

Recommendation on engaging students in science

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SMRB Meeting

070714

I. Personal experience

- Interest in natural world
- Stubbornness
 - “Especially Weigand; he looks just like the guy who slapped my head and roared at me about football, the guy who taught us science but didn't know the difference between the three classes of levers”
 - Reference to forming club by Anon
- Lots of self doubt

II. Challenges and Opportunities

- Challenges
 - Lack of academic rigor/exposure
 - Lack of context
 - Connection to future
 - Lack of resources

Many people assume that most Native students attend Bureau of Indian Education schools. In reality, however, only **7 percent** of Native students attend BIE schools.



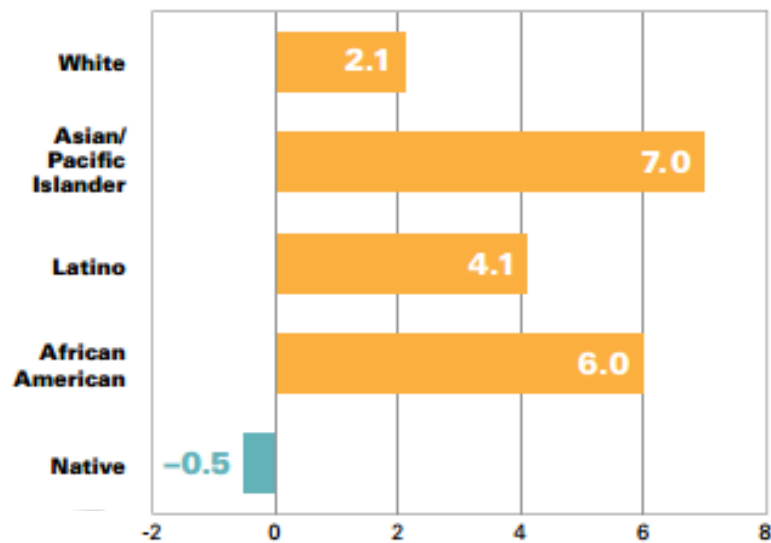
The vast majority — **93 percent** — attend regular public schools.

While Native students are more likely than their peer attend rural schools, about **one-third** of student attend urban or suburban schools.

II. Challenges - Resources

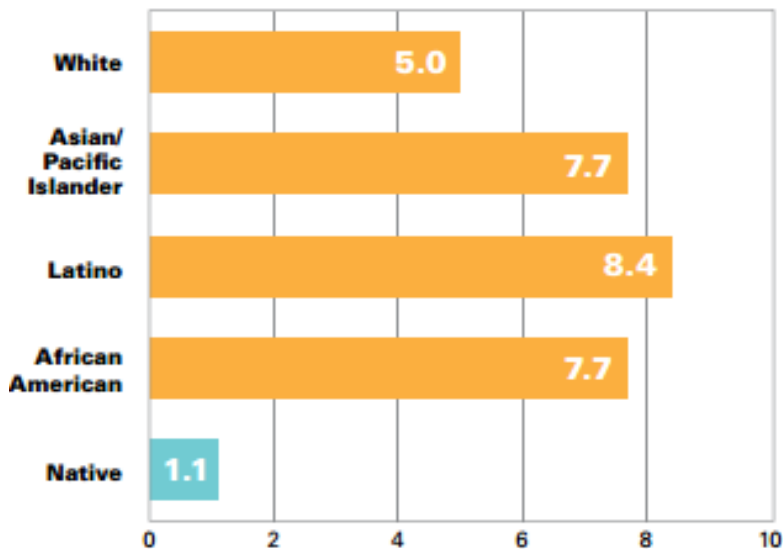
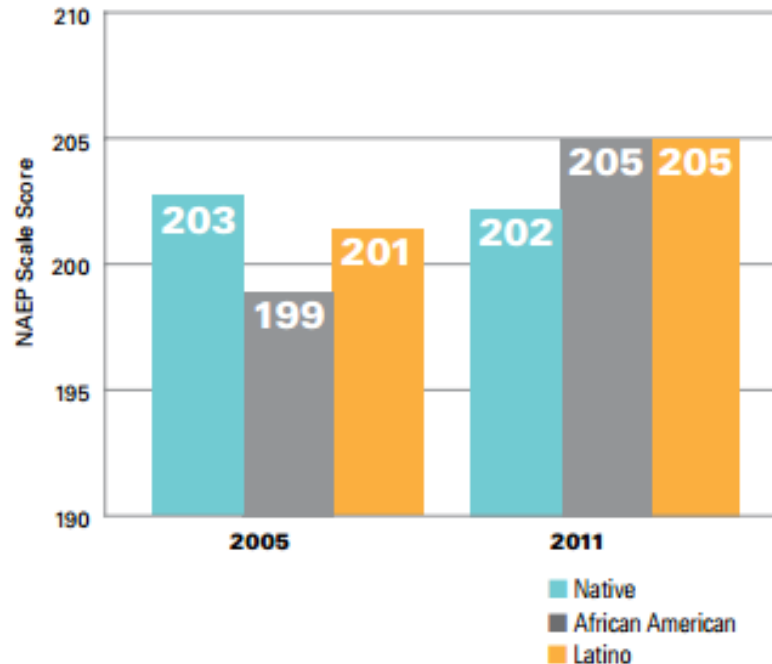
- Physical resources
 - Infrastructure
 - Access to technology
- Financial
 - Cost of college
 - Tribal/CCs with fewer scientific tracts
- Personnel
 - Teacher quality
 - TFA
- **Mentors**
 - Connecting science to community
 - Research experiences

2005–2011 Improvement: Fourth-Grade Reading

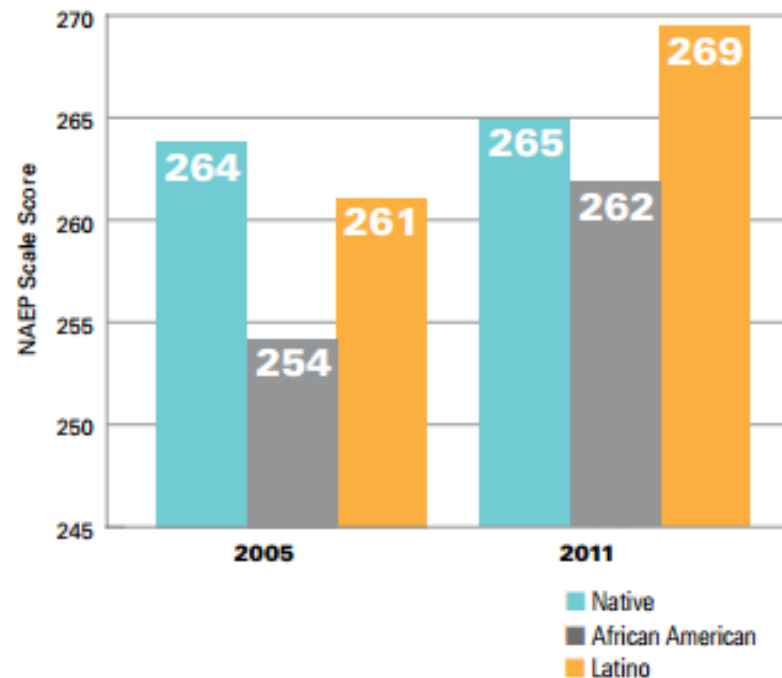


2005–2011 Change in NAEP scale scores (scale score points)

NAEP Performance: Fourth-Grade Reading

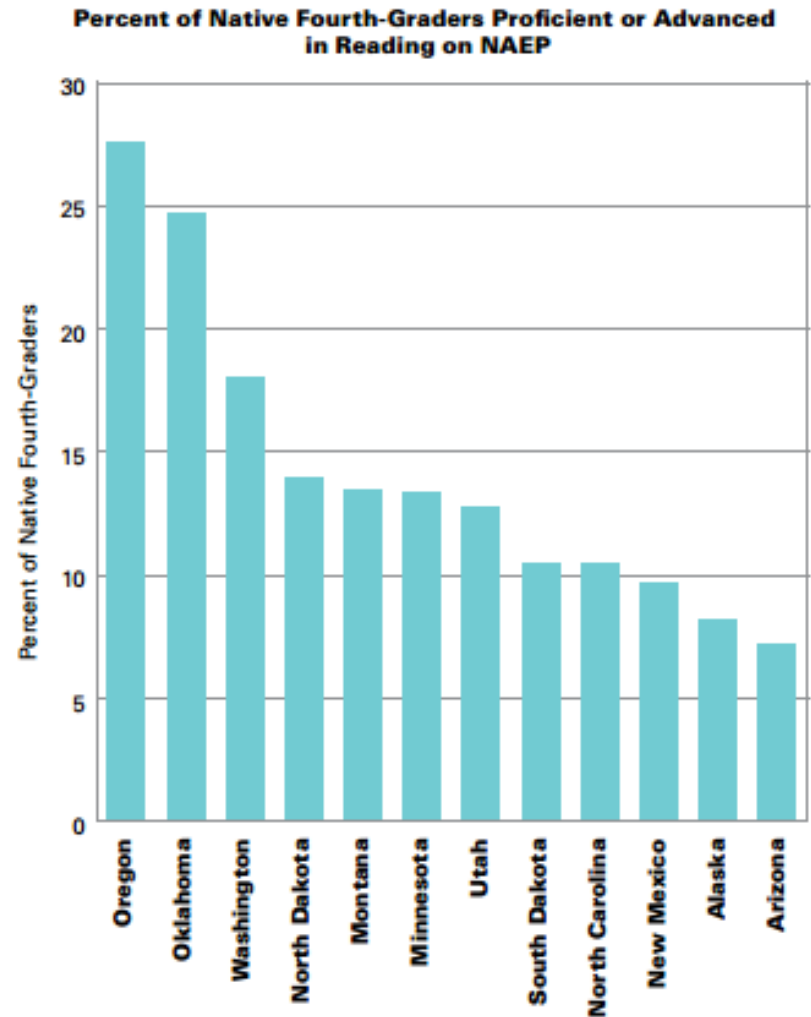


2005–2011 Change in NAEP scale scores (scale score points)



II. Opportunities

- Support organizations
- Pipeline programs
- Learning/research opportunities
- Understanding context
- Role models



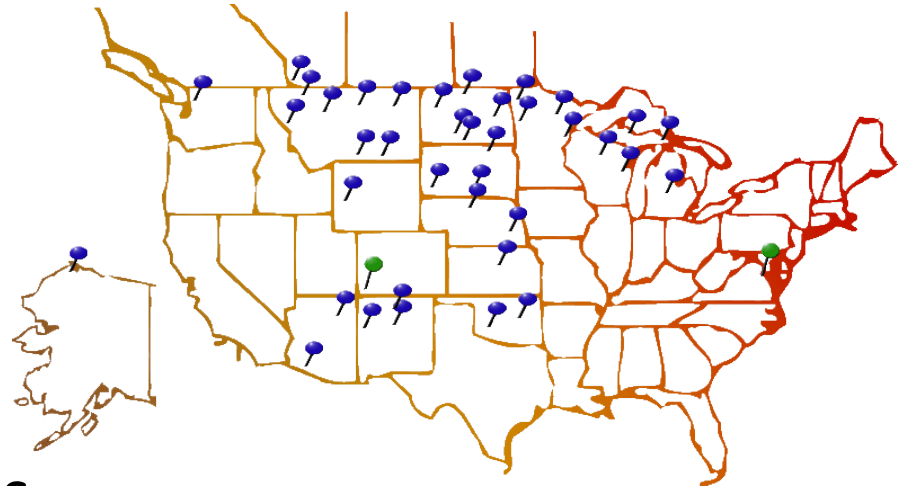
II. Opportunities - Support

- AISES
- NIM
- ANAMS
- SUUMA



II. Opportunities – Pipeline and Research

- Pipeline
 - College Horizons
 - Native American High School Summer Program (Harvard)
 - Na Pua No'eau
- Research
 - Tribal colleges
 - government programs
 - R1 academic institutions



II. Opportunites – Context and Mentors

- Context
 - Teaching in a culturally sensitive way
 - i.e. genetics
 - Tying research to community
 - i.e. NAHSSP focused on addiction
- Mentors
 - Validation
 - Peer-to-peer without competition
 - Work in cohorts
 - Highlighting role models



III. Advice - Engagement

- Engagement
 - Travel to communities to engage students
 - What is science like
 - What can you do with it
 - How is it used to benefit society/communities
 - Work directly with Tribal colleges
 - Offering NIH research opportunities

III. Advice - Support

- Holding up the pipeline
- Encourage mentorship
- Data collection on career paths
- Target broad spectrum of students