

Redesigning Urban Schools for the 21st Century



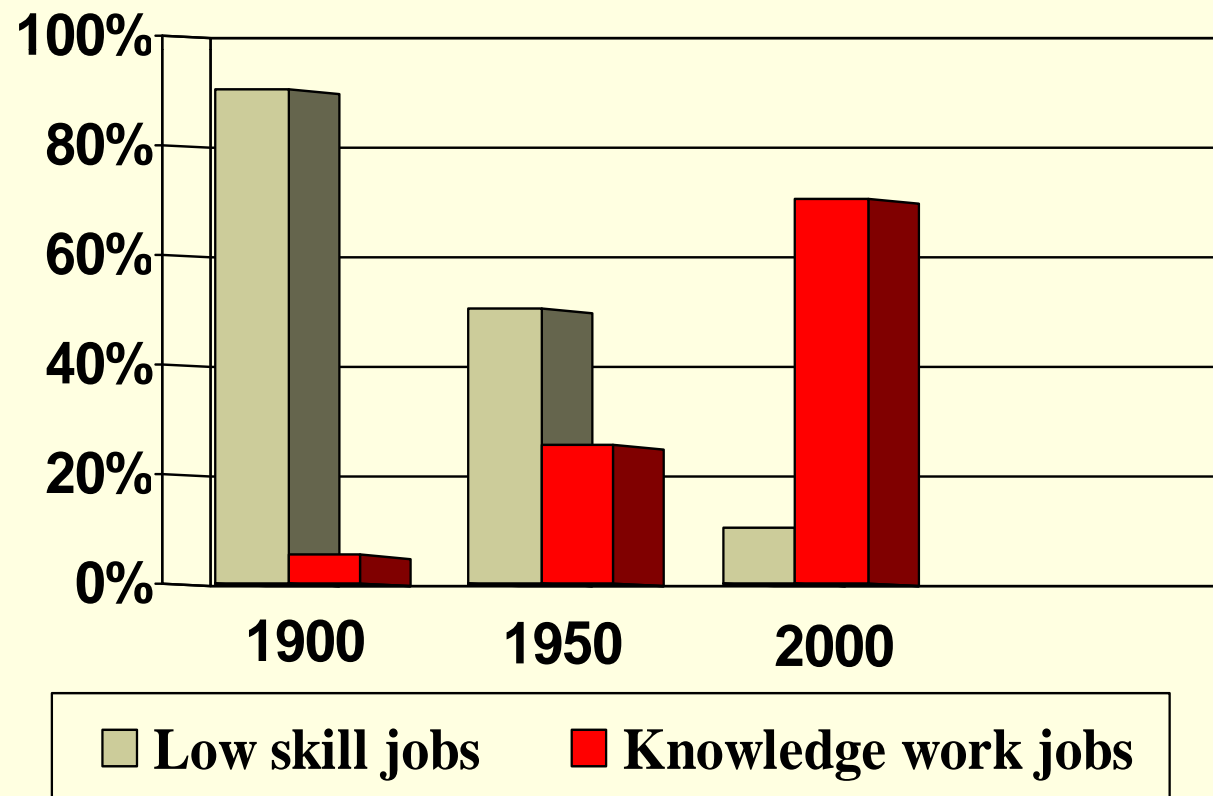
The Path of Learning: Metaphors from the Trenches

- He was as tall as a six-foot-three-inch tree.
- John and Mary had never met. They were like two hummingbirds who had also never met.
- She walked into my office like a centipede with 98 missing legs.
- He was as lame as a duck. Not the metaphorical lame duck, either, but a real duck that was actually lame.
- Even in his last years, Grandpappy had a mind like a steel trap, only one that had been left out so long, it had rusted shut.
- He fell for her like his heart was a mob informant and she was the East River.
- She grew on him like she was a colony of E. coli and he was room-temperature Canadian beef.
- The plan was simple, like my brother-in-law Phil. But unlike Phil, this plan just might work.
- Her vocabulary was as bad as, like, whatever.

Challenges of 21st Century Teaching

- **Greater Need for Education** in Society and Economy
- **Higher Standards** for Learning
- **More Diverse Students** with Greater Educational Needs
- **Greater Expectations** of Schools for Ensuring Success

A Changing Economy Makes Education more Important



Factory Model High Schools Cannot Meet Today's Needs



75-80% graduate from high school

60% of graduates go on to college

50% of college entrants finish

About 30% of the age cohort gets a college degree

Yet 70% of jobs involve “knowledge work” requiring specialized higher education, and many high-tech jobs are filled by workers trained overseas

Achievement Trends for “Minority” Students

- The achievement gap has widened since 1990
- Average NAEP scores for black and Hispanic 17-year olds in reading are comparable to white 13-year olds
- Graduation rates for minorities have declined since 1995 & the gap has grown
- Equity in college going has decreased since 1975

The Consequences of Under-Education

- A new high school dropout in 2000 had less than a 50% chance of getting a job
- That job earned less than ½ of what the same job earned 20 years ago
- Dropouts cost us >\$200 billion / year
- Lack of education is ever more strongly correlated with welfare dependency and incarceration
- Prison populations have tripled and corrections costs have increased by 900%, now competing with higher education costs

How Can We Develop Powerful Teaching?



What Can Be Learned from Other Countries?

(8th Grade PISA Results in OECD Nations, 2006)

Science

Finland
Canada
Japan
New Zealand
Australia
Netherlands
Korea
Germany
United Kingdom

Math

Finland
Korea
Netherlands
Switzerland
Canada
Japan
New Zealand
Belgium
Australia

**U.S. is # 21 / 30 OECD nations
#31 / 40 top nations**

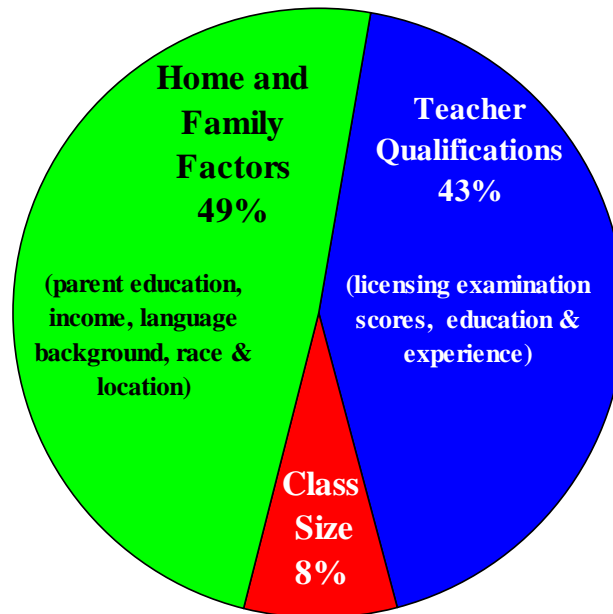
**U.S. is #25 / 30 OECD nations
#35 / 40 top nations**

What are High-Achieving and Steeply-Improving Nations Doing?

- Universal health care & early learning
- Substantial investments in initial teacher education and ongoing professional learning
- More continuous relationships with children
- A lean curriculum & school-based assessments, focused on higher order thinking and performance skills
- Equitable spending with investments in high-need schools and students

Influence of Teacher Qualifications on Student Achievement

Gains in Math Achievement from 3rd to 5th Grade Due to:



Developed from data presented in Ronald F. Ferguson, Paying for Public Education: New Evidence of How and Why Money Matters, *Harvard Journal on Legislation*. 28 (Summer 1991): pp. 465-498.

National Commission on Teaching & America's Future, *Doing What Matters Most*, 1997.

Expectations for Learning are Changing

The new context means new expectations. Most studies include:

- Ability to communicate
- Adaptability to change
- Ability to work in teams
- Preparedness to solve problems
- Ability to analyse and conceptualise
- Ability to reflect on and improve performance
- Ability to manage oneself
- Ability to create, innovate and criticise
- Ability to engage in learning new things at all times
- Ability to cross specialist borders

NAEP, 8th and 12th Grade Science

1. What two gases make up most of the Earth's atmosphere?

- A) Hydrogen and oxygen
- B) Hydrogen and nitrogen
- C) Oxygen and carbon dioxide
- D) Oxygen and nitrogen

2. Is a hamburger an example of stored energy? Explain why or why not.

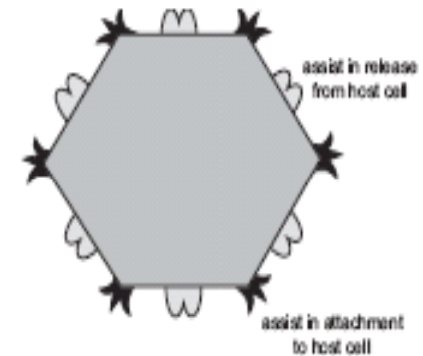
High School Biology Exam, Victoria, Australia

3. When scientists design drugs against infectious agents, the term “designed drug” is often used.

A. Explain what is meant by this term.

Scientists aim to develop a drug against a particular virus that infects humans. The virus has a protein coat and different parts of the coat play different roles in the infective cycle. Some sites assist in the attachment of the virus to a host cell; others are important in the release from a host cell. The structure is represented in the following diagram:

The virus reproduces by attaching itself to the surface of a host cell and injecting its DNA into the host cell. The viral DNA then uses the components of host cell to reproduce its parts and hundreds of new viruses bud off from the host cell. Ultimately the host cell dies.



U.S Schools Spend Education Dollars Differently than do Other High-Achieving Countries

- 52% of US ed. \$ reach the classroom vs. 80% in high-achieving European and Asian countries
- 43% of US education employees are classroom teachers vs. 70-80% in other countries
- Teachers' work is more discontinuous (1 subject for one semester or year vs. 2 subjects for >1 yr.)
- Teachers have much less time to work together to create a coherent, high-quality program (3-5 hours / week of individual planning vs. 15-25 hours of collective planning and ongoing inquiry)

Why think about redesign?

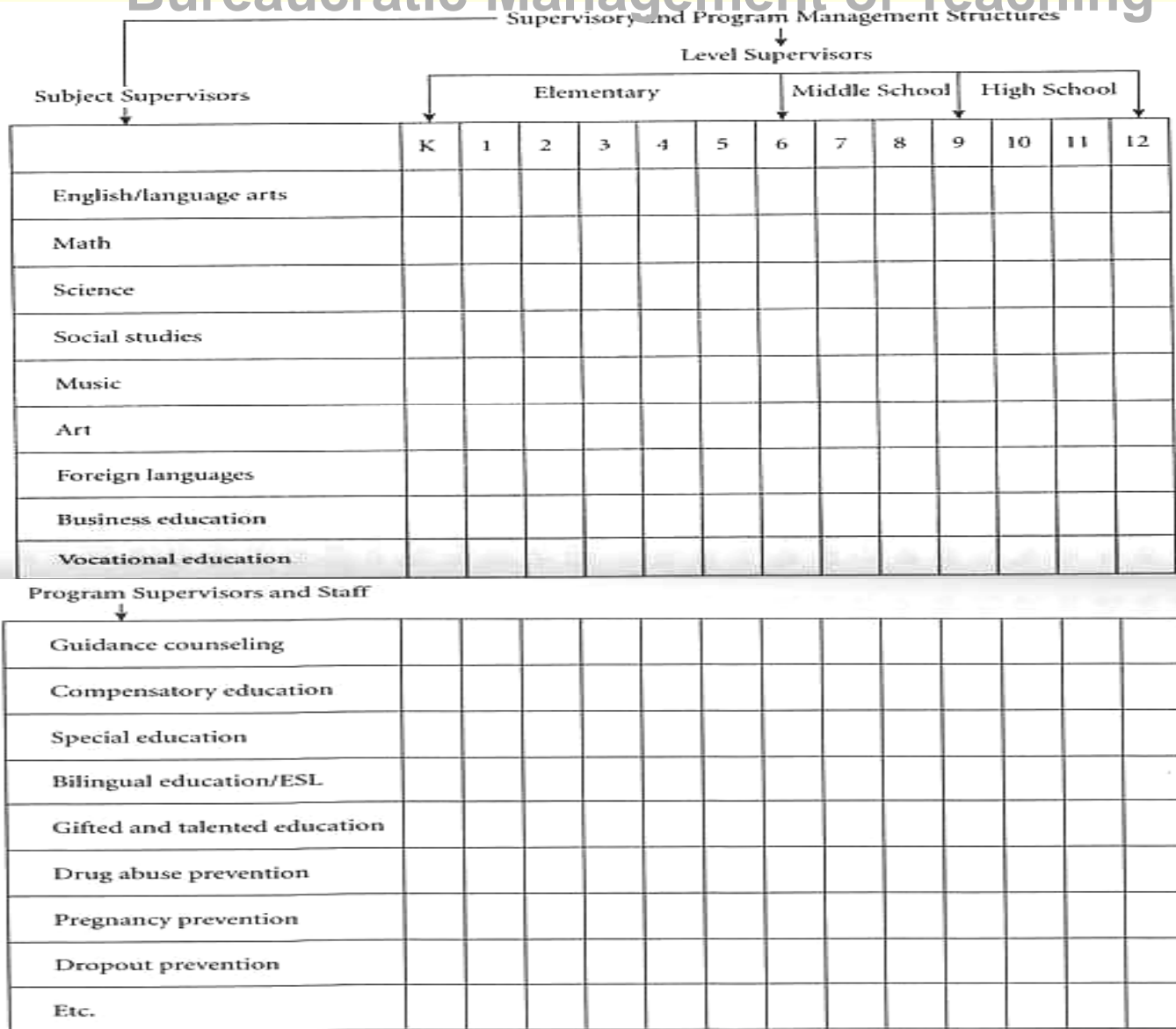
Every organization is perfectly structured to get the results that it gets.



Schools Designed in 1910 Adopted the Factory Model

- Schools are often large & bureaucratized
- Students change teachers each year
- Secondary students see many teachers in large groups (the “platoon” system)
- Teachers do not share students
- Teachers plan & teach alone
- Curriculum is fragmented
- Counselors have large case loads
- Parents have no easy way to connect to teachers
- Add-on programs are used to try to address the problems caused by a de-personalized structure

Bureaucratic Management of Teaching



Within this system:

- More managerial coordination was needed
- Less money made it to the classroom
- Curriculum & staff effort became more fragmented
- Relationships became less personalized
- There was less front-line accountability for outcomes

Redesigned Schools Produce Better Outcomes

40 years of research show that smaller high schools with thoughtful designs produce

- Higher achievement
- Higher graduation rates
- More positive feelings about school
- Greater safety
- More leadership opportunities for students

High Schools for Equity

Policy Supports for Student Learning
in Communities of Color



Diane Friedlaender • Linda Darling-Hammond
with the assistance of
Alethea Andree • Heather Lewis-Charp • Laura McCloskey
Nikole Richardson • Ash Vasudeva

A Study by the School
Redesign Network at Stanford University
Sponsored by Justice Matters

School Sample

- Predominantly students of color and low-income students
- Non-selective admissions
- Engaging, empowering approach to education, connected to communities and families
- Graduation rates above the state average
- 80-100% of students accepted to college

Los Angeles



Animo Inglewood High School

San Diego

Construction Tech Academy



San Francisco



June Jordan School

San Francisco

Leadership High School



Sacramento

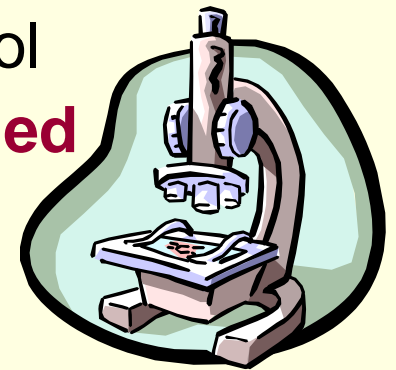
New Tech High School



New Tech High School

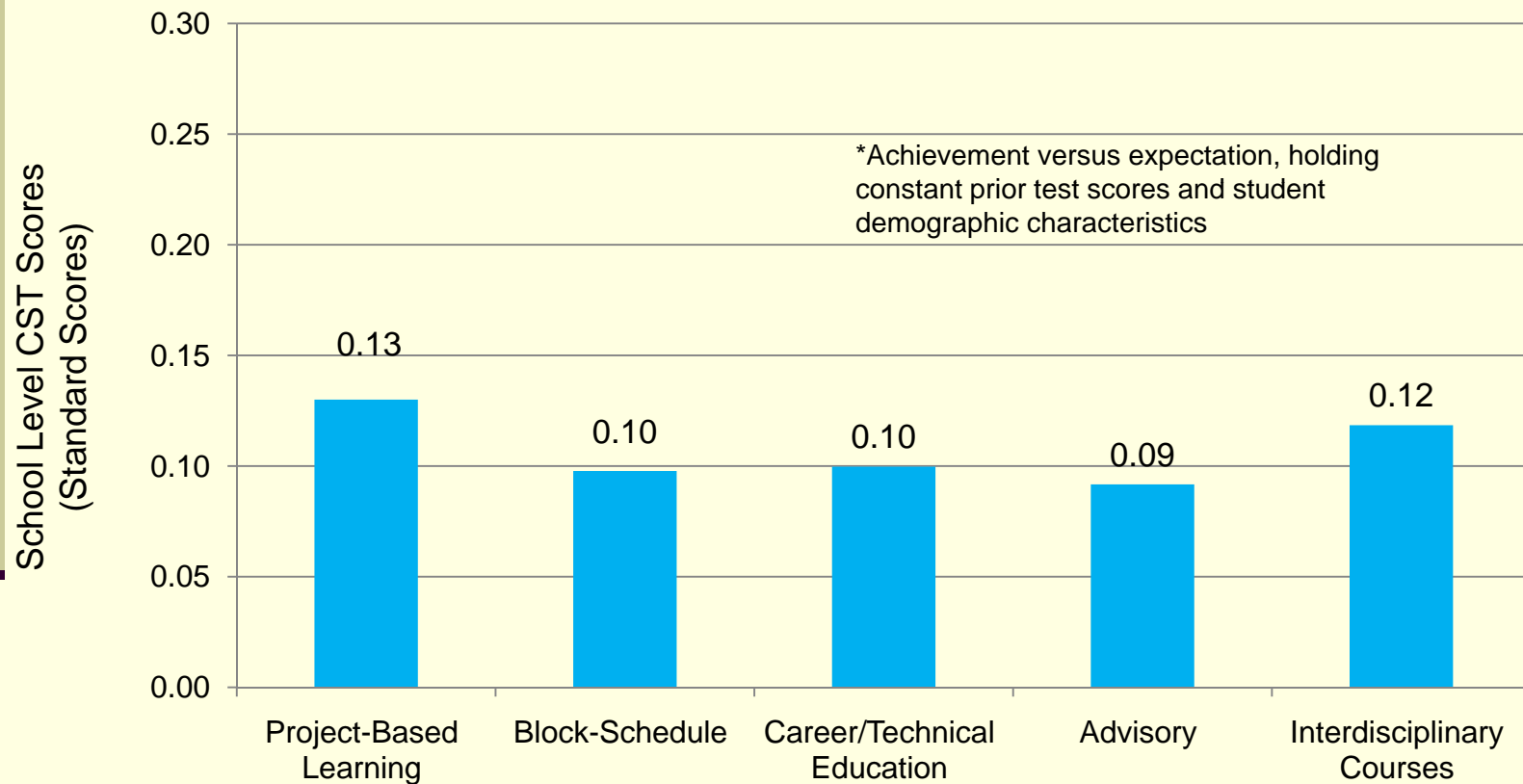
Studies of Successful School Redesign: Factors influencing new school success

1. **Small Size and Personalization**
2. **Teams working continuously with students**
3. **Coherent, authentic curriculum**
4. **Performance Assessments & exhibitions**
5. **Adaptive pedagogy**
6. **Flexible supports (routinely available)**
 - Resource room
 - Tutoring; homework time; Saturday School
7. **Expert teachers with regularly scheduled collaborative planning & professional development time**



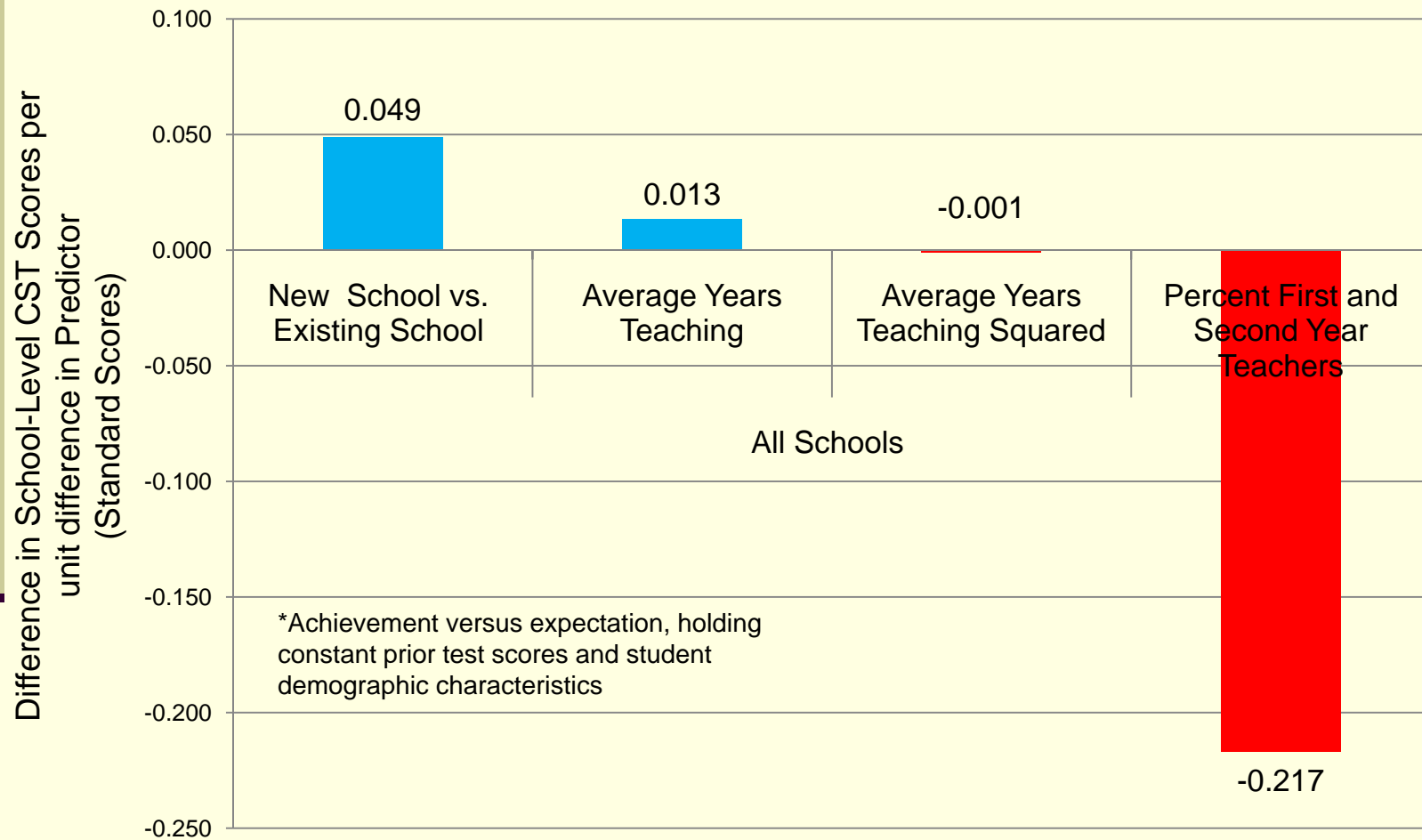
School Design Features Influence Productivity

(2007 ELA Productivity* Associated with High School Characteristics)

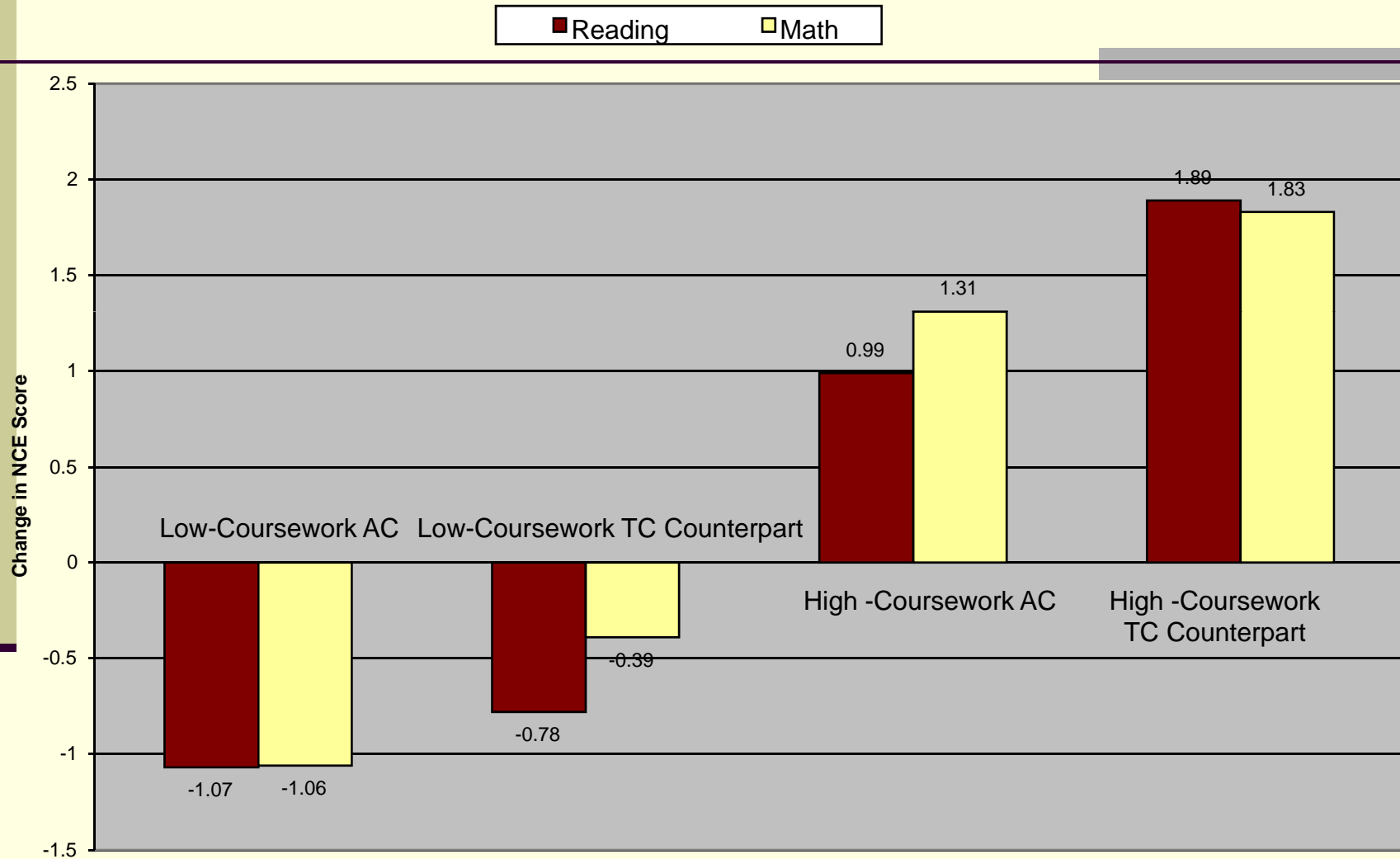


Staffing Also Strongly Influences School Achievement

(ELA Productivity* (2003-07) Associated with Teacher and School Characteristics)



Fall-to-Spring Test Score Gains / Losses of Students Taught by Alternative Route (AC) and Traditional Route (TC) Teachers



Based on actual (unadjusted) fall and spring scores

A System for Teacher Learning

Learning to Practice *in Practice*

Tapping Teacher Expertise to enable

- Strong preparation in PDS and residency programs
- Mentoring
- Modeling and Demonstration
- Lesson Study and Action Research
- Professional Development Laboratory
- On-Site Coaching
- Feedback, Goal-Setting, and Professional Evaluation as part of Career Ladders

Learning *about* Practice *in* Practice



District 2 PD.avi

What We Need In Order to Achieve Educational Quality and Equity

- Well prepared teachers & leaders who know their content and how to teach it to diverse learners
- Engaging, real-world curriculum
- Authentic assessments used for improvement rather than punishment
- Schools designed for teaching, learning, and caring
- Equal and adequate funding