



Culturally Responsive Instruction

The Context of Mathematics

April 28, 2016

Objectives

- Establish context for necessity of culturally responsive practice
- Learn key components of educational equity
- Recognize culturally responsive/relevant practice
- Learn successfully incorporated strategies leading to student success



Region X

Equity Assistance Center

The land and water area in Region X covers 16.1 million square miles or approximately 10% of the earth's total surface including:

- 9 time zones
- 5 U.S. states
- 2 U.S. territories
- 1 commonwealth
- 2 republics
- 4 federated states



Presenters



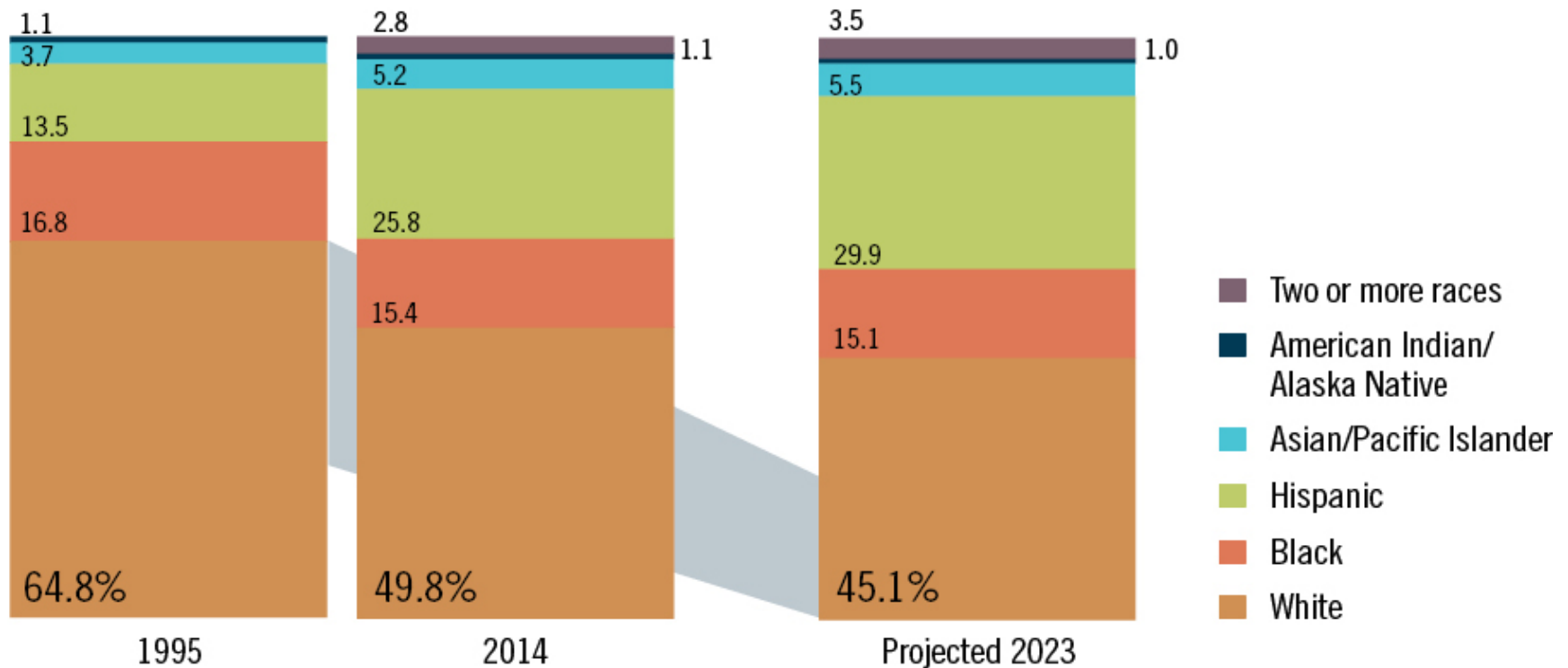
Patrice Woods
Region X EAC
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Rainier Beach High School



Changing US Student Population



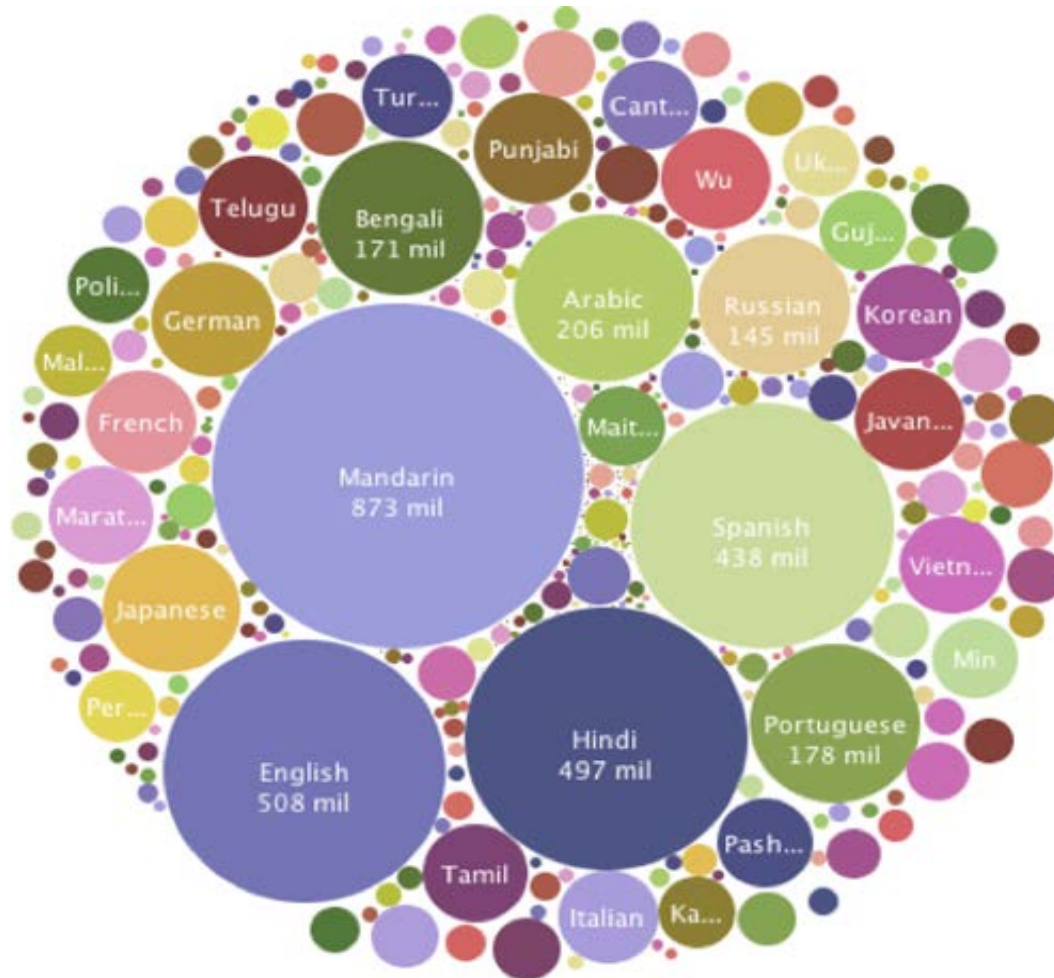
EDUCATION WEEK



Increasingly Diverse Schools

- There is a rapidly rising non-White child population (Polleck & Shabdin, 2013)
- Almost two-thirds of all American children are projected to be students of color by 2050
- In 63 of the 100 largest U.S. school districts, over half of the student population identify as students of color

Languages Spoken





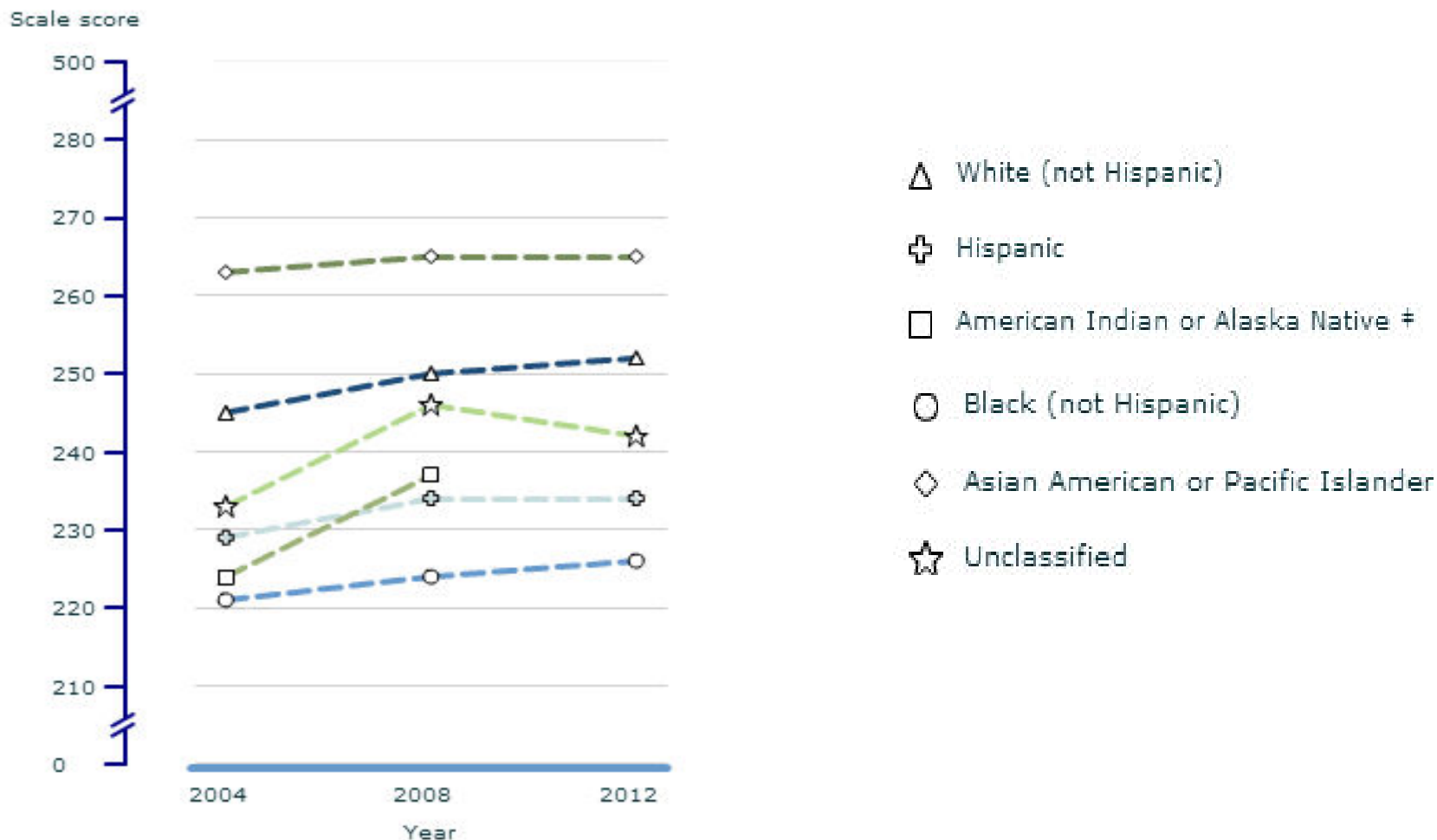
Supply and Demand

The need for culturally responsive instruction

- To positively impact student learning and close achievement gap
- Change the trajectory for student post-secondary options
- Mathematics to *become* a GATEWAY rather than the Gatekeeper

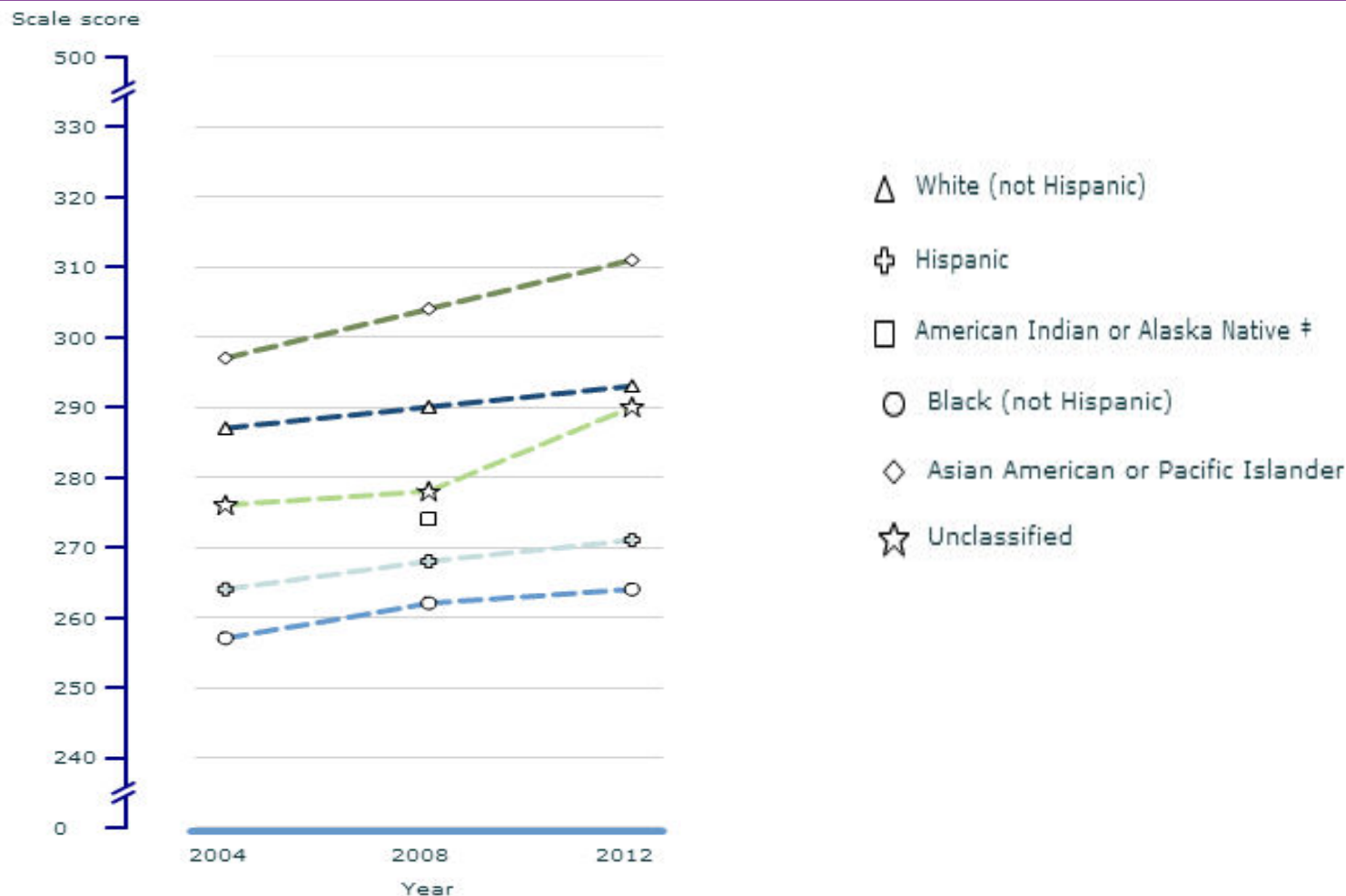


Grade 4 NAEP Achievement



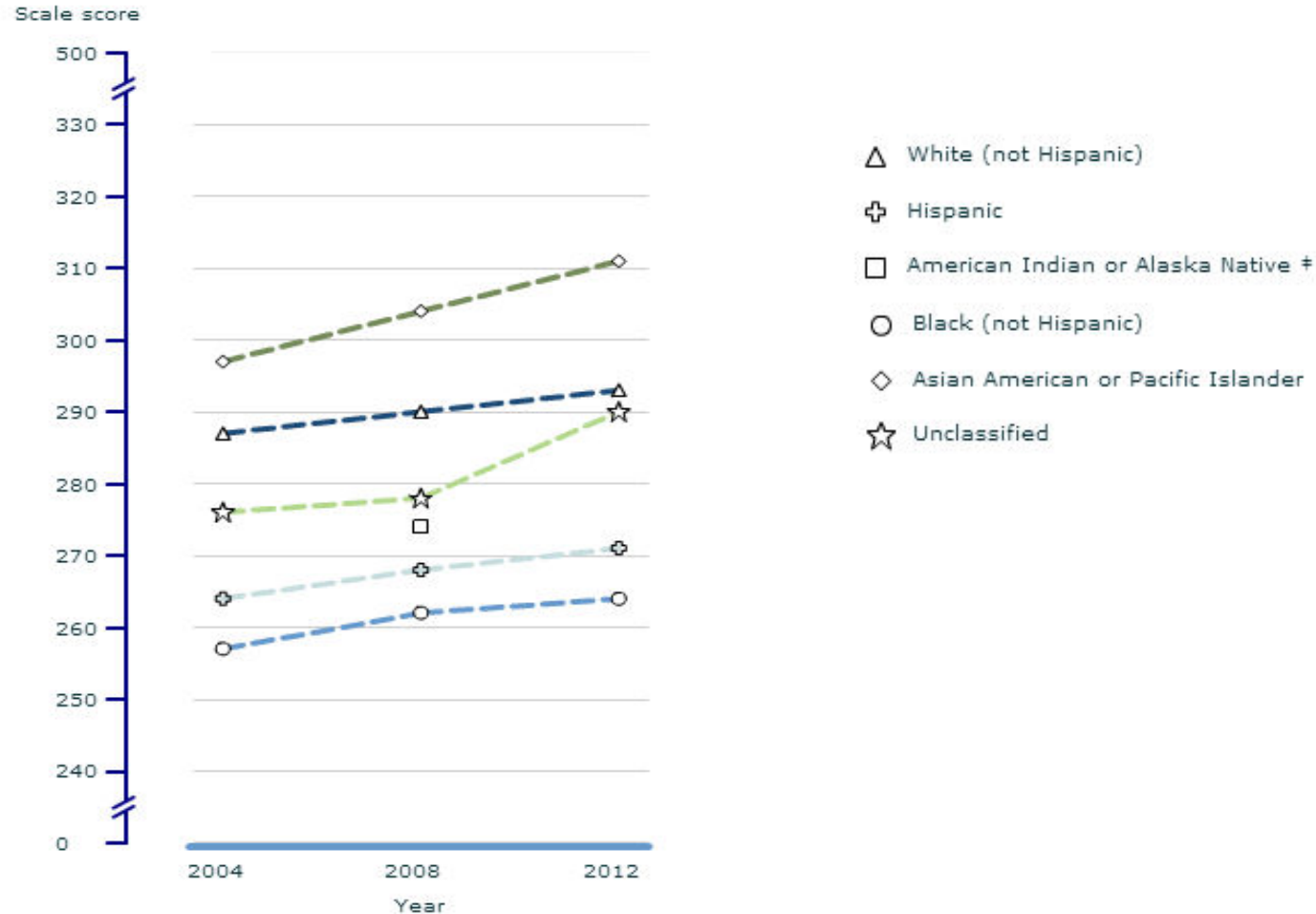


Grade 8 NAEP Achievement





Grade 11 NAEP Achievement



Mathematics

GATEWAY OR GATEKEEPER



Gateway or Gatekeeper?

Course-related context

- Access to advanced courses
- College entrance
- Access to math-dependent career fields

Life-related context

- Sense making in everyday life
- Critical thinking
- Problem solving
- Competency judgements



Key Components of Educational Equity

- Access
- Instruction
- Materials
- Attitudes
- Interactions
- Language
- Assessment



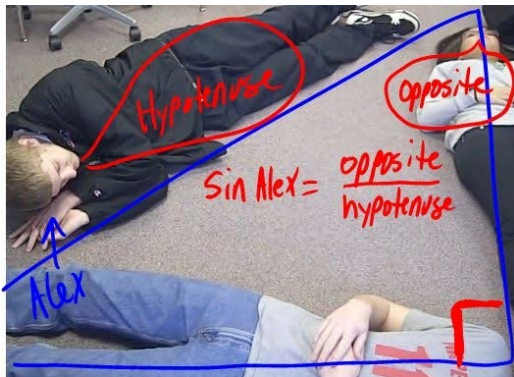


Culturally Responsive Instruction

“... a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes” (Ladson-Billings, 1994, p. 382).

Culturally Responsive Instruction (CRI)

- Not specific to one content area
- Some strategies more effective than others, depending on context
- Attend to identity and competence through mathematics





Considerations for CRI

Examples

- Student relevant
 - Content
 - Context
 - Process/Product



Non-examples

- Different lesson specific to “culture”
 - Ethnic
 - Socioeconomic
 - Religious
 - Gender (ID)



Key Features of CRI

- Communicate high expectations
- Actively engage students in learning
- *Facilitate* student learning
- Understand the assets and capabilities students bring
 - Build relationships



Key Features (cont'd)

- Anchor curriculum in everyday lives of students
- Select participation structures for learning that reflect students' ways of knowing and doing
- Share control of the classroom with your students
- Engage in reflective thinking and writing



Five Equity-based Instructional Practices

1. Focus on conceptual mathematics development
2. Leverage multiple mathematics competencies
3. Affirm students mathematics identities
4. Challenge spaces of marginality
5. Draw on multiple resources of knowledge

From Julia Aguirre's *The Impact of Identity in K-8 Mathematics* (2013)



The Number One Thing

“Quality instruction, therefore, is the most valuable weapon in the teacher's arsenal and the most significant factor that influences achievement gains—an influence many times greater than poverty or per-pupil expenditures (Sanders & Horn, 1994; Wright, Horn, & Sanders, 1997).”

From Kadhira Rajagopal's *Create Success!* (2011)



Practitioner's Perspective in Action

RAINIER BEACH HIGH SCHOOL

Rainier Beach High School

- Student population: 549 (650)
 - Male 49.3%, Female 50.7%
 - Hispanic/Latino(a) 13.0%
 - American Indian/Alaskan Native 0.8%
 - Asian 24.8%
 - Black 51.7%
 - Native Hawaiian/Other Pacific Islander 2.7%
 - White 3.0%
 - Two or More Races 4.0%
- Free/Reduced Lunch 76.3%
- Special Education 21.3%
- Transitional Bilingual 26.6%
- Section 504 0.2%
- Foster Care 0.4%



Brief History

2011-12

New Leadership/Staff

Math proficiency: EOC Y1
33.3%; EOC Y2 28.

2012-13

Math proficiency: EOCY 1
52.0%; EOC Y2 48.9%

IB Implementation

2013-14

Math Proficiency: EOC Y1
72.8%; EOC Y2 67.1%

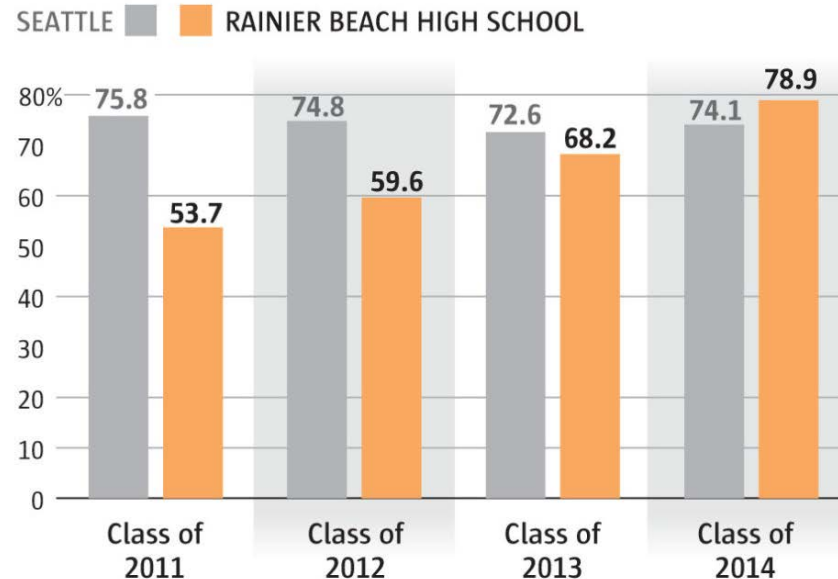
http://www.pbs.org/newshour/extra/daily_videos/ib-program-turns-around-struggling-high-school/

Graduation

More students graduating

Rainier Beach, once considered the worst high school in Seattle, now has graduation rates that top the district's. The rates have climbed by 25 percentage points since 2011.

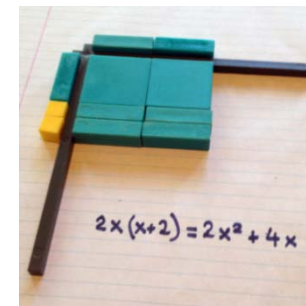
Graduation rates



Source: OSPI/Center for Educational Effectiveness

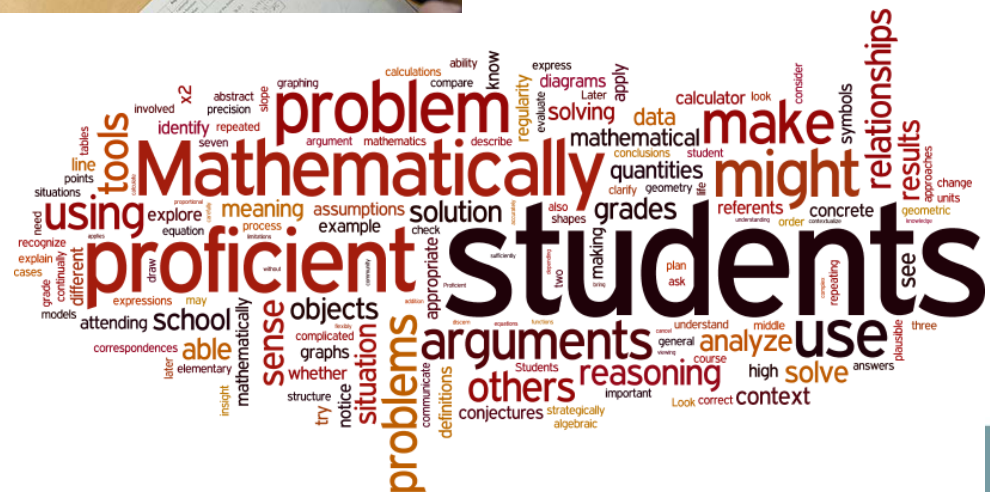
KELLY SHEA / THE SEATTLE TIMES

Systemic Practice



Key Components of Educational Equity

- Access
- Instruction
- Materials
- Assessment
- Attitudes
- Interactions
- Language



Strategies in Practice: Access

- Scaffolding
- Multiple approaches
 - Build confidence
- Differentiated instruction
- Collaborative processes
- Open access to higher level (IB) courses

How do these strategies impact student learning?



CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!



Instruction

- Algebra tiles
- Scavenger hunt
 - Visuals
- Vote by feet
- “Plicker”
 - Technology
- White board activities





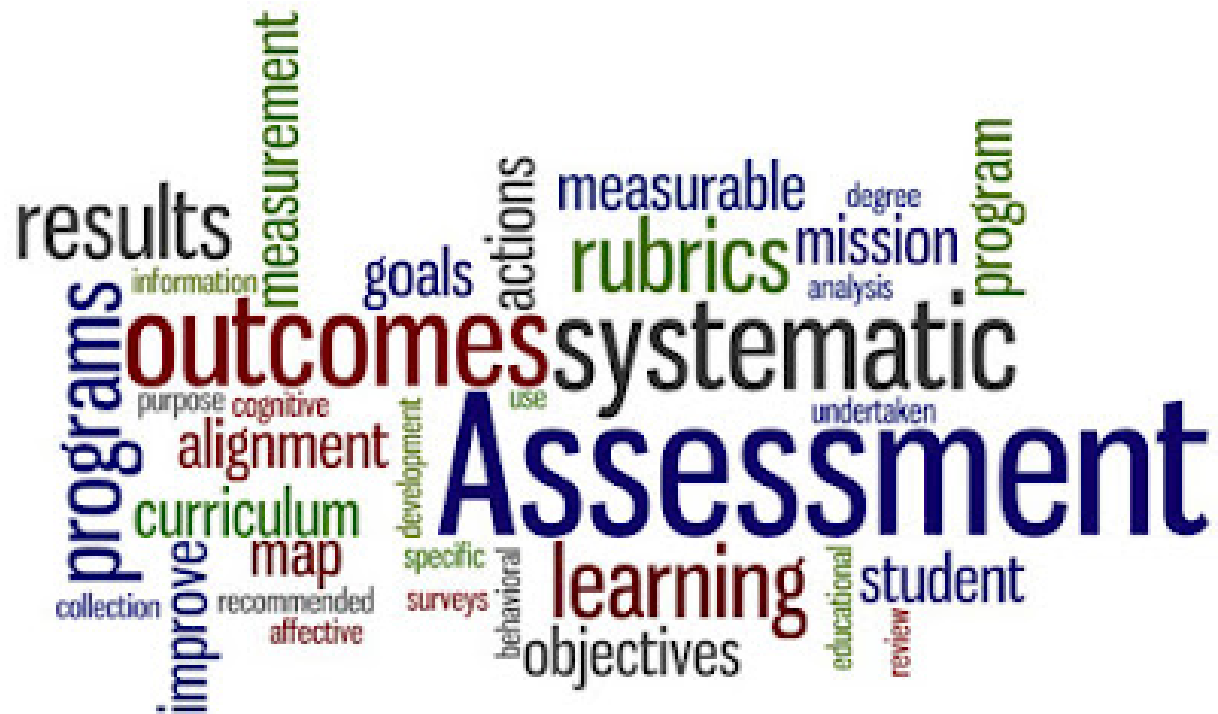
Interaction



- High expectations
 - Build confidence
- Know more about students to “tweak” and make lessons relevant to their lives
- Be authentic with context, content, and praise
- Put more focus on student interactions than small changes to instruction or grading

Assessment

- Moving toward standards-based
- Multiple opportunities to demonstrate mastery
- Timely



Questions?



Thank You!

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Resources

Aguirre, J., Mayfield-Ingram, K., & Martin, D.B. (2013). *The Impact of Identity in K-8 Mathematics*. Reston, VA: National Council of Teachers of Mathematics.

Klump, J., & McNeir, G. (2005). Culturally responsive practices for student success: A regional sampler. Portland, OR: NWREL. Retrieved from <http://educationnorthwest.org/sites/default/files/culturally-responsive-practices.pdf>

Stinson, D.W. (2004). Mathematics as “gate-keeper” (?): Three theoretical perspectives that aim toward empowering all children with a key to the gate. *Mathematics Educator*, 14(1), 8–18.