Current Research on Advanced Learners from Underrepresented Student Populations

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Handout: https://tinyurl.com/yco9omzm

Representation Index

AKA Risk Ratio

RI = %Gifted / %Total

%Gifted = % of the identified gifted population from a given subgroup

%Total = % of the subgroup in the larger student population

Representation Index

RI = %Gifted / %Total

- Your district is 14% African American
- Your GT population is 7% African American

RI = .07/ /14 = .50

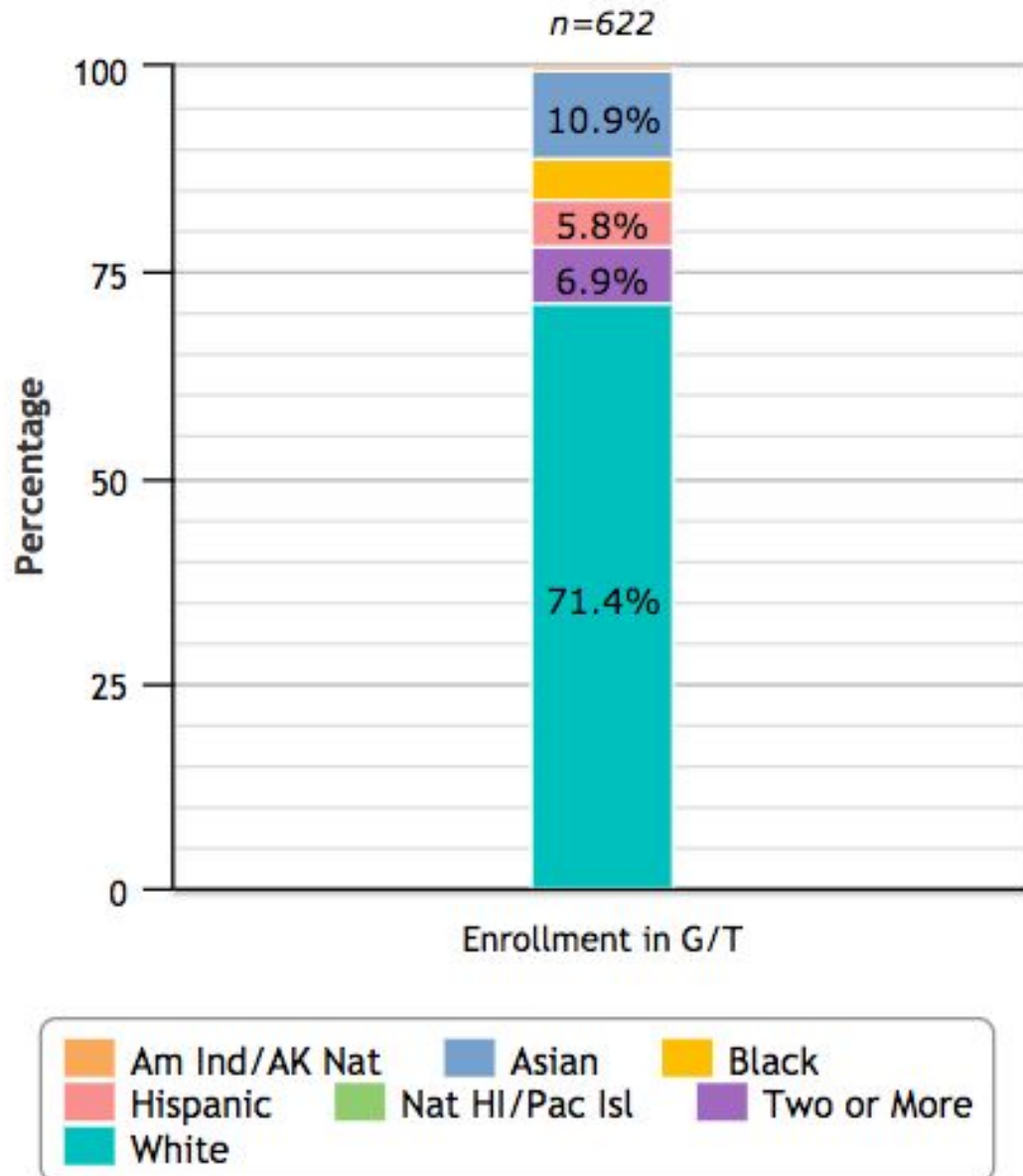African American students are half as represented in gifted as they are overall

Office of Civil Rights
Data Gold Mine

- Biannually OCR conducts a survey related to access and opportunity of students in grades PK-12

- Questions include:

  - Participation by race, ethnicity, sex, IDEA eligibility, and LEP designation:

    - GT participation

    - Physics enrollment

    - Calculus enrollment

Office of Civil Rights
Data Gold Mine

- Since 2009, this data collection has been from ALL school districts
  - Charters, prisons, alternative schools
  - Any that receive Federal funding
- 2015 – 2016 survey included a 99.5% response rate from US districts

- Part of Educational Equity Report

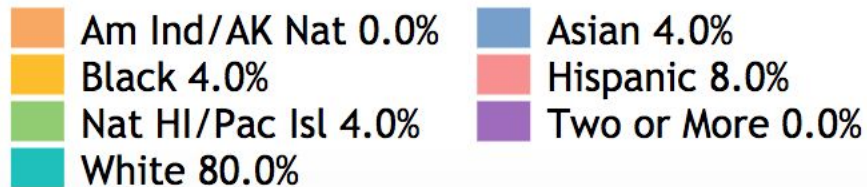**What is the student enrollment in G/T, by race/ethnicity?**

n=622

Percentage (y-axis)

- 10.9%
- 5.8%
- 6.9%
- 71.4%

Enrollment in G/T

Legend:
- Am Ind/AK Nat
- Asian
- Black
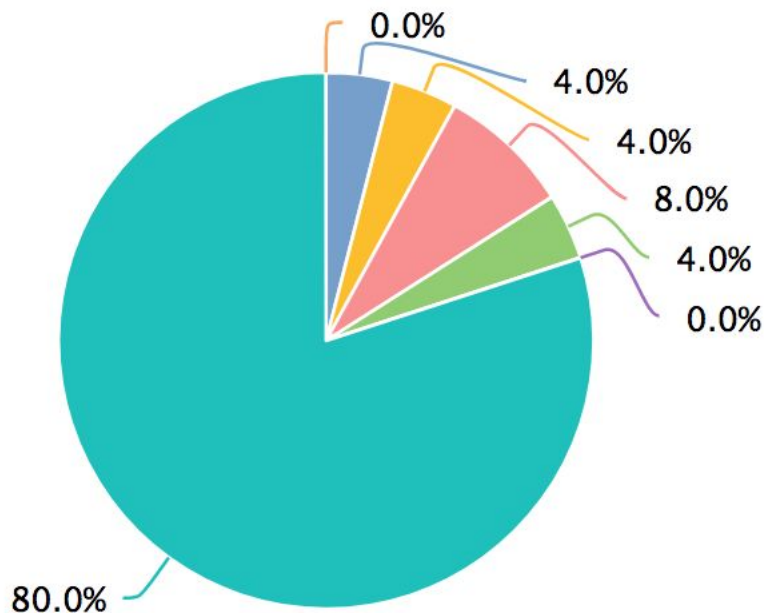- Hispanic
- Nat HI/Pac Isl
- Two or More
- White

District-level racial / ethnic representation data from US Office of Civil Rights

Computing RIs

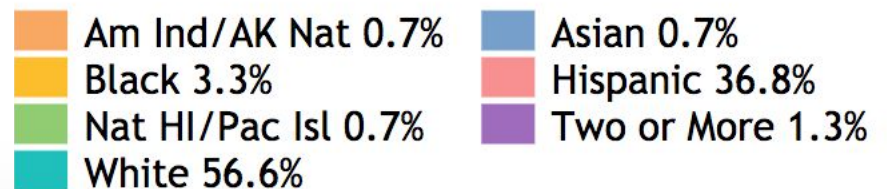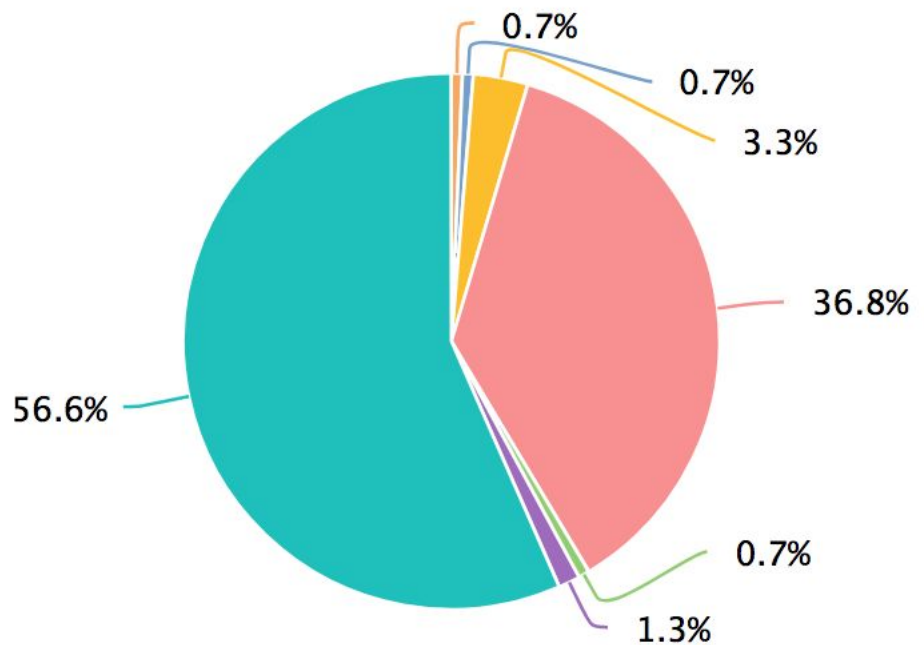**Gifted & Talented Enrollment**
n=50

School Enrollment
n=304

Gifted & Talented Enrollment:
- 0.0%
- 4.0%
- 4.0%
- 8.0%
- 4.0%
- 0.0%
- 80.0%

Legend (Gifted & Talented):
- Am Ind/AK Nat 0.0%
- Asian 4.0%
- Black 4.0%
- Hispanic 8.0%
- Nat HI/Pac Isl 4.0%
- Two or More 0.0%
- White 80.0%

School Enrollment:
- 0.7%
- 0.7%
- 3.3%
- 36.8%
- 0.7%
- 1.3%
- 56.6%

Legend (School Enrollment):
- Am Ind/AK Nat 0.7%
- Asian 0.7%
- Black 3.3%
- Hispanic 36.8%
- Nat HI/Pac Isl 0.7%
- Two or More 1.3%
- White 56.6%
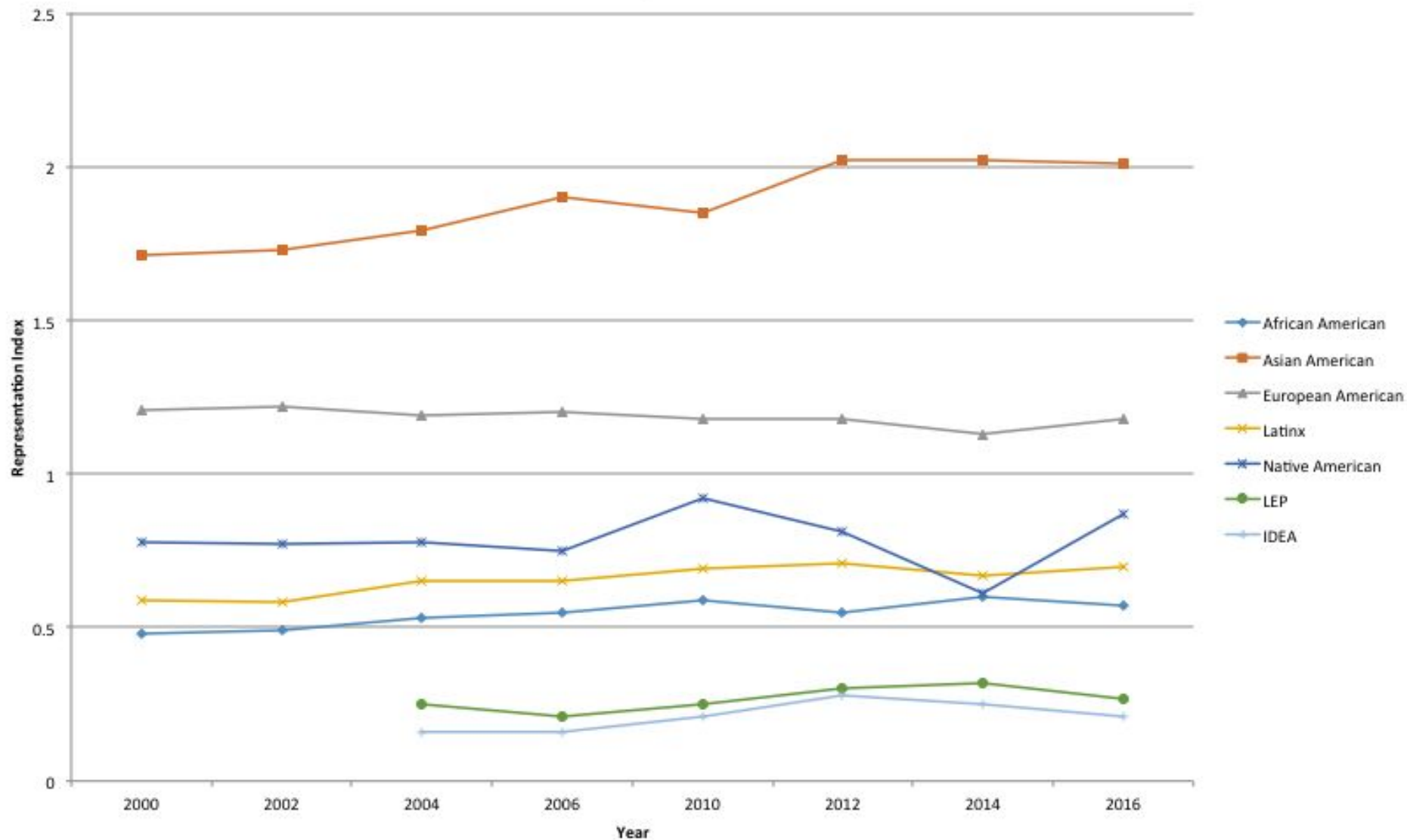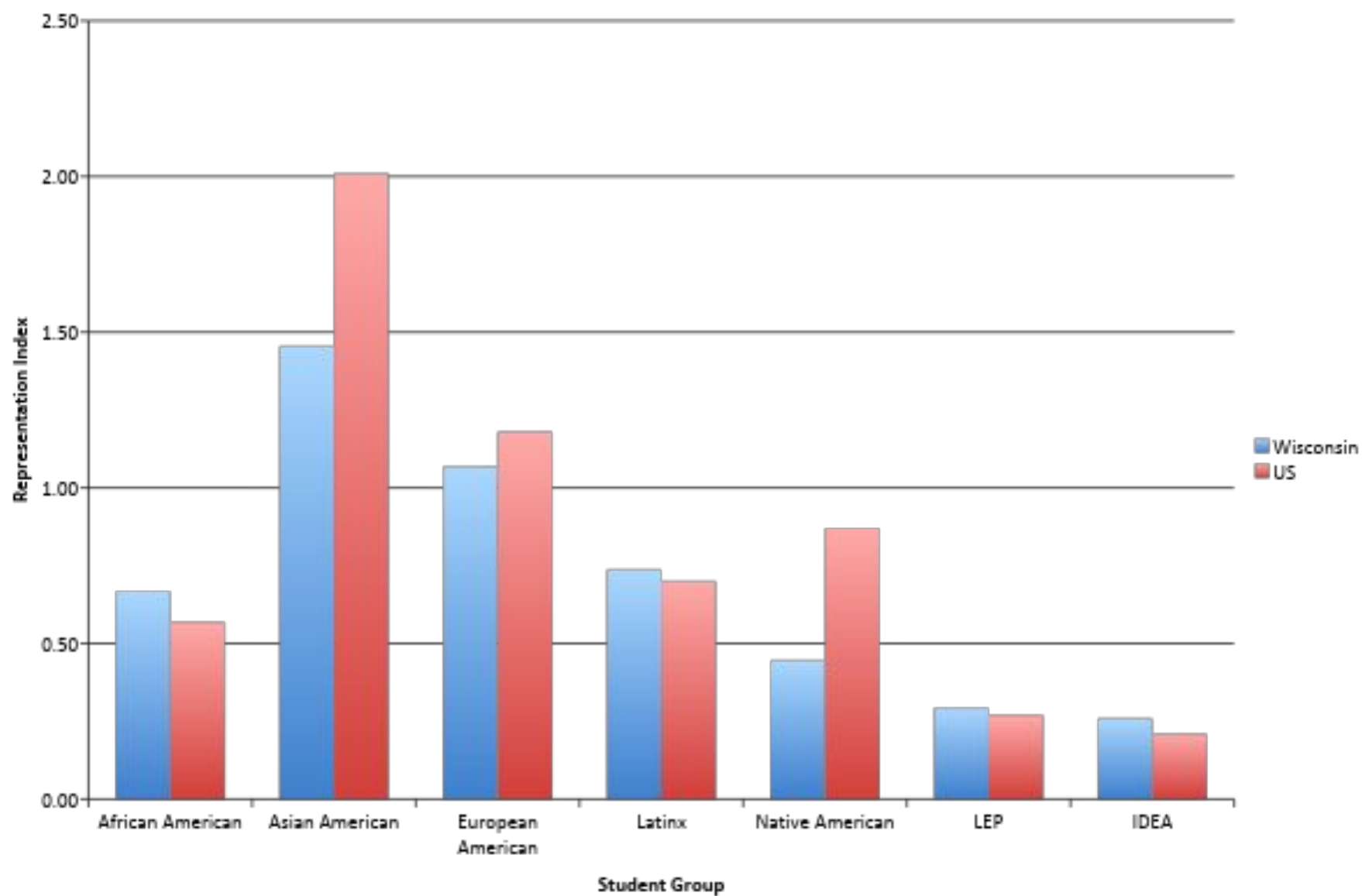
Gifted and Talented Representation Rates: 2000 - 2016

Gifted Education Representation Rates: 2016

Why?

- Because of unequal opportunity to learn (OTL), fewer students from traditionally underrepresented groups are ready for advanced opportunities (lost potential)
    - Peters & Engerrand, 2016, Grissom & Redding, 2016
    - Includes systematic / institutional barriers as well as outright discrimination

- When they are ready for them, they aren't identified
    - Grissom & Redding, 2016; Hamilton et al., 2018; Siegle et al., 2018

- When they do need them, their schools don't offer them
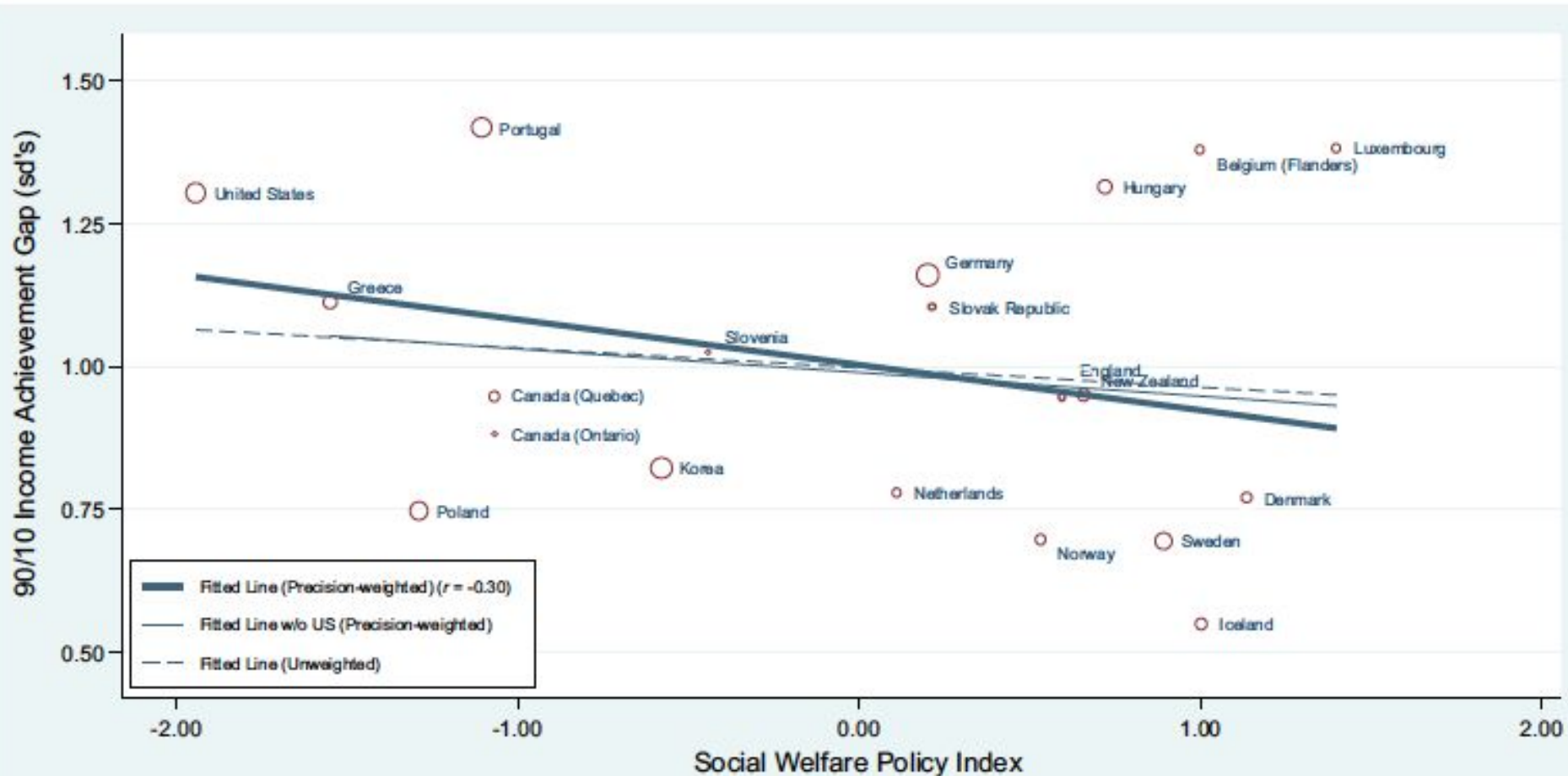   - "Having them" might be less of an issue than was thought

Cause #1:
Unequal access to educational opportunities that contribute to "talent" / high potential / high achievement

In the US, poverty is strongly associated with achievement disparities

Chmielewski & Reardon, 2016
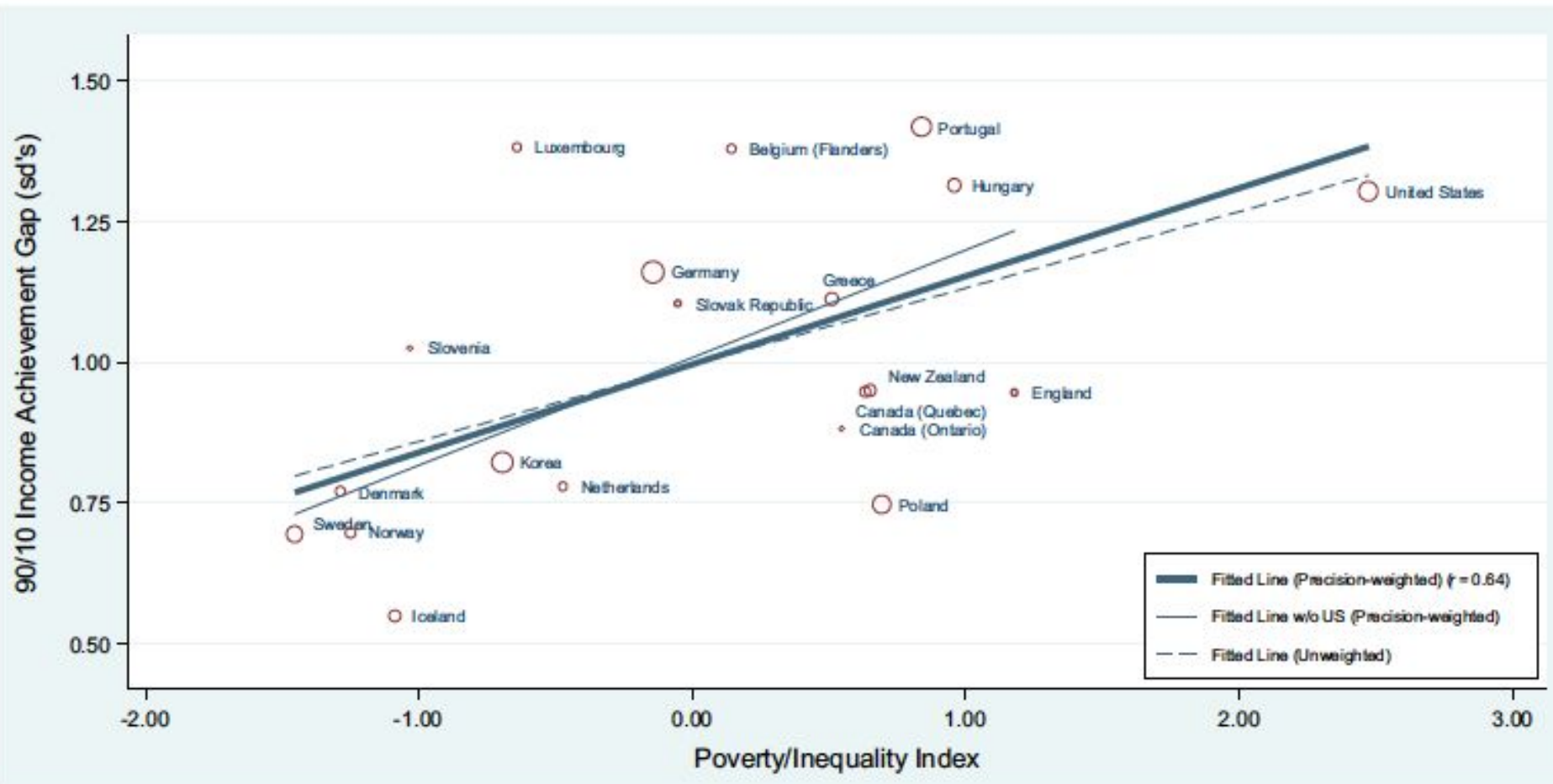
In the US, if you can't afford opportunity, you don't get it

Chmielewski & Reardon, 2016

- If you take gifted / advanced services out of public schools, does that mean that no students will develop their talents?

- No! Because families will just seek out-of-school opportunities for their children….
  - If they can afford them
  - If they have the time to seek them out
  - If they believe in them
  - If they feel welcome in those opportunities

- Eliminating advanced opportunities in public schools hurts underrepresented kids the most.

Cause #1: Unequal access to talent development opportunities

Solution #1: Backfill these opportunities – "gifted education" boot camp

Frontloading

- Preparing students so that they are ready to be identified for and take advantage of advanced opportunities down the road

Frontloading

- Martá
- 7th grade in WI
- Math score of 526

- Martá attends Harrison Middle School.
- The advanced math program involves compacting pre-Algebra and Algebra into one year.
- A score of 645 represents mastery of the pre-requisite content for success

What does frontloading look like?

A Talent for Tinkering: Developing Talents in Children From Low-Income Households Through Engineering Curriculum

Ann Robinson[1], Jill L. Adelson[2], Kristy A. Kidd[1],
and Christine M. Cunningham[3]

Abstract

Guided by the theoretical framework of curriculum as a platform for talent development, this quasi-experimental field study investigated an intervention focused on engineering curriculum and curriculum based on a biography of a scientist through a comparative design implemented in low-income schools. Student outcome measures included science content achievement, engineering knowledge, and engineering engagement. The sample comprised 1,387 Grade 1 students across 62 classrooms. Multilevel modeling was used separately for each of the three student outcome measures. The intervention resulted in an effect size of 0.28 on an out-of-level science content assessment and effect size of 0.66 for the engineering knowledge measure. Students in the intervention group reported a high level of engineering engagement. General education teachers were trained to implement the curricula through a summer institute and received coaching throughout the subsequent academic year. Evidence suggests the intervention functioned as a talent-spotting tool as teachers reported they would nominate a substantial portion of low-income and culturally diverse students for subsequent gifted and talented services. Discussion focused on the match between the needs and preferences of students from low-income households for hands-on design experiences and the curricular affordances in the engineering domain as a talent development pathway for young, poor children.

What does frontloading look like?

Minority Achievement Gaps in STEM: Findings of a Longitudinal Study of Project Excite

Paula Olszewski-Kubilius[1], Saiying Steenbergen-Hu[1], Dana Thomson[2], and Rhoda Rosen[1]

Abstract

This longitudinal study examined the outcomes of Project Excite on reducing minority students' achievement gaps in STEM over 14 years. Project Excite was designed to provide intensive supplemental enrichment and accelerated programming for high-potential, underrepresented minority students from third through eighth grades to better prepare them for advanced math and science courses in high school. This study compared the performance of Project Excite participants with that of students from their local school districts and the state on the Illinois Standards Achievement Test, the Explore test, the Measures of Academic Progress, and on rates of placement in above-grade-level math courses in ninth grade. Project Excite participants consistently outperformed their Black, Latino, and low-income peers, and they came close to the performance levels of White, Asian, and non-low-income students. They were more likely to be placed in above-grade-level math courses than their minority peers in ninth grade.

What does frontloading look like?

Improving AP Enrollment and Performance

Providing more students access to AP and helping to prepare students to succeed in AP who otherwise would not have the opportunity to take an AP course.

→ SpringBoard saw greater increases in AP and PSAT/NMSQT participation, growing 4%–8% more, with no loss in performance. In addition, black and Hispanic students in these SpringBoard schools saw greater increases in AP participation and performance, growing up to 7 percentage points more than similar students in comparable non-SpringBoard schools.[1]

→ SpringBoard schools showed **statistically significant gains in access to AP**, their AP Literature and Language participation rate increasing 4.5 percentage points more than that of comparable non-SpringBoard schools, with **no loss of performance.**[2]

→ Hispanic Students in SpringBoard schools showed **statistically significant increases in access to AP**, their AP Literature and Language participation rate increasing 4.7 percentage points more than that of comparable non-SpringBoard schools, with **no loss of performance.**[3]

Increased Access to AP

Making AP success accessible to traditionally underserved populations.

→ Florida High schools that purchased SpringBoard for three to five years had **substantially more students enrolled in AP courses.**[4]

→ Florida High schools that purchased SpringBoard had a **109% and 52% gain in the number of black and Hispanic students**, respectively, enrolled in AP courses.[5]

→ **AP English** exam takers: **65.9% increase in SpringBoard schools vs. 1.4% increase in non-SpringBoard schools**, with most of the increase shown for black and Hispanic students.[6]

→ **AP Math** exam takers: **14.0% increase in SpringBoard schools vs. -18.2% decrease in non-SpringBoard schools.**[7]

→ Statistically significant increase in AP Exam takers overall (48% more), AP English Literature Exam takers (77% more), AP English Language Exam takers (54% more), with no differences in performance at the aggregate.[8]

ACT Alignment

FY College
Success

What it takes to
be ID'd and do
well in the thing

ACT Score

Scaffolding
readiness

EXPLORE / PLAN

Scaffolding for
the pre-rec skills

Frontloading for Gifted Ed

8th grade "Gifted" Program

What it takes to be ID'd and do well in the thing

6th / 7th pre-rec skills

Scaffolding readiness

Elementary frontloading

Scaffolding for the pre-rec skills

Group and School Average <u>Achievement</u> - Math

Gaps are mostly an issue of kids entering school at different places

255
245
235
225
215
205
195

0 — Third Grade
8 — Summer
12 — Fourth Grade
20 — Summer
24 — Fifth Grade
32

— URM at High Achieving School
— URM at Average Achieving School
— URM at Low Achieving School
— Non-URM at High Achieving School
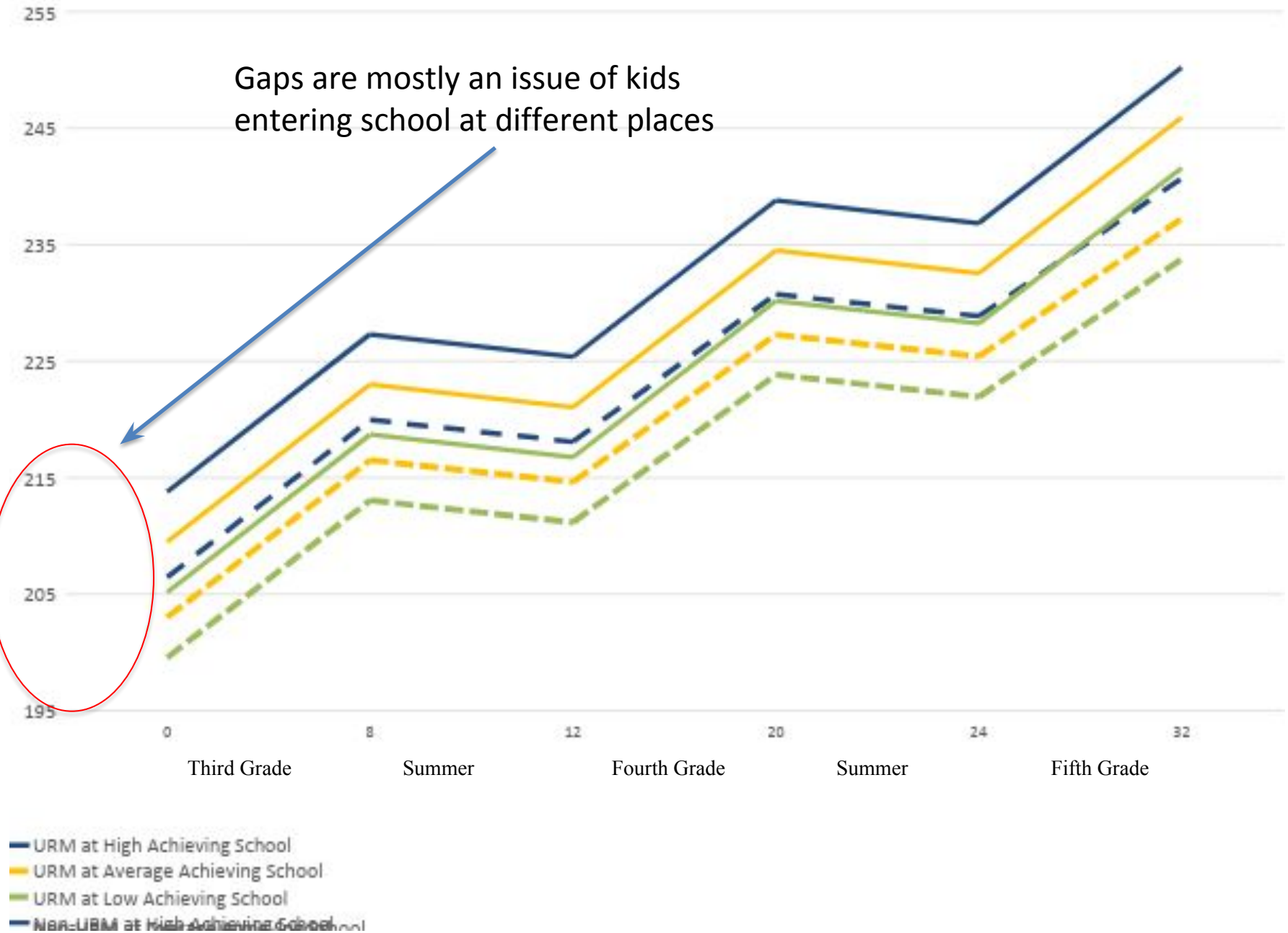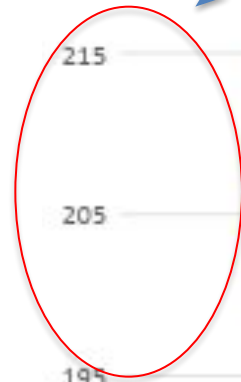
Excellence Gaps exist when kids enter school…

And persist…..
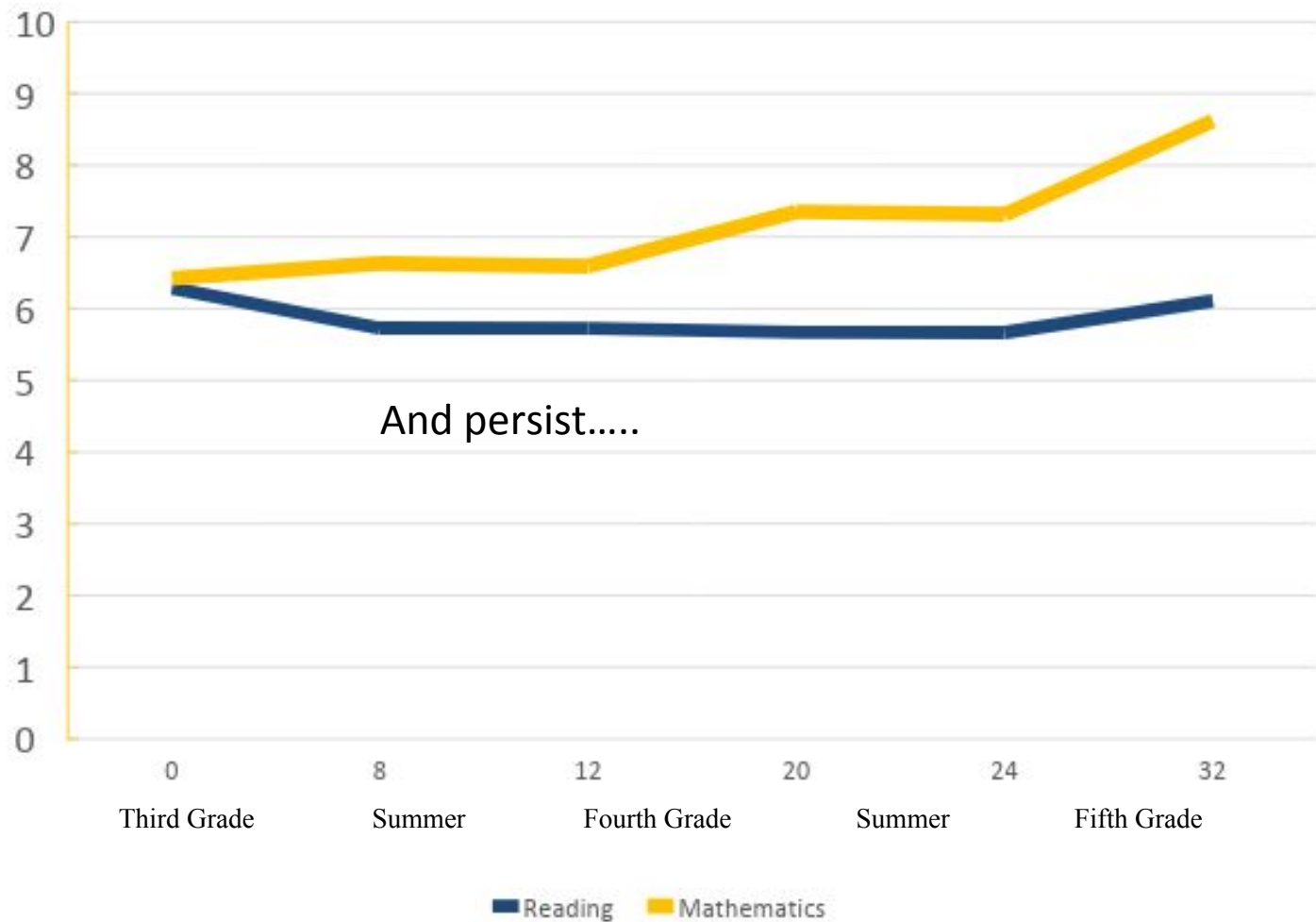
Cause #2: Even when students are qualified* they aren't identified

Under identification

- Non-universal screening as a barrier
- African American students were more likely to be ID'd if their teacher was African American
  - (6.2% probability vs. 2.1%)
    - Grissom & Redding, 2016
- Two-stage ID methods disproportionately harm underrepresented students
  - McBee, Peters, & Waterman, 2016

Cause #2: Even when students are qualified* they aren't identified

Solutions #2: Universally screen with local norms

https://goo.gl/1VKtuc

Table 8. Students Identified Under Various Norming, Cutoff, and Modifier Plans.

Demographic	District demographics (% of all students)	National norms 125+ cutoff (% of identified students)	National norms top 5% cutoff (% of identified students)	District norms (LPR) 125+ cutoff (% of identified students)	District norms (LPR) top 5% cutoff (% of identified students)	School norms top 5% cutoff (% of identified students)
All students	15,724	240	813	719	907	805
Gender						
Male	7,775 (49.4)	138 (57.5)	412 (50.7)	363 (50.5)	456 (50.3)	400 (49.7)

STOP USING NATIONAL NORMS

Demographic	District demographics (% of all students)	National norms 125+ cutoff (% of identified students)	National norms top 5% cutoff (% of identified students)	District norms (LPR) 125+ cutoff (% of identified students)	District norms (LPR) top 5% cutoff (% of identified students)	School norms top 5% cutoff (% of identified students)
Asian	526 (3.3)	76 (31.7)	172 (21.2)	152 (21.1)	180 (19.8)	70 (8.7)
Other	187 (1.2)	13 (5.4)	33 (4.1)	28 (3.9)	37 (4.1)	12 (1.5)
Free/reduced price lunch						
FRPL	12,630 (80.3)	82 (34.2)	376 (46.2)	326 (45.3)	434 (47.9)	599 (74.4)
Non-FRPL	3,094 (19.7)	158 (65.8)	437 (53.8)	393 (54.7)	473 (52.1)	206 (25.6)
English language learner						
ELL	7,197 (45.8)	77 (32.1)	325 (40.0)	287 (39.9)	366 (40.4)	420 (52.2)
Non-ELL	8,527 (54.2)	163 (67.9)	488 (60.0)	432 (60.1)	541 (59.6)	385 (47.8)
Special education						
SPED	399 (2.5)	1 (0.4)	17 (2.1)	13 (1.8)	19 (2.1)	18 (2.2)
Non-SPED	15,325 (97.5)	239 (99.6)	796 (97.9)	706 (98.2)	888 (97.9)	787 (97.8)

Table

PLEASE

PLEASE

Demographic	demo... of a...			District norms (LPR) top 5% cutoff (%		School norms top 5% cutoff (% of identified students)
All students						805
Gender						
Male	7,775 (49.4)	138 (57.5)	412 (50.7)	363 (50.5)	456 (50.3)	400 (49.7)

STOP USING NATIONAL NORMS

PLEASE

				(21.1)	180 (19.8)	70 (8.7)
				(3.9)	37 (4.1)	12 (1.5)
				(45.3)	434 (47.9)	599 (74.4)

| English language learner | | | | | | |
ELL	7,197 (45.8)	77				
Non-ELL	8,527 (54.2)	163				
Special education						
SPED	399 (2.5)	1 (0.4)	17 (2.1)	13 (1.8)	19 (2.1)	18 (2.2)
Non-SPED	15,325 (97.5)	239 (99.6)	796 (97.9)	706 (98.2)	888 (97.9)	787 (97.8)

PLEASE

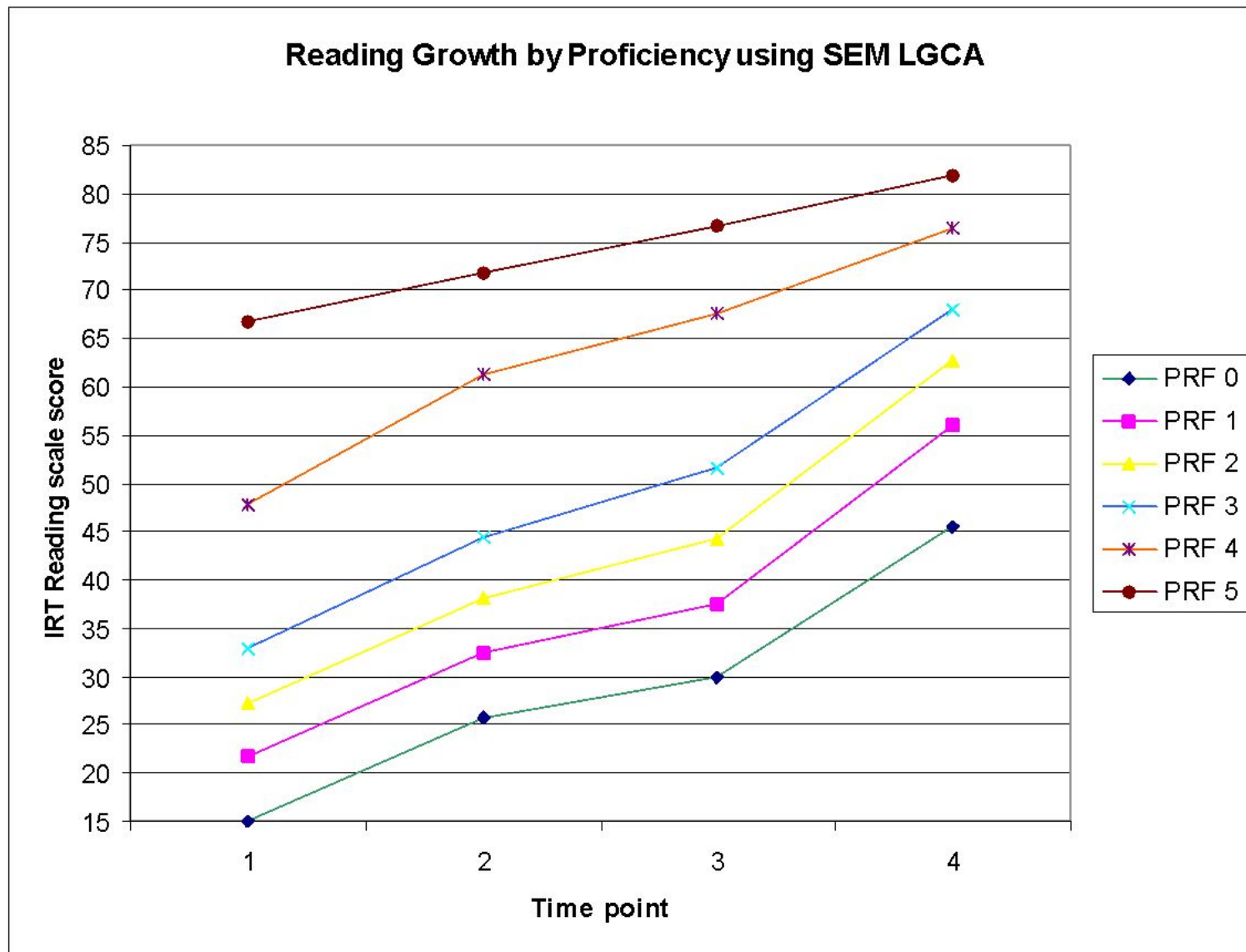# Cause #3: Lack of attention to teaching above "grade level" standards

Table 2. Percentages of Students Scoring 1 Year or More Above Grade Level.

Grade	ELA % scoring 1+ years above			Mathematics % scoring 1+ years above		
	Wisconsin	California	Texas[a]	Wisconsin	California	Texas[a]
3	34	23	20	26	19	16
4	39	29	25	26	18	29
5	44	34	30	31	22	34
6	49	34	24	36	27	32
7	47	38	30	37	28	33

[a]Texas percentages are based on the approved cut scores set for test year 2021.
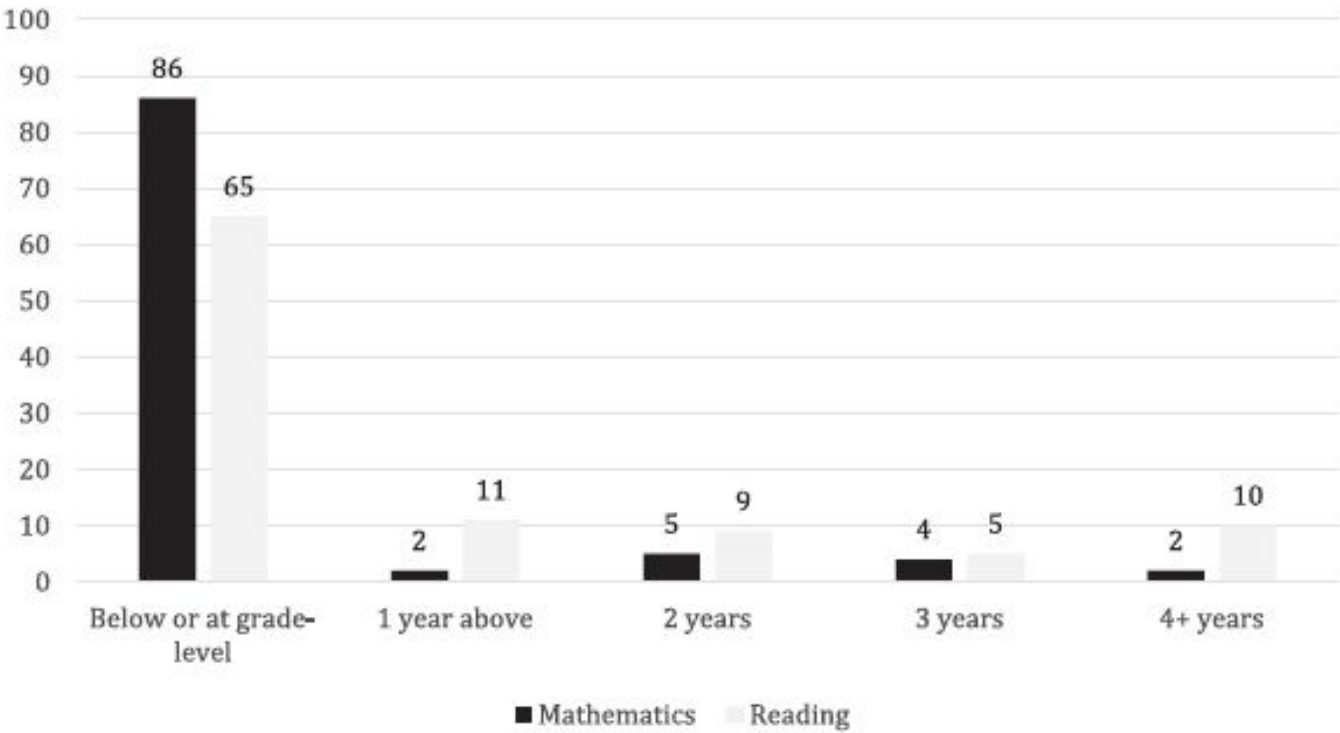
Growth trajectories by proficiency

Reading Growth by Proficiency using SEM LGCA

Cause #3: Lack of attention to teaching above "grade level"

Solutions #3: Cluster grouping and "good teaching" seen as differentiated teaching

Ms. Black

- Hamilton 7th grade English teacher:
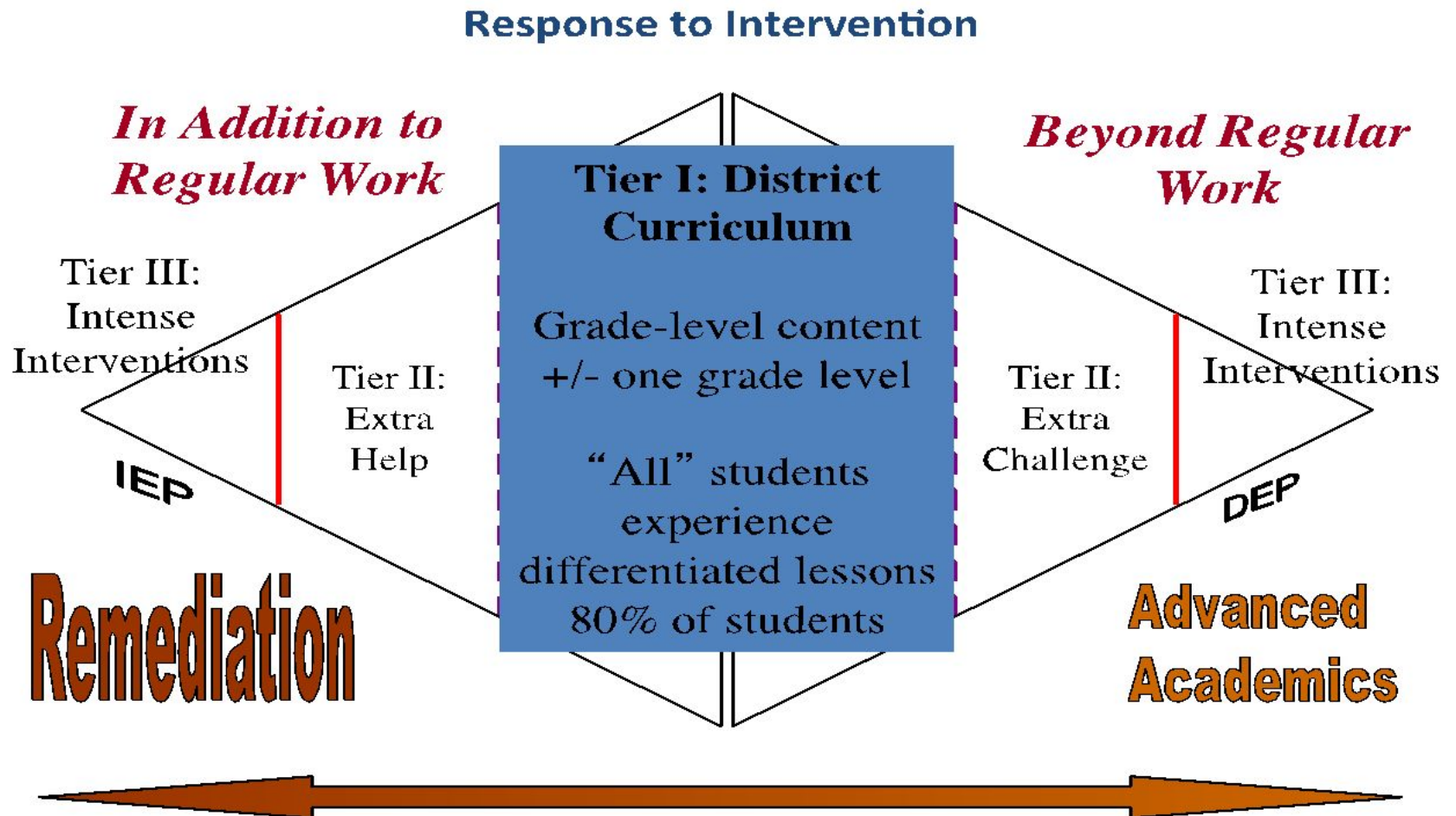
Average: 213
SD: 14

Similar to
district average

"Grade Level"
(222)

186
187
196
199
203
205
206
206
209
212
212
213
214
214
215
217
217
217
225
225
227
227
228
230
234
242

What if only 50% of students learn in Tier I?

Response to Intervention

In Addition to Regular Work

Beyond Regular Work

Tier III: Intense Interventions

Tier II: Extra Help

Tier I: District Curriculum

Grade-level content +/- one grade level

"All" students experience differentiated lessons 80% of students

Tier II: Extra Challenge

Tier III: Intense Interventions

IEP

DEP

Remediation

Advanced Academics

Classroom Configuration

	TOTAL	Classroom 1	Classroom 2	Classroom 3
HIGH ACHIEVING = >225	8	3	3	2
ABOVE AVG = 218 - 225	5	1	1	3
AVERAGE = 203 - 217	27	10	10	7
LOW-AVG = 202 - 195	15	4	5	6
LOW = <195	5	3	1	1
SPECIAL EDUC.				
TOTAL	60	21	20	19

Heterogeneous classroom grouping – small class sizes

Classroom Configuration

	TOTAL	Classroom 1	Classroom 2	Classroom 3
HIGH ACHIEVING = >225	8	8		
ABOVE AVG = 218 - 225	5		5	0
AVERAGE = 203 - 217	27	10	10	7
LOW-AVG = 202 - 195	15	3	7	5
LOW = <195	5	0	0	5
SPECIAL EDUC.				
TOTAL	60	21	22	17

Cluster grouped classes

Sample Cluster Grouping Configuration

ID Category	4th grade Clsrm 1	4th grade Clsrm 2	4th grade Clsrm 3	4th grade Total grade
High-Achieving	6	0	0	6
Above-Average	0	7	6	13
Average	10	10	10	30
Low-Average	8	0	6	14
Low	0	8	0	8
Sp. Educ.	1*	0	3**	4
Total	**25**	**25**	**25**	**75**

RtI
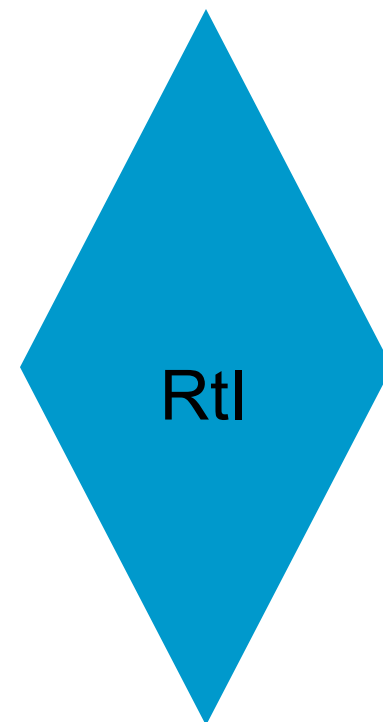
*note. This student is twice-exceptional.

**note. These students see the same teacher consultant who also helps the classroom teacher.

Sample Cluster Grouping Configuration

ID Category	3rd grade Clsrm 1	3rd grade Clsrm 2	3rd grade Clsrm 3	3rd grade Clsrm 4	3rd grade Clsrm 5	3rd grade Total grade
High-Achieving	10	10	0	0	0	20
Above-Average	0	0	7	7	7	21
Average	0	8	8	8	0	24
Low-Average	16	0	0	9	0	24
Low	0	6	10	0	10	26
Sp. Educ.	0	2*	0	2	4**	10
Total	**26**	**26**	**26**	**26**	**21**	**125**

*note. These students are Learning Disabled *and* Gifted.

**note. These students are LD and see the same teacher consultant who spends 4 half days per week working in this classroom, the teacher consultant will work in the classroom with the teacher. Her class size has been reduced.

Resources on my faculty page:
http://go.uww.edu/peterss

Identification explorer: https://goo.gl/1VKtuc

Google folder: https://goo.gl/eGVgDm