

# Supporting Effective Teaching



# The Path of Learning: Metaphors from the Trenches

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- 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 on 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.

# What Do Effective Teachers Know and Do?

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# Effective Teachers...

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- Engage students in active learning
- Create intellectually ambitious tasks
- Use a variety of teaching strategies
- Assess student learning continuously and adapt teaching to student needs
- Create effective scaffolds and supports
- Provide clear standards, constant feedback, and opportunities for revising work
- Develop and effectively manage a collaborative classroom in which all students have membership.



# PISA 2009 Results



## Reading

Korea  
Finland  
Singapore  
Canada  
New Zealand  
Japan  
Australia

US is #14 / 40

## Mathematics

Singapore  
Korea  
Finland  
Lichtenstein  
Switzerland  
Japan  
Canada

US is #31 / 40

## Science

Finland  
Singapore  
Japan  
Korea  
New Zealand  
Canada  
Estonia

US is #27 / 40

# What are the Highest-Achieving Nations Doing?

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- Societal supports for children's welfare
- Substantial investments in initial teacher education and ongoing support
- Schools designed to support teacher and student learning
- Equitable access to a rich, thinking curriculum
- Performance assessments focused on higher order skills
- Equitable resources with greater investments in high-need schools and students

# Professional Learning Opportunities in High-Achieving Nations

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The highest-achieving nations:

- Ensure extensive initial preparation that includes clinical training in model schools
- Provide beginners with intensive mentoring.
- Offer sustained learning opportunities embedded in practice:
  - Teachers have 15-25 hours a week for collaboration plus 100 hours a year for professional learning
  - Teachers engage regularly in Lesson Study, Action Research, and Peer Observation and Coaching to evaluate and improve practice.

# Evaluation and Career Development

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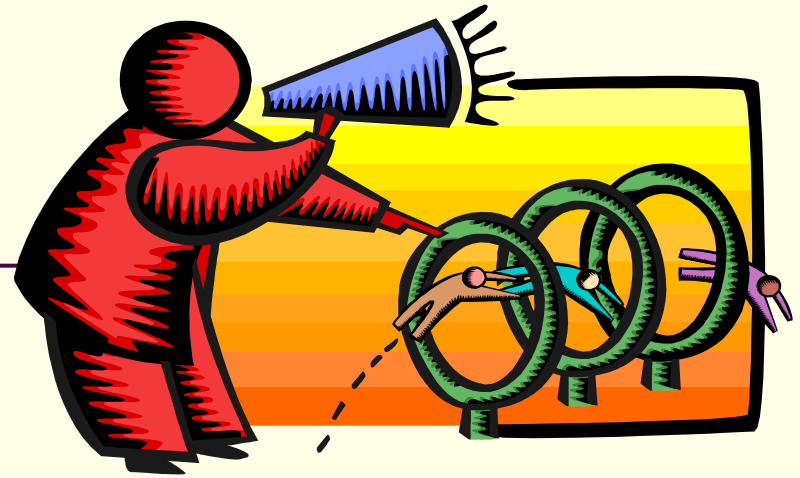
- Focus on whole child development
- Observation and feedback on practice by expert teachers and principals
- Examination of curriculum and student work
- Emphasis on collaboration and contributions to whole-school improvement
- Development of talent
- Support for sharing of expertise





# Different Theories of Change

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- Theory X:

The key problem is motivation. People respond only to rewards and sanctions (“carrots and sticks”). Incentives are the major element of reform.

- Theory Y:

The key problem is learning. People want to be competent. They respond to information about how to succeed in doing their work. Investments in knowledge and capacity are the major elements of reform.

# Key differences in reform approaches:

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## **Teachers and Teaching**

- Do policies develop and share expertise or foster low skills, high turnover, isolation, and remote control of teaching?

## **Standards, Curriculum, & Testing**

- Do standards & curriculum emphasize higher order thinking or memorization of content?
- Do assessments ask students to produce high-quality work or answer multiple choice questions?
- Are teachers involved in assessment design and scoring?

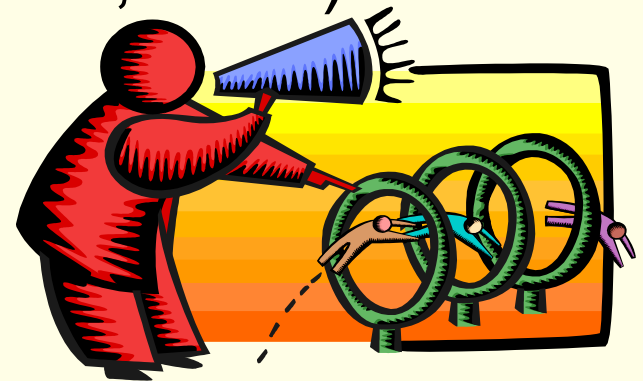
## **Accountability and Improvement**

- Are assessment results used primarily to improve teaching or to rank, reward, and punish schools and teachers?
- Do policies foster competition or collaboration among schools?

# Incentives Alone Do Not Improve Outcomes

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- Studies have found that annual bonus pay for individual teachers allocated competitively based on student test scores has not improved student achievement.
  - Nashville experiment (Springer, 2010)
  - New York City experiment (Fryer, 2011)
  - Portugal experiment (Martins, 2009)



# Investments in Teacher Knowledge Matter a Lot

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Research in NC and NY found that student learning gains are related to:

- Strong academic background
- Quality preparation prior to entry
- Certification in the field taught
- Experience (> 3 years)
- The skills measured by National Board Certification

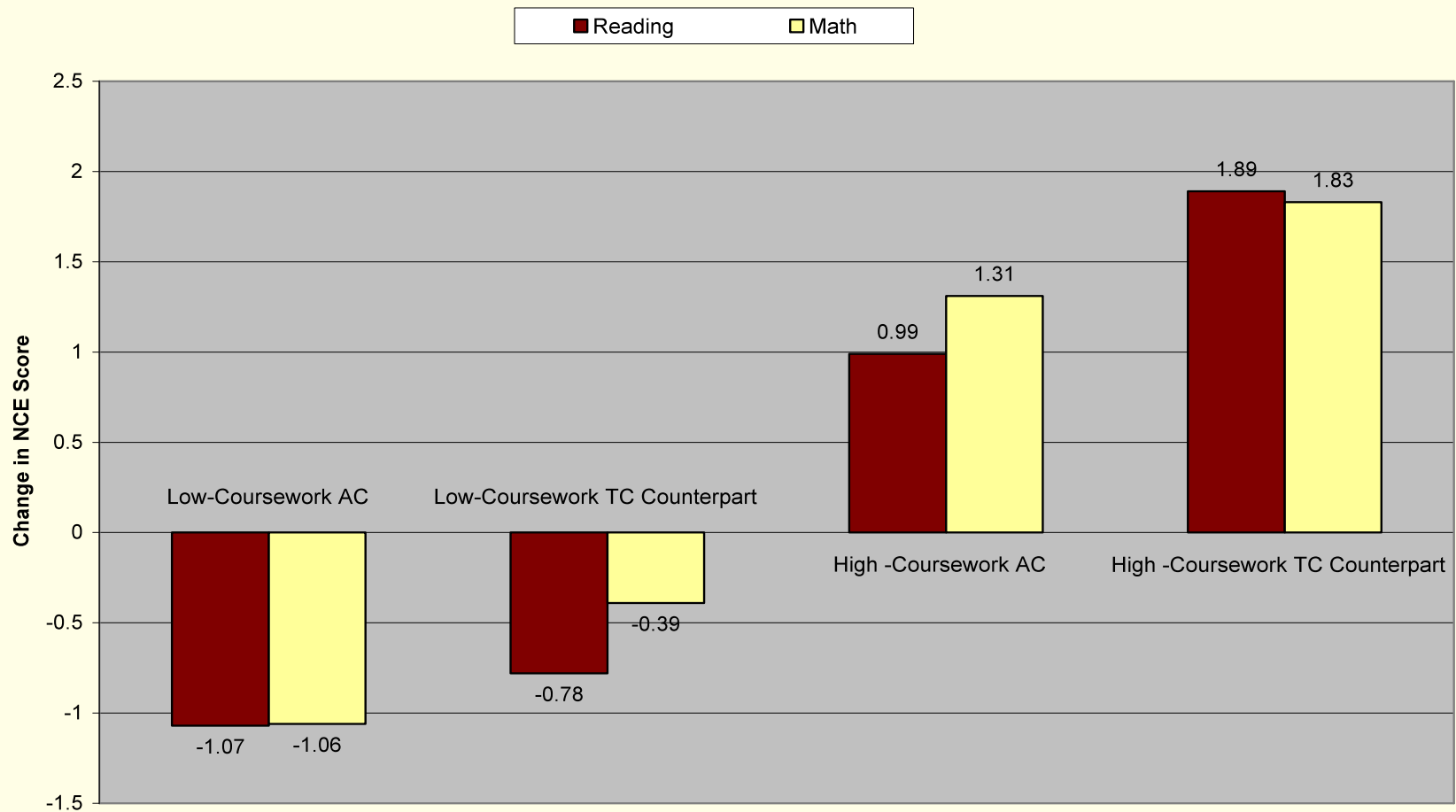
In combination, these skills predicted more of the difference in student learning gains than race & parent education combined (Clotfelter, Ladd, & Vigdor, 2008).

Policies should strengthen & equalize these features.

# What Doesn't Work?

## Pathways that Reduce Preparation for Teaching

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



Based on actual (unadjusted) fall and spring scores

# What Does Work

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- Learning opportunities focused on practice, like National Board certification
  - both individually and schoolwide
  - (Palm Desert, Phoenix, Atlanta)
- Career ladders that enable leadership roles for accomplished teachers
- Effective teams with time and opportunity to work collaboratively
- Focused opportunities to enhance expertise (the Benwood Initiative)

# The Effects of Well-Designed Professional Development

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*"It's all about co-planning, co-teaching and analyzing, and having time out of the regular teaching day to do these analyses."*

*— A Sacramento District Official  
on New Tech High*

*A review of experimental studies found that high-quality professional development programs of about 50 hours on average over 6 to 12 months increased student achievement by 21 percentile points. (Yoon et al., 2007)*

*PD of <14 hours had no effect on student learning.*

# Professional Learning Opportunities that Impact Practice are:

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- ✓ Focused on learning specific curriculum content
- ✓ Organized around real problems of practice
- ✓ Connected to teachers' work with children
- ✓ Linked to analysis of teaching and student learning
- ✓ Intensive, sustained and continuous over time
  - ✓ Supported by coaching, modeling, observation, and feedback
  - ✓ Connected to teachers' collaborative work in professional learning communities
  - ✓ Integrated into school and classroom planning around curriculum, instruction, and assessment





# But few US Teachers Get these Opportunities

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- Effective professional development is still rare
- Most US teachers (>90%) participate in 1 to 2 day workshops and conferences.
- Well under half get sustained PD, get mentoring or coaching, or observe other classrooms.
- Only 17% of U.S. teachers reported a great deal of cooperative effort among staff members in 2004. This percentage shrank to 15% in 2008.

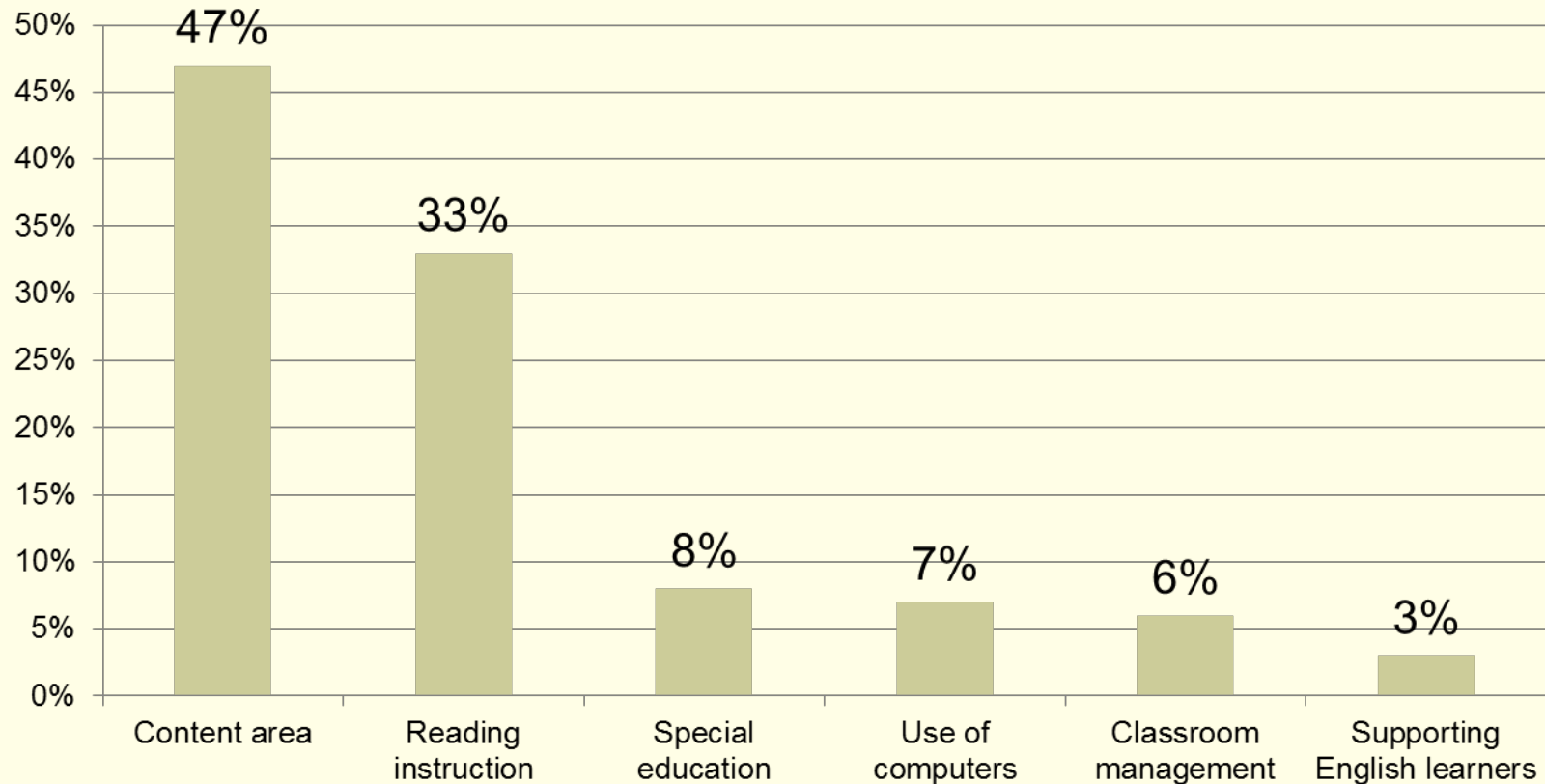
# How is Iowa Doing in Helping Teachers Learn?

- #1 in the nation in support for beginning teachers
- Strong increases in access to PD on reading (78%)
- But < national average in most other areas
- Only 13% of Iowa teachers report strong collaboration in their schools



# How Many Iowa Teachers Receive Sustained Learning Opportunities?

**% of Iowa Teachers Receiving >16 Hours of Professional Development In...**



# Redesigning Schools: Supporting Great Leaders

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Great principals spend their time:

- building a professional learning community
- fostering teacher professional development
- providing instructional feedback to teachers
- working with teachers to improve teaching practices
- using data to monitor school progress, identify problems and propose solutions
- redesigning school organizations
- facilitating student learning beyond the test

# Programs, Districts, and States that Grow Great Leaders Engage in:

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- Purposeful recruitment and selection
- Use of professional standards to guide training and evaluation
- School / district -university partnerships
- Robust internships and cohorts
- Preparation for instructional leadership, organizational improvement, and change management
- Effective evaluation

# The Power of the Internship

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The focus on instruction [and] the work that we did around instruction really helped solidify the intentions that I came in with. But how to do it? There is nothing, no class, no lecture, no other experience than being in the driver seat with the steering wheel in your hands, with the controls right there... I was an intern and I said, 'I love this. It's stressful.'

I would say that everything I experienced in ELDA was relevant to what I am doing today.

# Professional Development for Leaders

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mentoring and coaching  
school visits to improve practice  
peer observation  
principal networks  
action research on practice

# Rethinking Assessment

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“I am calling on our nation’s Governors and state education chiefs to develop standards and assessments that don’t simply measure whether students can fill in a bubble on a test, but whether they possess 21st century skills like problem-solving and critical thinking, entrepreneurship and creativity.”

-- President Barack Obama  
March 10, 2009



# Expectations for Learning are Changing

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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, 8<sup>th</sup> and 12<sup>th</sup> 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.

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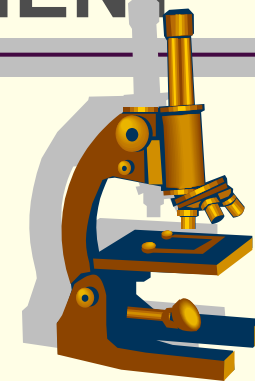
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# SINGAPORE'S SCHOOL-BASED SCIENCE PRACTICAL ASSESSMENT

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## To Assess Experimental Skills and Investigations, Students...

- Identify a problem, design and plan an investigation, evaluate their methods and techniques
- Follow instructions and use techniques, apparatus and materials safely and effectively
- Make and record observations, measurements, methods, and techniques with precision and accuracy
- Interpret and evaluate observations and experimental data



# The goal is Assessment of, as, and for Learning

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Assessment measures are structured to continuously improve teaching and learning.



# Teachers are Deeply Involved

Teachers are integrally involved in the development of curriculum and the development and scoring of assessments for both on-demand tests and local tasks that feed into exam scores and course grades.



## A goal for high-achieving 21<sup>st</sup> century nations:

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- “Those who can, do. Those who understand, teach.”

- “Those who can, teach.

Those who can't go into a less significant line of work.”

