

VISIONARY CONFERENCE 2010



AGENDA

- Intel Program Overview
- Environment
- “STEM” Challenges

Mission:

Intel is directly involved in education today to inspire and enable tomorrow's innovation. Intel believes that students everywhere deserve to have the skills necessary to become the next generation of innovators.

- Intel has invested over \$1B and Intel employees have donated over 2.5M hours in the past decade towards improving education in over 50 countries.
- We are actively involved in K-20 education programs, advocacy, and technology access to enable tomorrow's innovators.
- We believe that teachers are the key and we invest in teacher professional development



US Education Programs - Intel

- Inspire and enable tomorrow's innovation through authentic inquiry and independent research
 - Science Talent Search – Over 1,700 applications
 - Intel International Science and Engineering Fair ~450 fairs in US, more 100,000 students
- Teachers are the key and we invest in teacher professional development
 - Intel Teach – 350,000 teachers, 13 “Intel Training Agency” reached all 50 states
 - Intel Math – Doubling this year to 1,500 teachers and 4 states
- We collaborate with governments, development agencies, non-profits and multilateral organizations to advocate for education excellence and access
 - Achieve, NGA, CCSSO, Partnership for 21st century, etc.
 - Change the Equation – White House STEM initiative
- Intel Computer Clubhouse is an after-school program in underserved areas, learning model created by the Boston Museum of Science and the MIT Media Lab
 - Over 60 clubs in the US based in community-based organizations
- Our US employees volunteer over 125,000/year in K-12 schools

Science is back



- “Science is more essential for our prosperity, our security, our health, our environment, and our quality of life than it has ever been before
- The President set four key priorities specific to meeting this STEM challenge:
 1. Rapidly increasing the number of outstanding STEM teachers
 2. Setting high world-class STEM standards for all our students
 3. Bringing the “wonder of science” to students with real hands-on learning
 4. “All hands on deck” effort that challenges Governors, industry, foundations, and science and engineering professionals to grow and build strong multi-sector partnerships in this space.

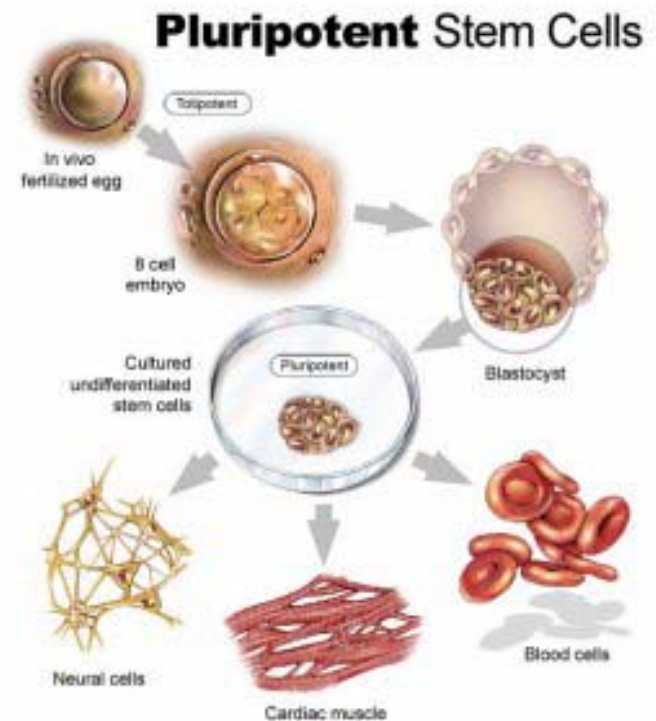
Challenge #1

Juliet:

"What's in a name? That which we call a rose
By any other name would smell as sweet."

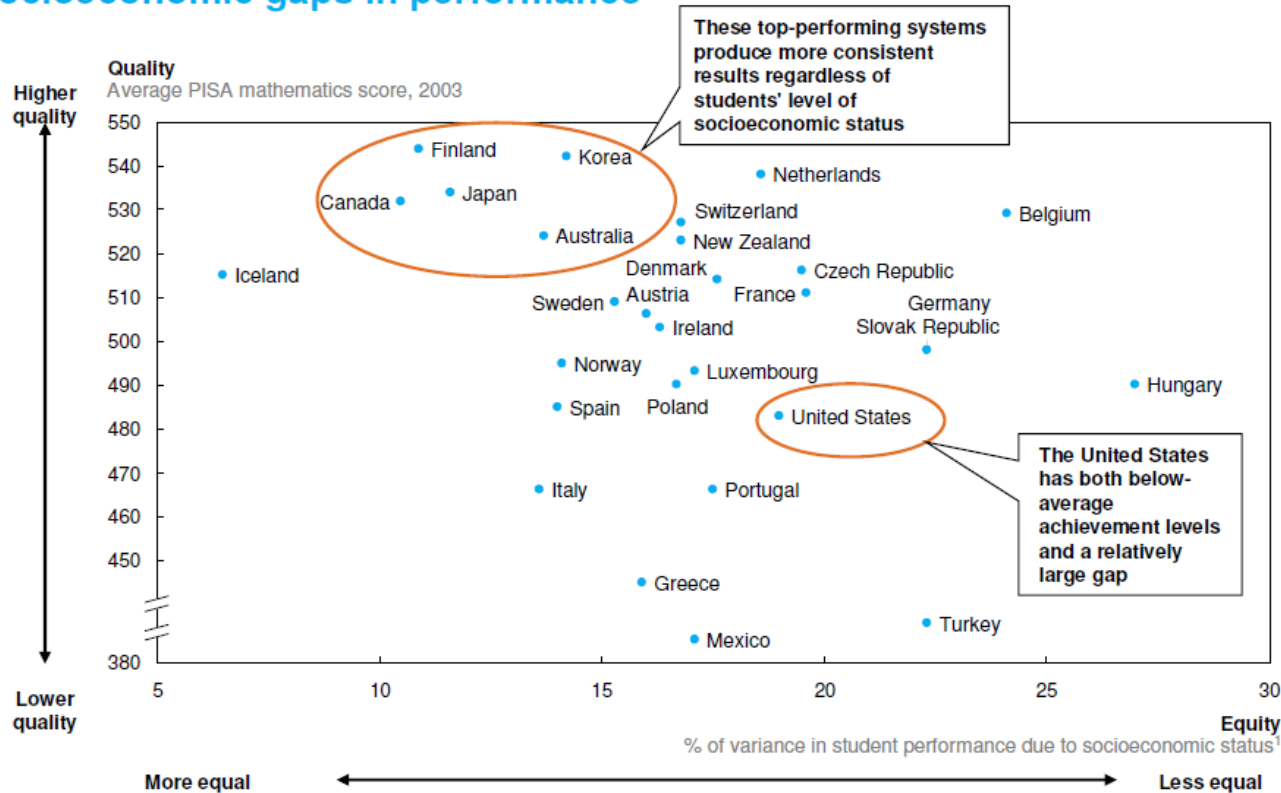
Romeo and Juliet (II, ii, 1-2)

The Name: Why STEM?



Challenge #2

In general, top-performing educational systems have smaller socioeconomic gaps in performance



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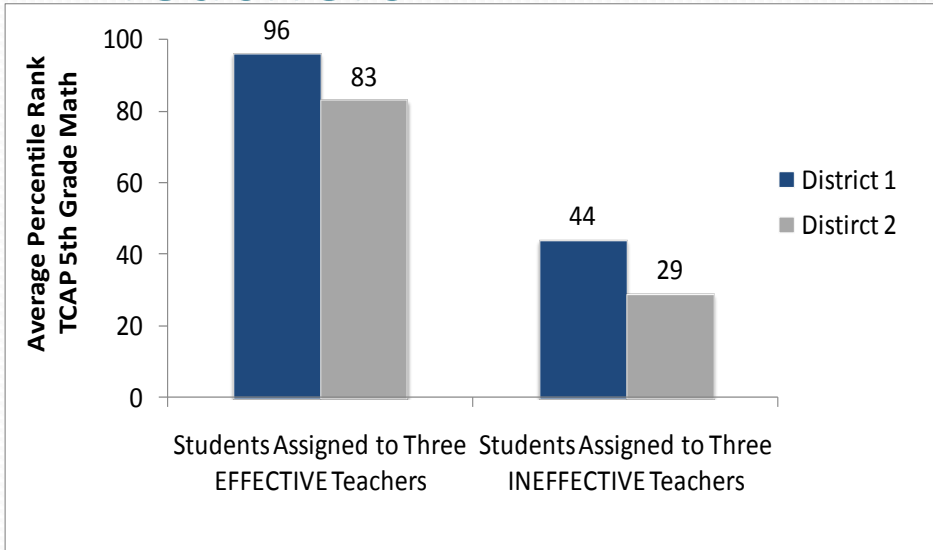
¹ Socioeconomic status as measured by PISA's index of economic, social, and cultural status.

SOURCE: Learning for Tomorrow's World – First Results from PISA 2003; McKinsey analysis

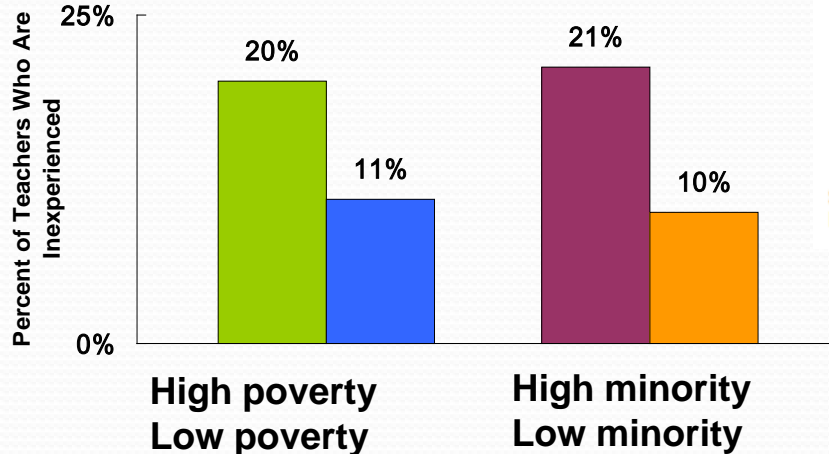
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US has a large socioeconomic performance gap

Challenge # 3: Access to Highly Qualified Teachers



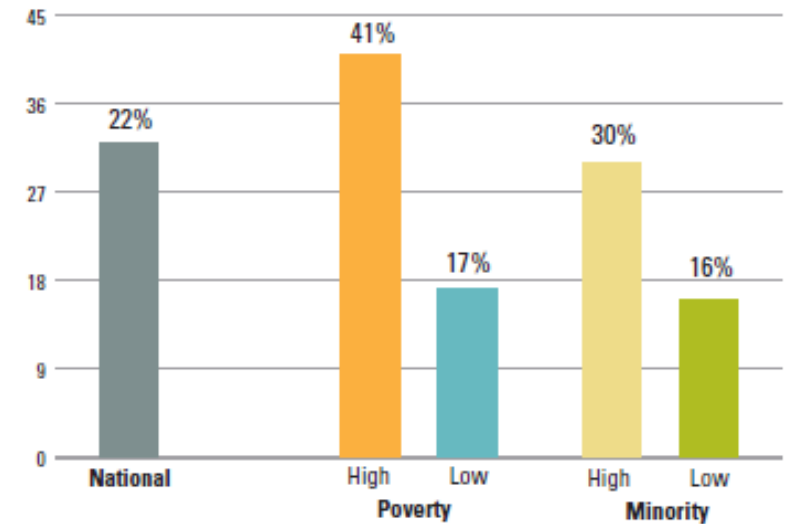
Source: National Center for Education Statistics, "Monitoring Quality: An Indicators Report," December 2000.



Note: High poverty refers to the top quartile of schools with students eligible for free/reduced price lunch. Low poverty-bottom quartile of schools with students eligible for free/reduced price lunch. High minority-top quartile; those schools with the highest concentrations of minority students. Low minority-bottom quartile of schools with the lowest concentrations of minority students

Nationwide, secondary school mathematics classes are taught far too often by out-of-field teachers. For students in high-poverty and high-minority schools, access to highly qualified teachers remains even more elusive.

Percentage of Classes Taught by Teachers With Neither Certification Nor Major



Source: Analysis of 2003-04 Schools and Staffing Survey data by Richard M. Ingersoll, University of Pennsylvania, 2007.

Challenge #4: Parents would rather talk drugs than science or math, study says*



*This survey of parents in the United States was conducted online between Sept. 23 and 28, 2009 by Penn, Schoen and Berland Associates on behalf of Intel. Participants included 561 adults with children ages 5 to 18. The margin of error is +/- 4.14 percent.

Key Findings

- 98% of parents believe that science and math are critical to the future of the country
- 91% of parents believe that parental involvement is key to their children's success

BUT

- More than 50% of parents rank math or science as the subjects most critical to their children's future success
- More than 53% of parents of teenagers admit that they have trouble helping their children with math and science homework
- 25% of parents are less involved because of their lack of knowledge

Questions

BACK UP

Race to the Top – A view of the Gates STEM states

- To meet this priority, the State's application must have a high-quality plan to address the need to (i) offer a rigorous course of study in mathematics, the sciences, technology, and engineering; (ii) cooperate with industry experts, museums, universities, research centers, or other STEM-capable community partners to prepare and assist teachers in integrating STEM content across grades and disciplines, in promoting effective and relevant instruction, and in offering applied learning opportunities for students; and (iii) prepare more students for advanced study and careers in the sciences, technology, engineering, and mathematics, including by addressing the needs of underrepresented groups and of women and girls in the areas of science, technology, engineering, and mathematics.
- 5 out of 6 received full 15 points

OHIO - 15

The state makes a very clear effort to prioritize STEM efforts in all its proposed activities addressing high standards, new assessments, and augmented professional development and augmenting sources for STEM educator preparation.

Colorado - 0

The proposed plan does not meet the three requirements of the STEM priority. It focuses mainly on making more resources available to teachers (requirement ii), but does not mention developing rigorous courses of study for students or the recruitment and preparation more students for advanced study and careers in STEM fields. The CO STEM Network and STEM in Action Initiative, as described, do not fully meet the three requirements of the competitive preference priority.

Hawaii - 15

Hawaii is clearly committed to an emphasis on STEM as evidenced throughout its statewide reform agenda. Career and College ready diplomas, a compelling plan to infuse STEM education across the States K-12 curriculum, funding from the Governor to support a STEM initiative, support from the University of Hawaii, intensive training for significant numbers of math and science teachers, and a variety of solid examples of school level efforts all support a strong, sustained emphasis on STEM.

Minnesota - 15

Although professional development planned for teachers to develop their content knowledge in STEM disciplines needs to be deepened and increased, particularly since the state's plan is to integrate these disciplines into the common core of standards for mathematics at all grade levels, the state has clearly made proficiency in STEM subjects for all students a priority. Evidence is presented throughout the application. The Longitudinal Data System (Criterion C) will include a STEM data dashboard and digital resources for 24/7 teacher professional development in mathematics and science. STEM grants will be awarded to the lowest achieving schools in need of turnaround (Criterion E) and will be included in the professional development targeted to teachers and principals of these schools. A Math and Science Academy with 9 regional offices throughout the state has already trained 1200 secondary teachers in 4 years and will expand enrollment to include elementary teachers (Criterion D). The common core of state standards in mathematics at all grade levels will be aligned with STEM (Criterion B). The state has collected baseline data for students currently graduating with degrees in STEM disciplines from 2-year and 4-year colleges to begin performance measurement. Statewide public awareness campaigns, forums, and summits that drew 10,000 parents and students, and outreach to the business and university communities have built support for the STEM initiative. As a result, the application is awarded full points for the Emphasis on STEM Competitive Preference Priority.

Pennsylvania - 15

Pennsylvania's STEM effort is mentioned repeatedly throughout the application and is a coherent, multi-faceted effort involving most grades in the K12 system. It fully meets the competitive preference priority of RttT requirements.

Virginia- 15

The applicant meets the STEM criteria given its focus on STEM throughout its application. Virginia has also taken some actions to strengthen the course of study in STEM. According to the narrative, the state has received national recognition for its STEM academic programs, with resounding student results. Additionally, the state is working with universities, state agencies, industry organizations and other STEM partners to prepare teachers in STEM, both in the individual subject areas, as well as in an integrated format. Finally, Virginia plans to prepare more students for advanced study and careers in STEM, including addressing the needs of underrepresented groups and of women and girls in the areas of STEM.