 2013; Ford, Grantham, & Whiting, 2008; Frasier et al., 1995; Office for Civil Rights (OCR), 2004, 2006, 2009, 2011, 2012).
- Naglieri & Otero (2017) documented the extent of this under-representation



## Representation by race and ethnicity

- Office for Civil Rights report with 2011–2012 show Black students represent 19% of U.S. public school students but only 10% in gifted; a **50% under-represented**.
- Hispanic students comprise 25% of public school students but only 16% in gifted; **40% under-represented**.
- How many students have been missed?

## Representation by race and ethnicity

- 727,200 gifted students not identified (Naglieri & Otero, 2017, Essentials of CAS2 Assessment)

### Number and Percentage of Students in US Public Schools Grades K–12 in 2015

Race/Ethnicity	% in US	N	8% G and T	N Missed
White	49	24,700,000	1,976,000	
Black	15	7,700,000	616,000	308,000
Hispanic	26	13,100,000	1,048,000	419,200
Other	9	4,600,000	368,000	
Total	100	50,100,000	4,008,000	727,200

Note: N Missed is based on 50% of Black and 40% of Hispanics. G and T is gifted and talented.

## Take this IQ Test

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

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

## How to Find Gifted Students

- Measure their ability using tests that do not demand knowledge because
- Verbal IQ is contaminated with knowledge
  - Vocabulary, Similarities, Word Analogies, etc.
- Quantitative tests are contaminated
  - Math word problems require reading and understanding the language used as well as comprehension
- Nonverbal tests get around these problems because they measuring thinking not knowing

## 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*



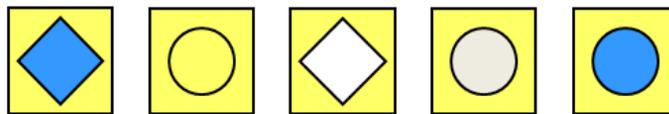
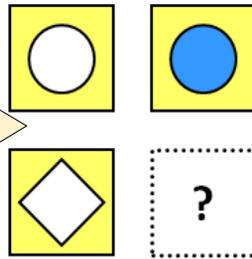

# What kind of thinking do Naglieri's nonverbal tests require?

A look at the structure of the items

Video by Scott A. Naglieri, Ph.D.  
(snaglier@gmail.com)

11

This type of question requires understanding the relationships among objects.



1

2

3

4

5

△

These questions require the same thinking!

Girl is woman as boy is to \_\_\_\_\_?

2 is to 4 as 9 is to \_\_\_\_\_?

C<sup>7</sup> is to F as E<sup>7</sup> is to \_\_\_\_\_?

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Illinois School District U-46

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, ) No. 05 C 0760  
v. )  
 ) Judge Robert W. Gettleman  
BOARD OF EDUCATION FOR ILLINOIS )  
SCHOOL DISTRICT U-46, )  
 )  
Defendant. )

◆




## Illinois School District U-46

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

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






## Judge Gettleman's Decision

The Court's decision renewed the *Brown v. Board of Education* (1954) principle that 'separate is inherently unequal'.

... The court finds the District's method of identifying gifted Minority Students was flawed and resulted in an obvious disparate impact on those students by separating them from their gifted White peers.... By singling out most[ly] all Hispanic students for the segregated SET/SWAS program, the District deprived these children of that educational opportunity based on their ethnicity (p. 27).

Slide by Jack A. Nagler, Ph.D.  
j.nagler@gmail.com




## Judge Gettleman's Decision

Judge Gettleman 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).

Written by Lisa A. Wagner, Ph.D.  
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25

## Testing the NNAT2

- Economists David Card of the University of California, Berkeley, and Laura Giuliano of the University of Miami studied the effects of using NNAT2 for GT identification

### Universal screening increases the representation of low-income and minority students in gifted education

David Card<sup>a</sup> and Laura Giuliano<sup>b</sup>

<sup>a</sup>Center for Labor Economics, Department of Economics, University of California, Berkeley, CA 94720-3880; and <sup>b</sup>Department of Economics, University of Miami, Coral Gables, FL 33124

Edited by Greg J. Duncan, University of California, Irvine, CA, and approved October 12, 2016 (received for review March 27, 2016)

Low-income and minority students are substantially underrepresented in gifted education programs. The disparities persist despite efforts by many states and school districts to broaden participation through changes in their eligibility criteria. One explanation for the persistent gap is that standard processes for identifying gifted students, which are based largely on the referrals of parents and teachers, tend to miss qualified students from underrepresented groups. We study this hypothesis using the experiences of a large urban school district following the introduction of a universal screening program for second graders. Without any changes in the standards for gifted eligibility, the screening program led to large increases in the fractions of economically disadvantaged and minority students placed in gifted programs. Comparisons of the newly identified gifted students with those who would have been placed in the absence of screening show that Blacks and Hispanics, free/reduced price lunch participants, English language learners, and girls were all systematically "underreferred" in the traditional parent/teacher referral system. Our findings suggest that parents and teachers often fail to recognize the potential of poor and minority students and those with limited English proficiency.

gifted identification | universal screening | underrepresentation

Low-income and minority students are substantially underrepresented in gifted and talented education programs in the United States (1, 2). In 2012, 7.6% of White K–12 students participated in gifted and talented programs nationwide, compared with only 3.6% of Blacks, 4.6% of Hispanics, and 1.8% of English learners (ocrdata.ed.gov/StateNationalEstimates/2012-13-2013-14-2014-15-2015-16-2016-17-2017-18-2018-19-2019-20). The underrepresentation of low-income and minority students in gifted education programs is a persistent problem that has been documented in numerous studies (3–6). One explanation for this gap is that standard processes for identifying gifted students, which are based largely on the referrals of parents and teachers, tend to miss qualified students from underrepresented groups (7). We study this hypothesis using the experiences of a large urban school district following the introduction of a universal screening program for second graders. Without any changes in the standards for gifted eligibility, the screening program led to large increases in the fractions of economically disadvantaged and minority students placed in gifted programs. Comparisons of the newly identified gifted students with those who would have been placed in the absence of screening show that Blacks and Hispanics, free/reduced price lunch participants, English language learners, and girls were all systematically "underreferred" in the traditional parent/teacher referral system. Our findings suggest that parents and teachers often fail to recognize the potential of poor and minority students and those with limited English proficiency.

program, all second graders completed the Naglieri Non-Verbal Ability Test (NNAT), a nonverbal test intended to assess cognitive ability independent of linguistic and cultural background (8). The NNAT takes less than an hour to complete and was administered by teachers in the classroom. The NNAT scores were used to construct a nationally normed index with a mean of 100 and SD of 15, similar to a standard IQ test. All students scoring at least 130 points on the test, and ELL/FLR students scoring at least 115 points, were automatically eligible to be referred for full evaluation and regular IQ testing by District psychologists. Because students could still be nominated for testing by parents or teachers as in earlier years, the aim of the screening program was to supplement the traditional referral system and boost referral rates for underrepresented groups.

The other key features of the District's gifted identification process remained unchanged. Referred students were placed in a queue for a full IQ test given by a District psychologist, although parents could bypass the queue by paying to have their child tested privately. Students with IQs above the relevant threshold were eligible for gifted status, with the final determination based on parent and teacher inputs and scores on a checklist of "gifted indicators." (Supporting Information provides more details on the District's gifted screening and identification procedures. See ref. 9 for additional information on the District's gifted program.) Importantly, the IQ thresholds and other requirements for gifted eligibility were unchanged. Any increase in the number of students identified as gifted following the introduction of the program can thus be attributed to the screening effort, and not to a relaxation of the standards for gifted status. While the screening program may have raised parent and teacher awareness about the gifted program, the return of gifted rates to their prescreening levels after the program was suspended in

27



## Testing the NNAT2

- In Broward County (one of the largest and most diverse student populations in the country) more than half of its students are black or Hispanic, and a similar proportion are from low-income families. Yet, just 28% of third graders who were identified as gifted were black or Hispanic.
- Under that system, the district had relied on teachers and parents to make referrals.



Slide by Jack A. Nagler, Ph.D.  
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28 



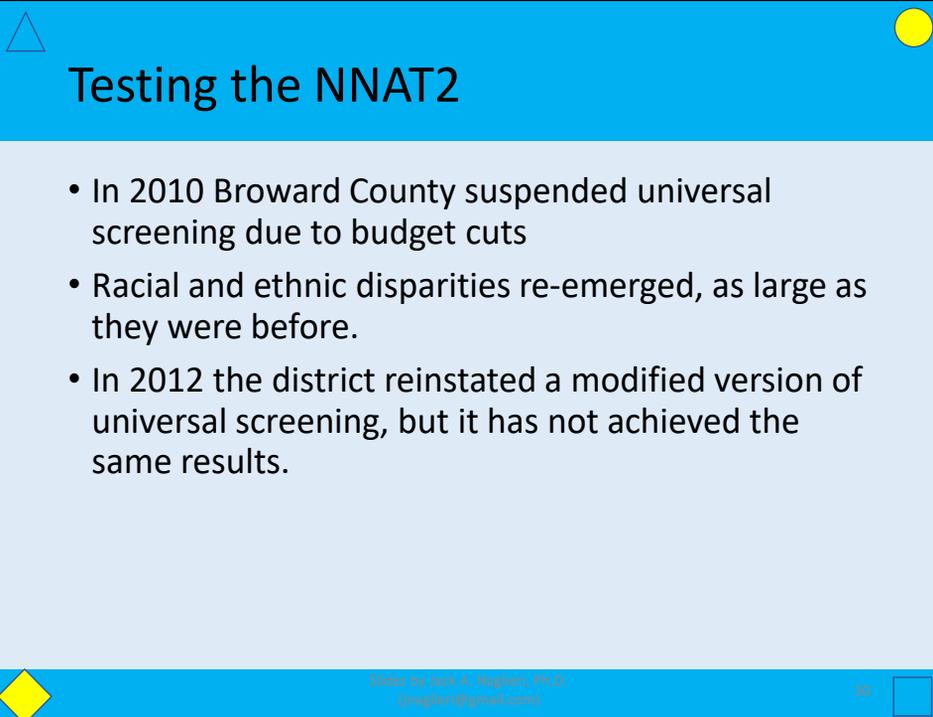
## Testing the NNAT2

- In 2005, in an effort to reduce that disparity, Broward County introduced a universal screening program, requiring that all second graders take a short nonverbal test (NNAT2)...
- The number of Hispanic children identified went from 2 to 6 %
- The black children went from 1 to 3 % percent from 1 percent.



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29 



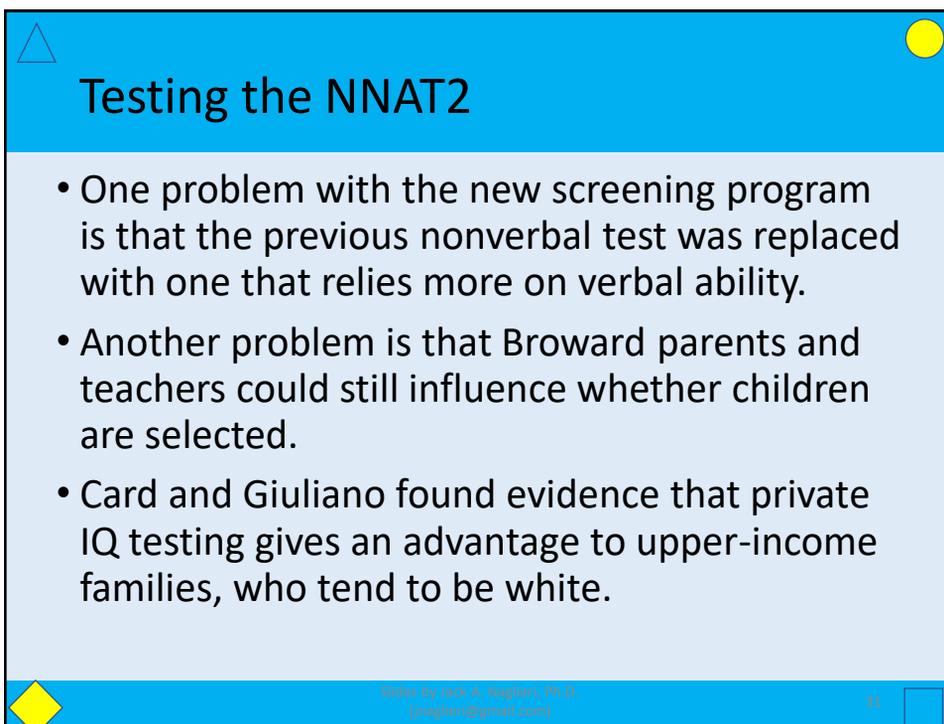
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## Testing the NNAT2

- In 2010 Broward County suspended universal screening due to budget cuts
- Racial and ethnic disparities re-emerged, as large as they were before.
- In 2012 the district reinstated a modified version of universal screening, but it has not achieved the same results.

Slide by Jack A. Naglieri, Ph.D.  
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10



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## Testing the NNAT2

- One problem with the new screening program is that the previous nonverbal test was replaced with one that relies more on verbal ability.
- Another problem is that Broward parents and teachers could still influence whether children are selected.
- Card and Giuliano found evidence that private IQ testing gives an advantage to upper-income families, who tend to be white.

Slide by Jack A. Naglieri, Ph.D.  
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11

## Card & Giuliano (2017)

[www.pnas.org/cgi/doi/10.1073/pnas.1605043113](http://www.pnas.org/cgi/doi/10.1073/pnas.1605043113)

- Effects of giving NNAT to all students in years 2006 and 2007 (N = 79,650)

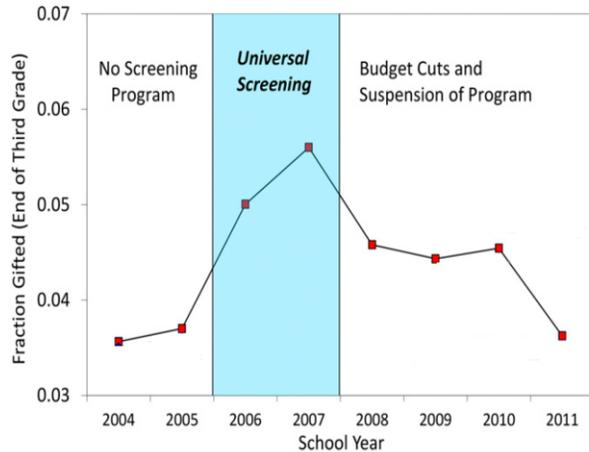


Fig. 1. Fraction gifted by end of third grade,

## Universal screening increases the representation of low-income and minority students in gifted education

David Card<sup>a,1</sup> and Laura Giuliano<sup>b,1</sup>

<sup>a</sup>Center for Labor Economics, Department of Economics, University of California, Berkeley, CA 94720-3880; and <sup>b</sup>Department of Economics, University of Miami, Coral Gables, FL 33124

Our analysis yields three main conclusions. First, the introduction of the screening program led to a large increase in the fraction of students classified as gifted. Second, the newly identified gifted students were disproportionately poor, Black, and Hispanic, and less likely to have parents whose primary language was English. They were also concentrated at schools with high shares of poor and minority students and low numbers of gifted students before the program. Thus, the experiences of the District confirm that a universal screening program can significantly broaden the diversity of students in gifted programs. Third, the distribution of IQ scores for the newly identified students was similar to the distribution for those identified under the old system, particularly among students who qualified under the Plan B eligibility standard. The newly identified group included many students with IQs well above the minimum eligibility threshold, implying that even high-ability students from disadvantaged groups were being overlooked under the traditional referral system.

## Testing the NNAT2

- Broward County natural experiment shows that there is a fairer way to identify gifted children –
  - Universal screening,
  - a standardized process that does not rely on teachers and parents,
  - You can identify smart disadvantaged children who would otherwise go undiscovered,
  - Providing challenging classes for these children can help them to reach their full potential.

Written by Jack A. Naglieri, Ph.D.  
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14

## Does the NNAT work for all groups?

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

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1040-3596/00/\$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 ex-

as 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, & Johnson, 1990), the Matrix Analogies Test—Short Form (MAT-SF; Naglieri, 1985b) and Expanded Form (MAT-EF; Naglieri, 1985a), the Naglieri

## 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	103.9	0.3

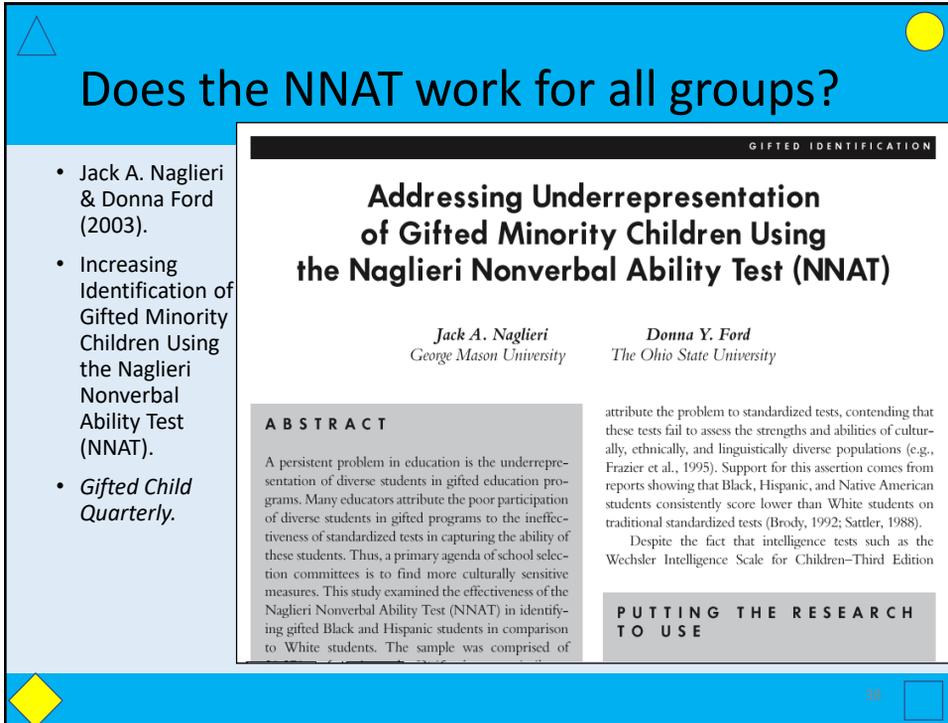
## Race Differences by Test (Naglieri 2015)

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.

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

Test	Difference
<i>Traditional</i>	
SB-IV (matched)	12.6
WISC-IV (normative sample)	11.5
WJ-III (normative sample)	10.9
WISC-IV (matched)	10.0
<i>Second generation</i>	
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

**NNAT difference is 4.2**



**Does the NNAT work for all groups?**

- Jack A. Naglieri & Donna Ford (2003).
- Increasing Identification of Gifted Minority Children Using the Naglieri Nonverbal Ability Test (NNAT).
- *Gifted Child Quarterly*.

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*

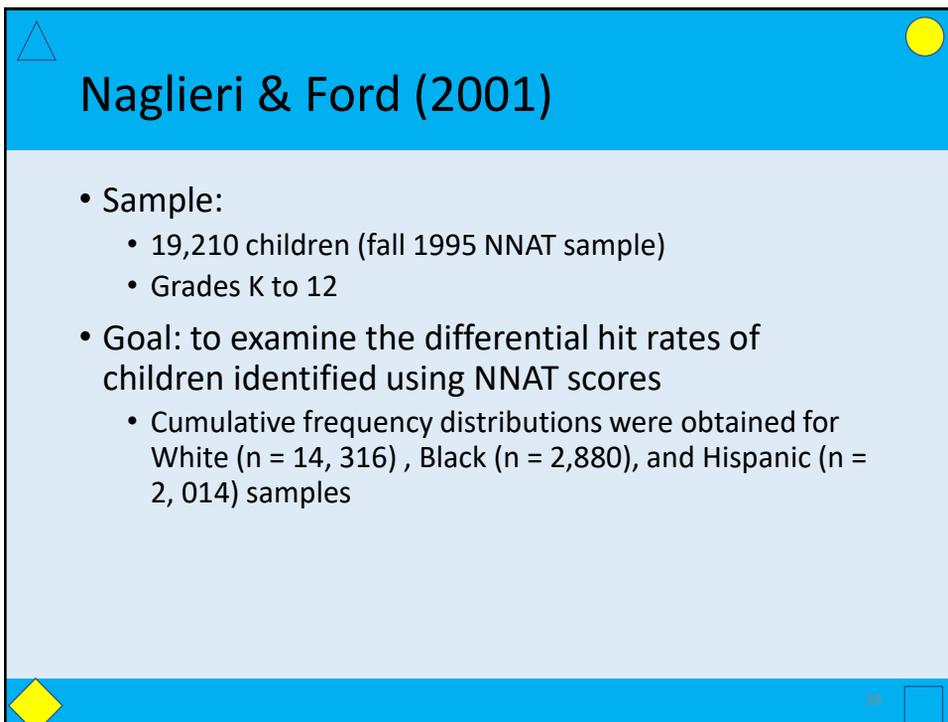
**ABSTRACT**

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**



**Naglieri & Ford (2001)**

- Sample:
  - 19,210 children (fall 1995 NNAT sample)
  - Grades K to 12
- Goal: to examine the differential hit rates of children identified using NNAT scores
  - Cumulative frequency distributions were obtained for White (n = 14, 316) , Black (n = 2,880), and Hispanic (n = 2, 014) samples

**Table 2**  
**NNAT Scores**

	White		Black		Hispanic		Expected
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
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 <i>n</i>	14,141		2,863		1,991		

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

relations to achievement provided by Naglieri and Ronning (2000a, 2000b) to include an important examination of the differential rates of identification for diverse groups. These results are similar to previous studies of the NNAT and its earlier version, the MAT (Naglieri, 1985a, 1985b), which demonstrated that the instrument yielded small differences between majority and minority groups (Naglieri, 1985b; Naglieri & Ronning, 2000a). More importantly, however,

recently, provide access to gifted education services. The primary difference between the NNAT and other group ability tests is that the latter typically include verbal, quantitative, as well as nonverbal tests. Some researchers have argued that a general ability test with verbal and quantitative items is limited in utility because it demands English language skills and knowledge directly taught in school (Naglieri, 1999; Naglieri & Prewett, 1990). This study

## Does the NNAT work for ELL students?

Naglieri, Booth, & Winsler (2004).  
Comparison of Hispanic Children with and without Limited English Proficiency on the NNAT.  
*Psychological Assessment*.

Psychological Assessment  
2004, Vol. 16, No. 1, 12-14

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### BRIEF REPORTS

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

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Ashley L. Booth  
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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  $d$

# Hispanic Children

Table 2  
Means, Standard Deviations, and Sample Sizes for Hispanic LEP and Non-LEP Matched Samples on Ability and Achievement Measures

Measure	LEP			Non-LEP			d ratio
	M	SD	n	M	SD	n	
NNAT	98.0	19.8	148	96.7	17.6	148	0.1
Total Reading	91.7	14.7	148	95.4	12.8	144	0.3
Vocabulary	90.1	17.0	133	94.7	13.0	143	0.3
Reading Comprehension	93.6	14.7	130	97.1	13.0	130	0.2
Listening	88.9	14.5	137	96.2	12.4	137	0.5
Total Math	98.5	15.7	148	96.7	14.0	144	0.1
Problem Solving	97.3	14.8	113	97.2	13.6	110	0.0
Procedures	102.3	18.2	113	100.4	17.6	113	0.1

Note. LEP = limited English proficiency.  
\* p < .05. \*\* p < .01.

Slides by Jack A. Naglieri, Ph.D., Professor of Psychology, George Mason University, Fairfax, VA 22030. naglieri@gmu.edu

# 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			COGAT VQN		
Ethnic Group	Frequency	Percent	Ethnic Group	Frequency	Percent
White	1492	80.6%	White	1333	89.0%
Black	87	4.7%	Black	40	2.7%
Hispanic	272	14.7%	Hispanic	125	8.3%
Total	1851		Total	1498	
% Increase for Blacks -->			54.0%		
% Increase for Hispanics -->			54.0%		

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44

## Does the NNAT work for males & females?



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Intelligence 34 (2006) 253–260



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

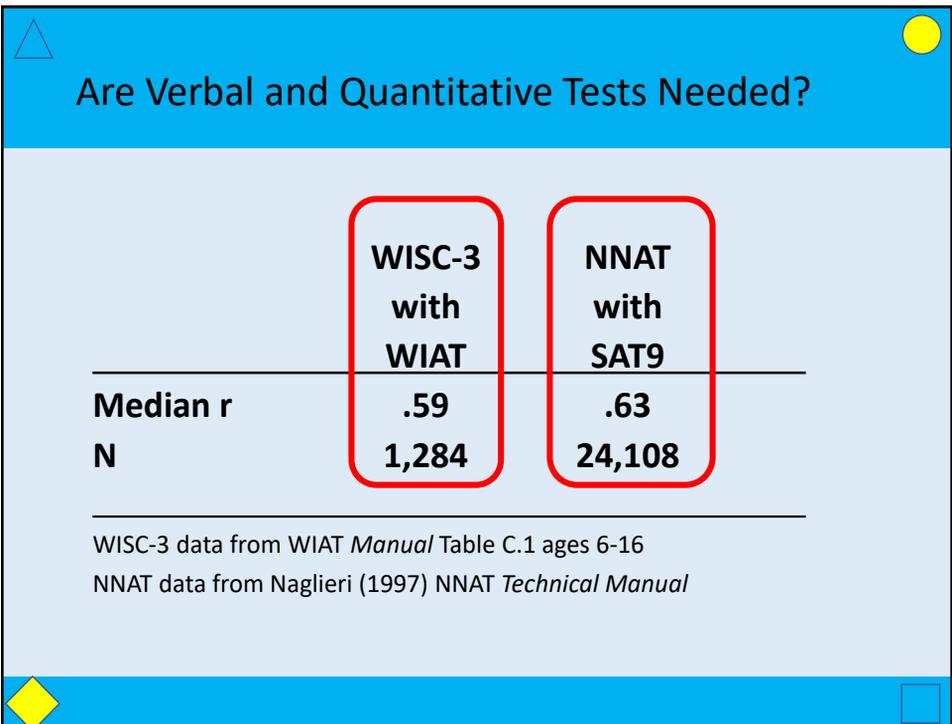
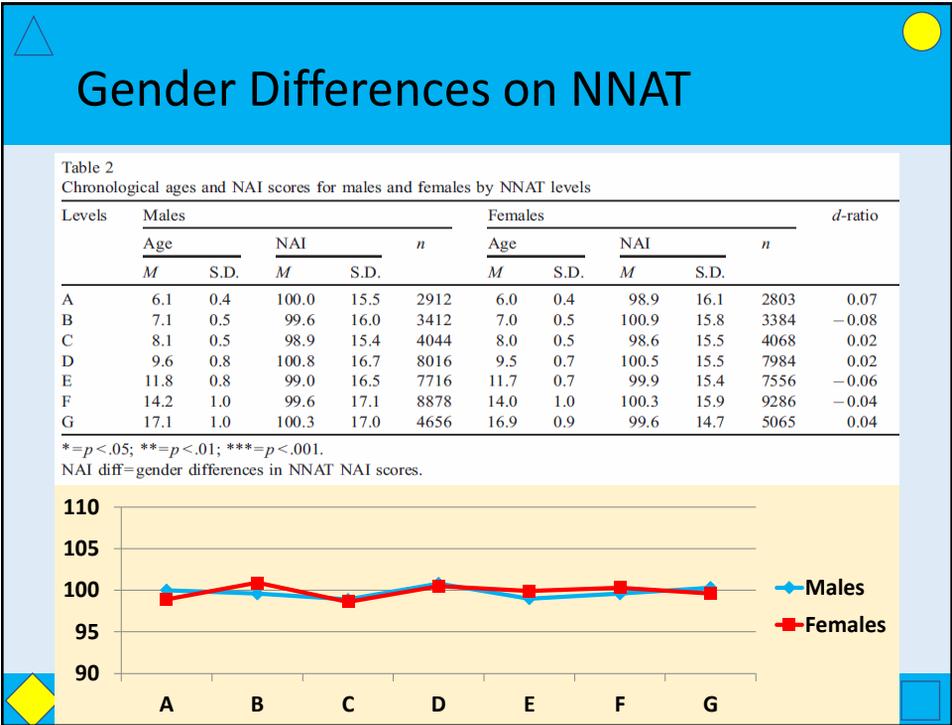
Johannes Rojahn\*, Jack A. Naglieri

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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)

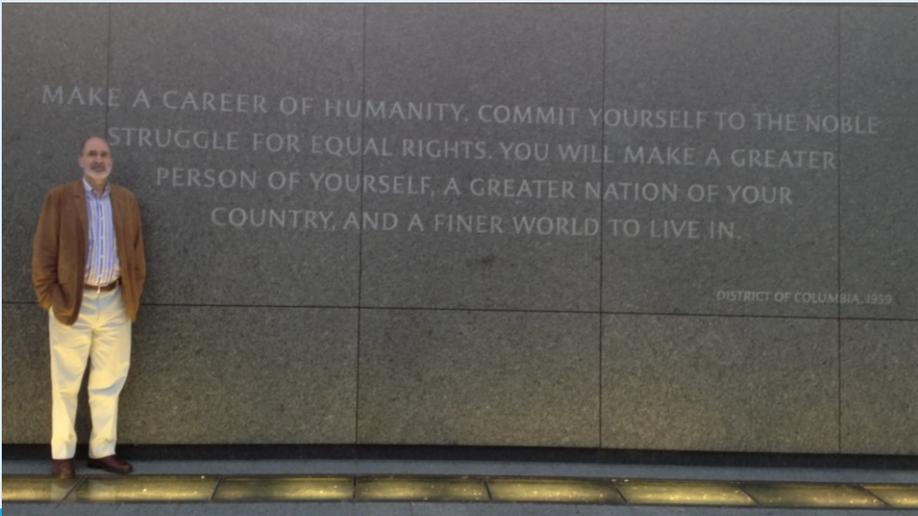


## Conclusions

- NNAT3 provides an effective way to increase the participation of diverse groups IF it is used as a universal screening tool and outreach is provided
- We *can* identify the many smart students in our country from diverse backgrounds.
- This social justice issue can be addressed

Slide by Jill A. Nagler, Ph.D.  
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## Gifted Identification is a Social Justice Issue



MAKE A CAREER OF HUMANITY. COMMIT YOURSELF TO THE NOBLE STRUGGLE FOR EQUAL RIGHTS. YOU WILL MAKE A GREATER PERSON OF YOURSELF, A GREATER NATION OF YOUR COUNTRY, AND A FINER WORLD TO LIVE IN.

DISTRICT OF COLUMBIA, 1959

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