# Recognizing Effective Teaching

**Thomas J. Kane**
Professor of Education and Economics
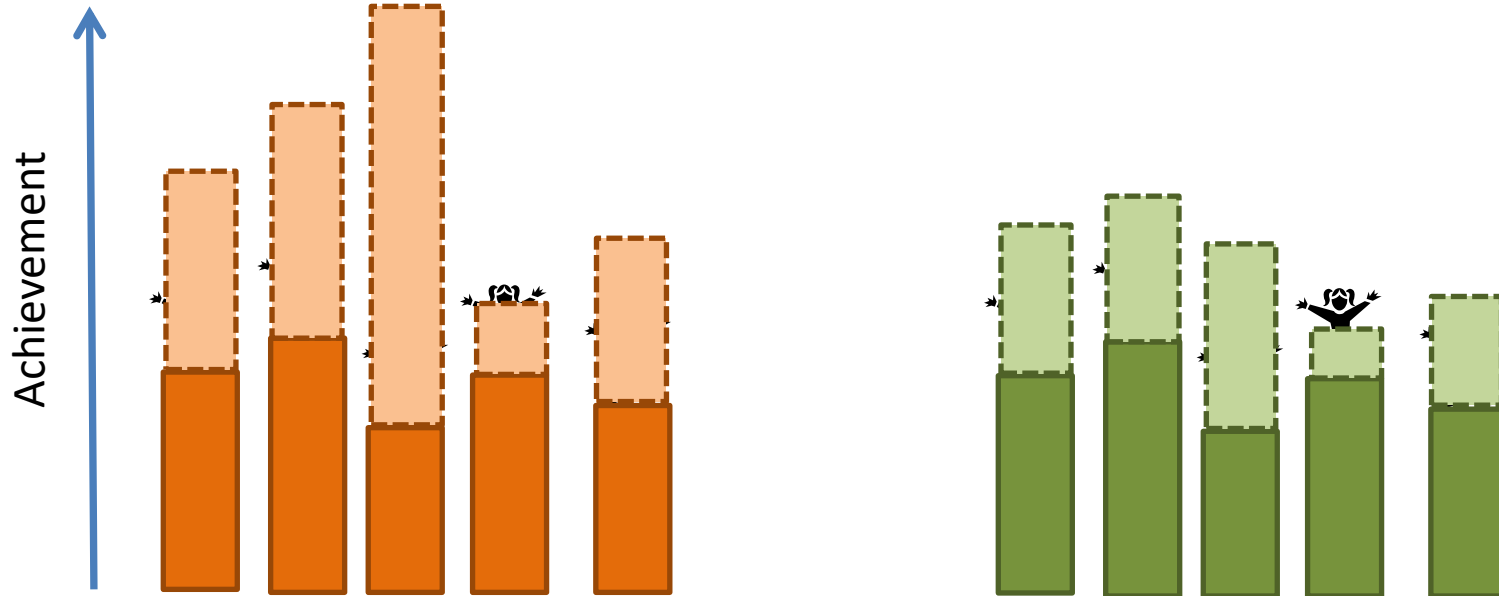Harvard Graduate School of Education

# Tracking Student Growth in Achievement

Teacher A

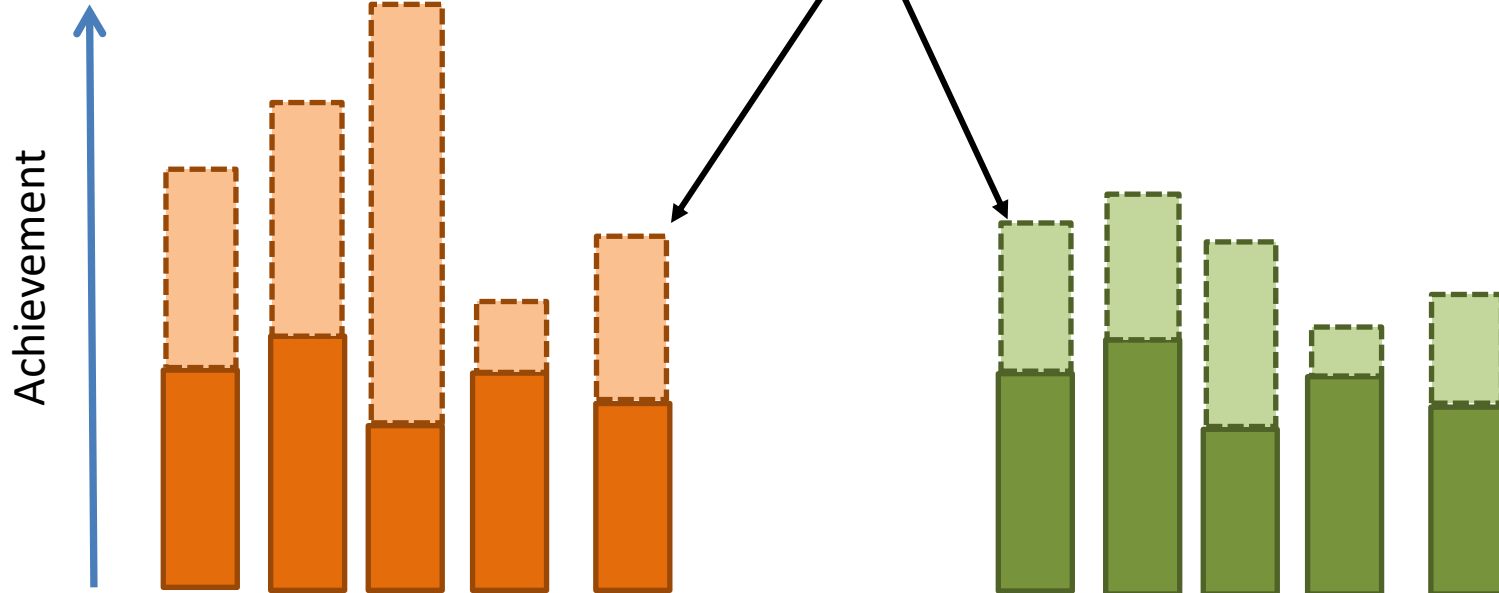Teacher B

Achievement

# Tracking Student Growth in Achievement

Teacher A

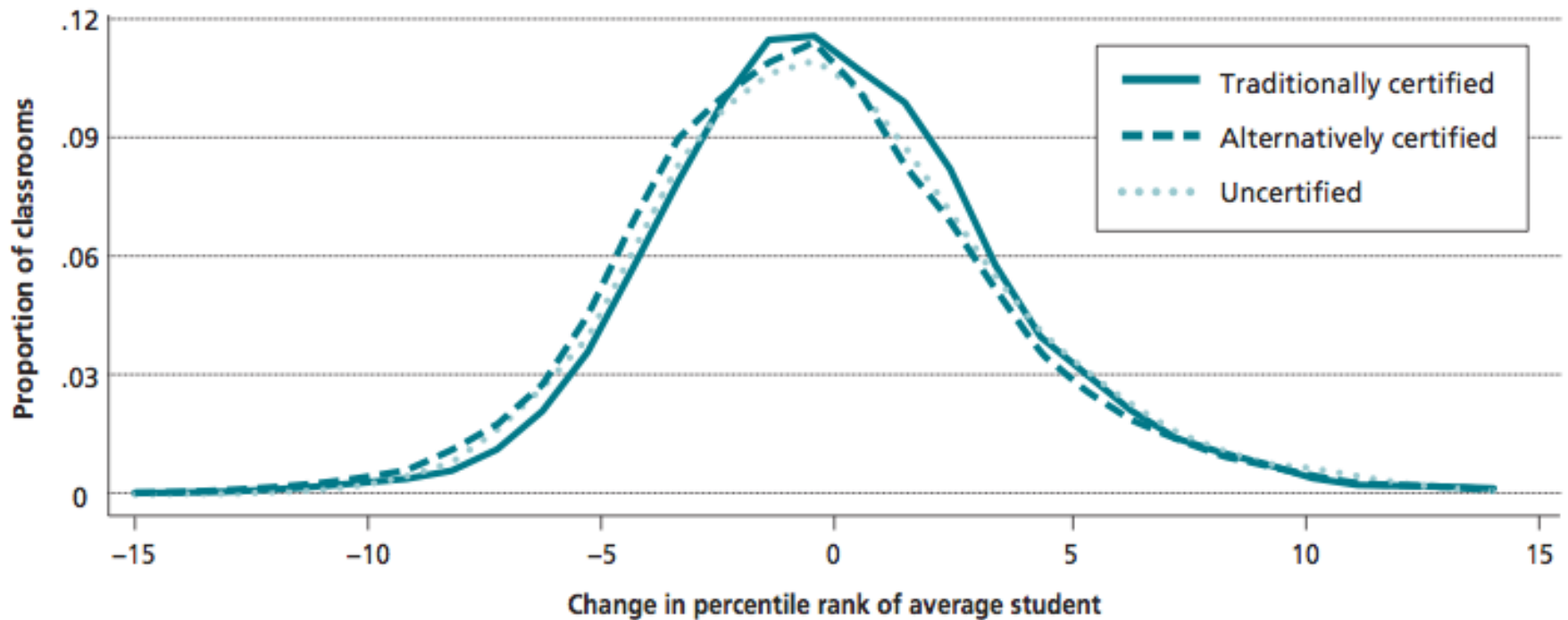Average
Student Growth

Teacher B

Achievement

**Requires:**
1. Annual testing (to measure change in a given teacher's classroom).
2. Accurate lists of students in each teacher's classroom.
3. Linking data on teacher credentials, experience, etc.

Figure 1. Teacher Impacts on Math Performance by Initial Certification

Note: Classroom-level impacts on average student performance, controlling for baseline scores, student demographics, and program participation. LAUSD elementary teachers, grade three through five. For details of how an ordinary least squares regression was used to adjust for student background, baseline performance, and other factors, see the appendix.
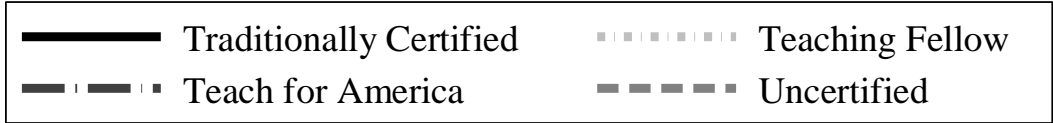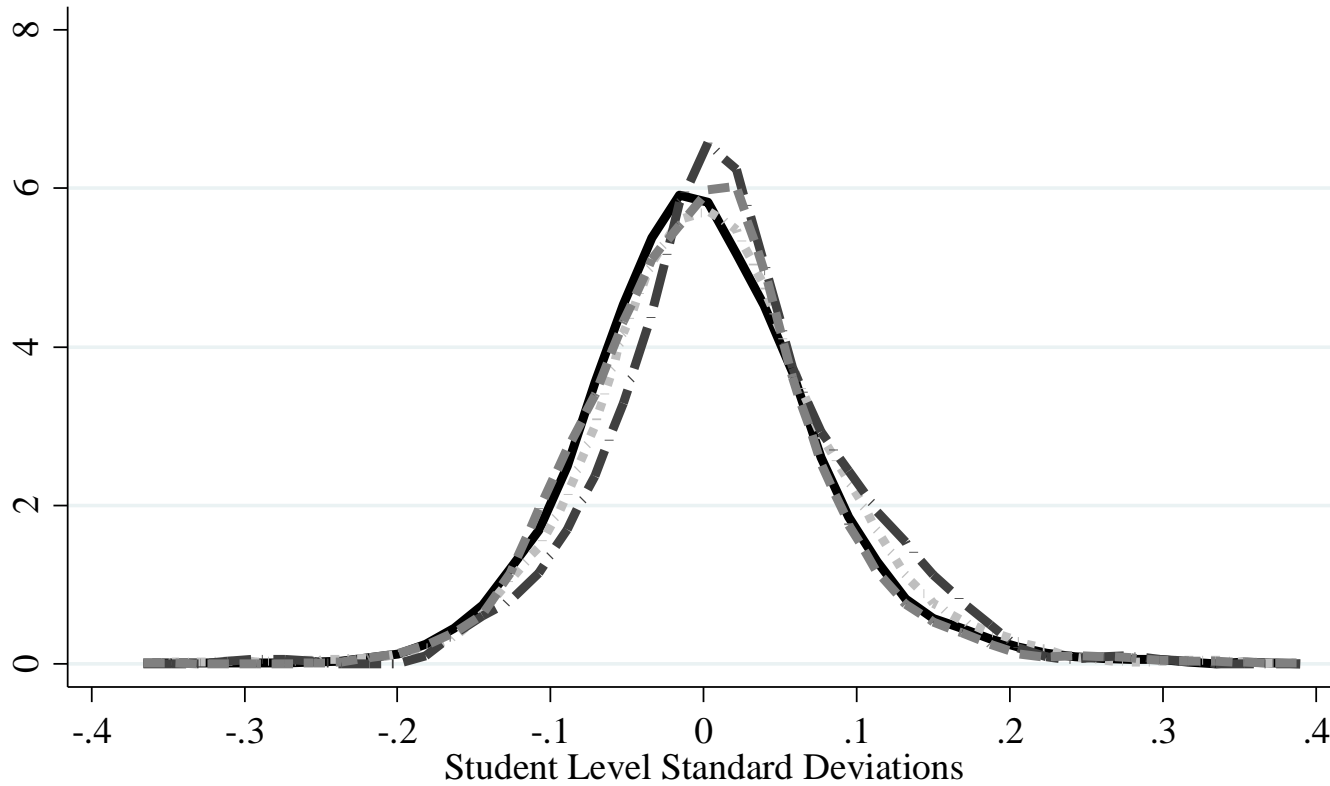
Note: Shown are estimates of teachers' impacts on average student performance, controlling for teachers' experience levels and students' baseline scores, demographics and program participation; includes teachers of grades 4-8 hired since the 1999-2000 school year.

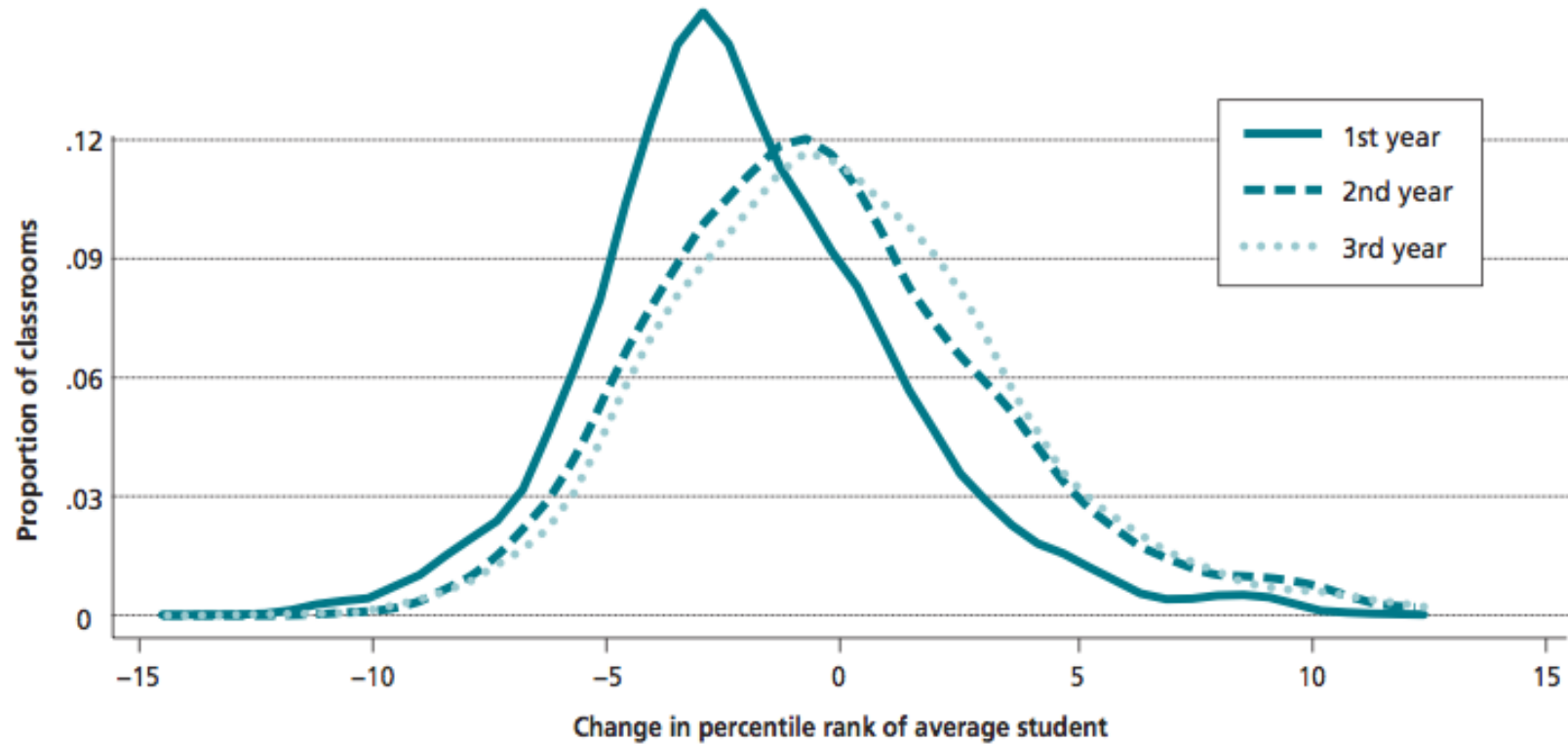Figure 4. Teacher Impacts on Math Performance by Year of Experience

Note: Classroom-level impacts on average student performance, controlling for baseline scores, student demographics, and program participation. LAUSD elementary teachers, < 4 years' experience.

## Lessons Learned in U.S.:

1. Some teachers are much more effective than others in promoting student achievement.

   - Large differences within the same schools.

2. Effectiveness is not related to a teacher's credentials.

   - Even *Teach for America* teachers are not substantially better *on average*.

3. Teachers improve  during first two years teaching, but plateau thereafter.

4. Teacher evaluations have been perfunctory, unrelated to effectiveness and most teachers earn tenure without any meaningful review.

# When to intervene?

Center for Education Policy Research
HARVARD UNIVERSITY

Reform teacher training

Raise Entry Standards

Evaluate and Coach Beginning Teachers

Raise Standards for Tenure

Offer long-term bonuses to retain best performers

Offer bonuses to incentive effort

Recruitment

Tenure Decision

Pre-Service Training

Probation

Teaching Career

Period of high turnover

Low turnover

8

# Where to intervene?

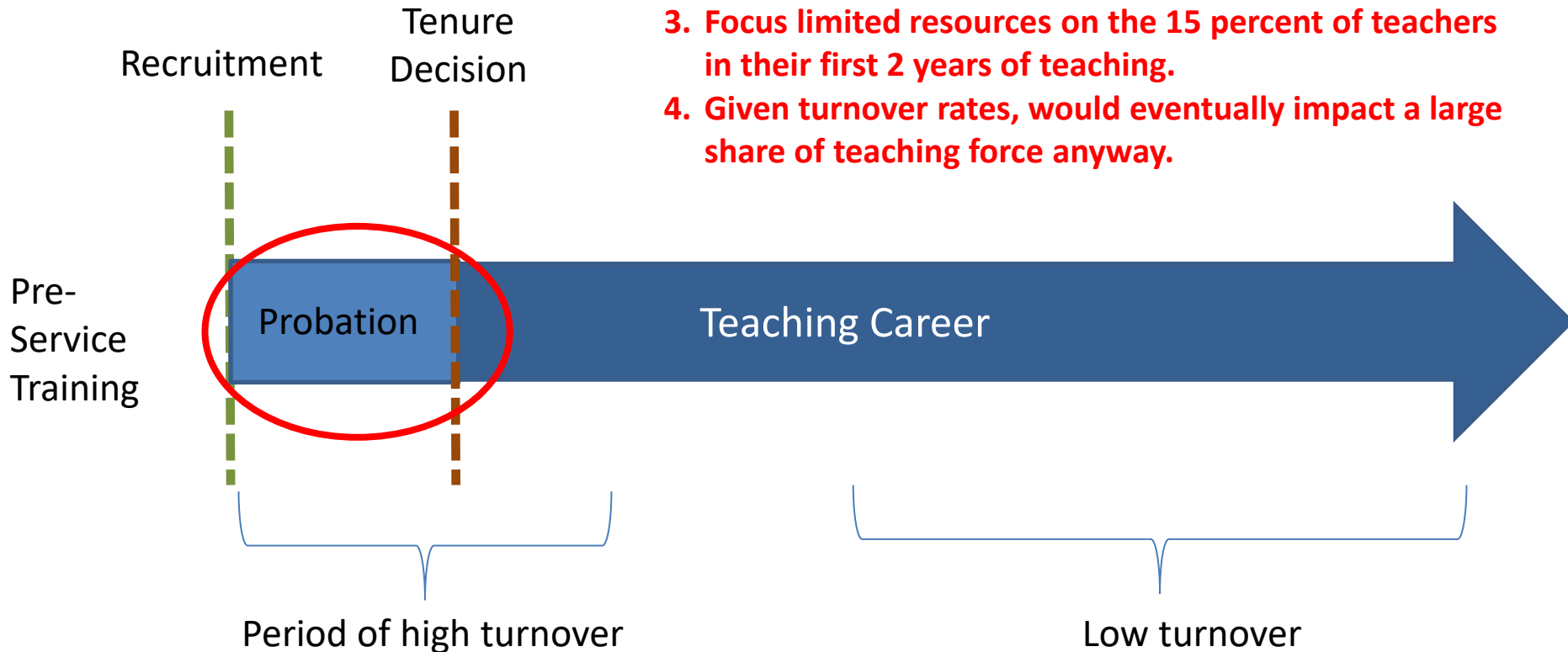**Reasons to focus:**
1. **Allowed under current law.**
2. **Common ground with labor movement.**
3. **Focus limited resources on the 15 percent of teachers in their first 2 years of teaching.**
4. **Given turnover rates, would eventually impact a large share of teaching force anyway.**

Recruitment

Tenure Decision

Pre-Service Training

Probation

Teaching Career

Period of high turnover

Low turnover

# But how to measure performance in the classroom?

- *Measures of Effective Teaching* project
- Largest study of instructional practice ever undertaken.
- Funded by Bill & Melinda Gates Foundation ($50 million)
- 3000 teachers in 6 school districts (2009-10 and 2010-11)
- In 2010-11, teachers were randomly assigned to classrooms

# What to Measure?
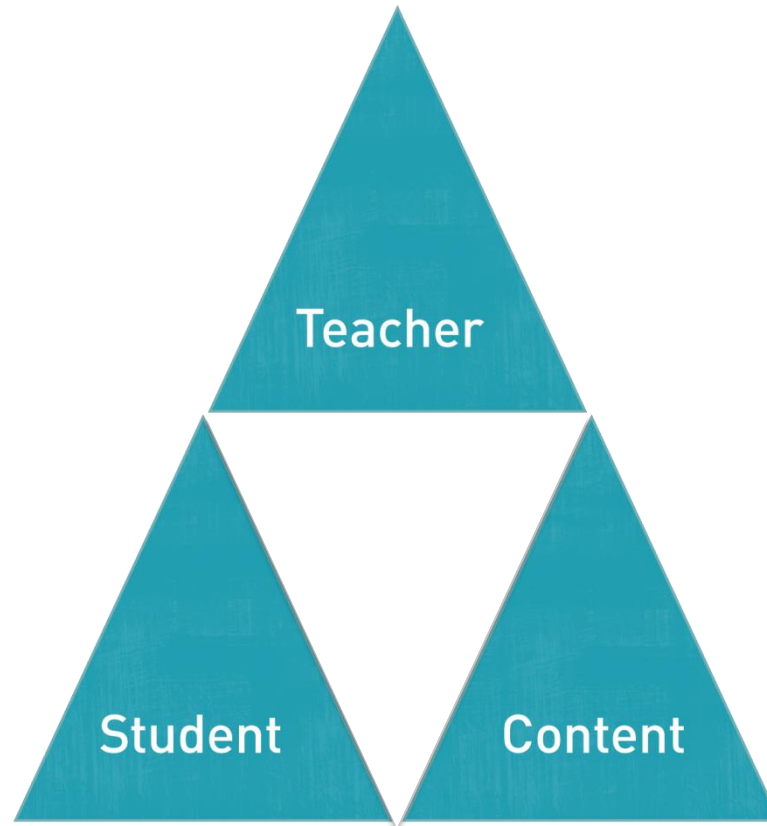
# Example of Guideline for Classroom Observation:

## Framework for Teaching (Danielson)



**Managing student behavior**

**Creating an environment of respect and rapport**

**Engaging students in learning**

**Managing classroom procedures**

**Establishing a culture of learning**

**Using assessment in instruction**

**Using questioning and discussion techniques**

**Communicating with students**

*Unsatisfactory*    *Basic*    *Proficient*    *Distinguished*

| | |
|---|---|
| **Unsatisfactory** | Yes/no Questions, posed in rapid succession, teacher asks all questions, same few students participate. |
| **Basic** | Some questions ask for student explanations, uneven attempts to engage all students. |
| **Proficient** | Most questions ask for explanation, discussion develops/teacher steps aside, all students participate. |
| **Advanced** | All questions high quality, students initiate some questions, students engage other students. |

# Students Can Distinguish Between Teachers
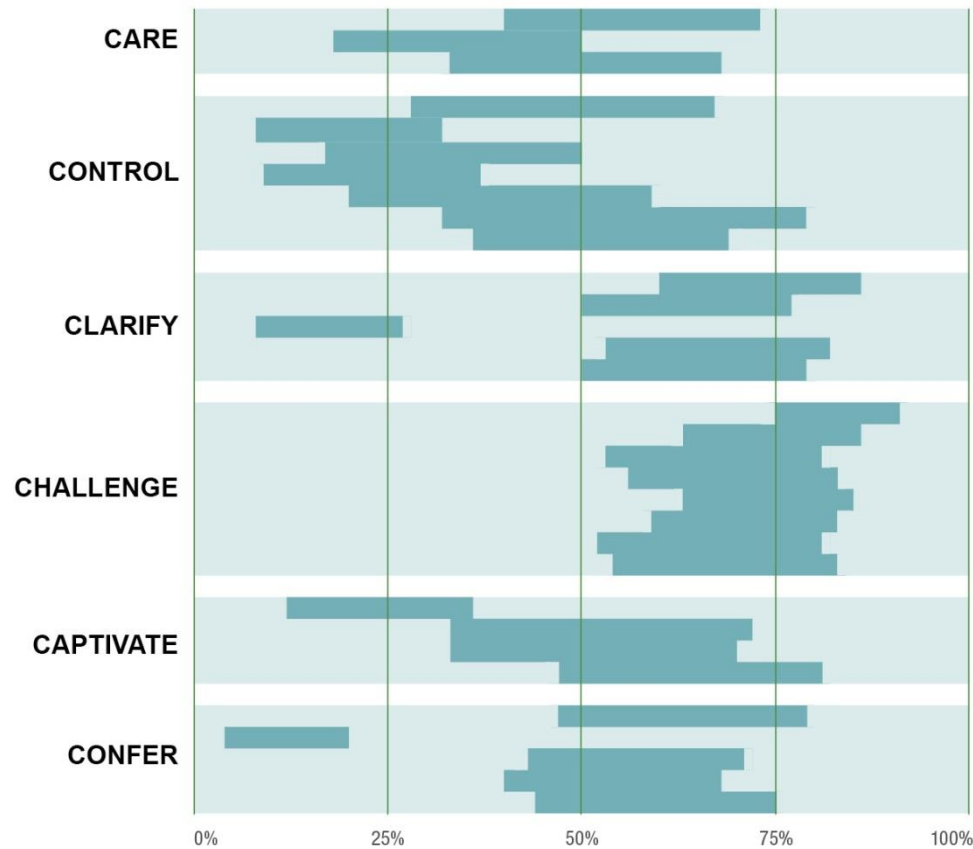
Percent of Students by Classroom Agreeing

# Students Can Distinguish Between Teachers

## Percent of Students by Classroom Agreeing



**CARE**

My teacher in this class makes me feel that s/he really cares about me. — 40% — 73%

My teacher seems to know if something is bothering me. — 22% — 50%

My teacher really tries to understand how students feel about things. — 35% — 68%

CHALLENGE

CAPTIVATE

CONFER

0%   25%   50%   75%   100%

# Students Can Distinguish Between Teachers

Percent of Students by Classroom Agreeing



CARE

Student behavior in this class is under control. — 30% — 67%

I hate the way that students behave in this class. — 10% — 32%

Student behavior in this class makes the teacher angry. — 17% — 50%

**CONTROL** — Student behavior in this class is a problem. — 9% — 37%

My classmates behave the way my teacher wants them to. — 20% — 57%

Students in this class treat the teacher with respect. — 33% — 79%

Our class stays busy and doesn't waste time. — 36% — 69%
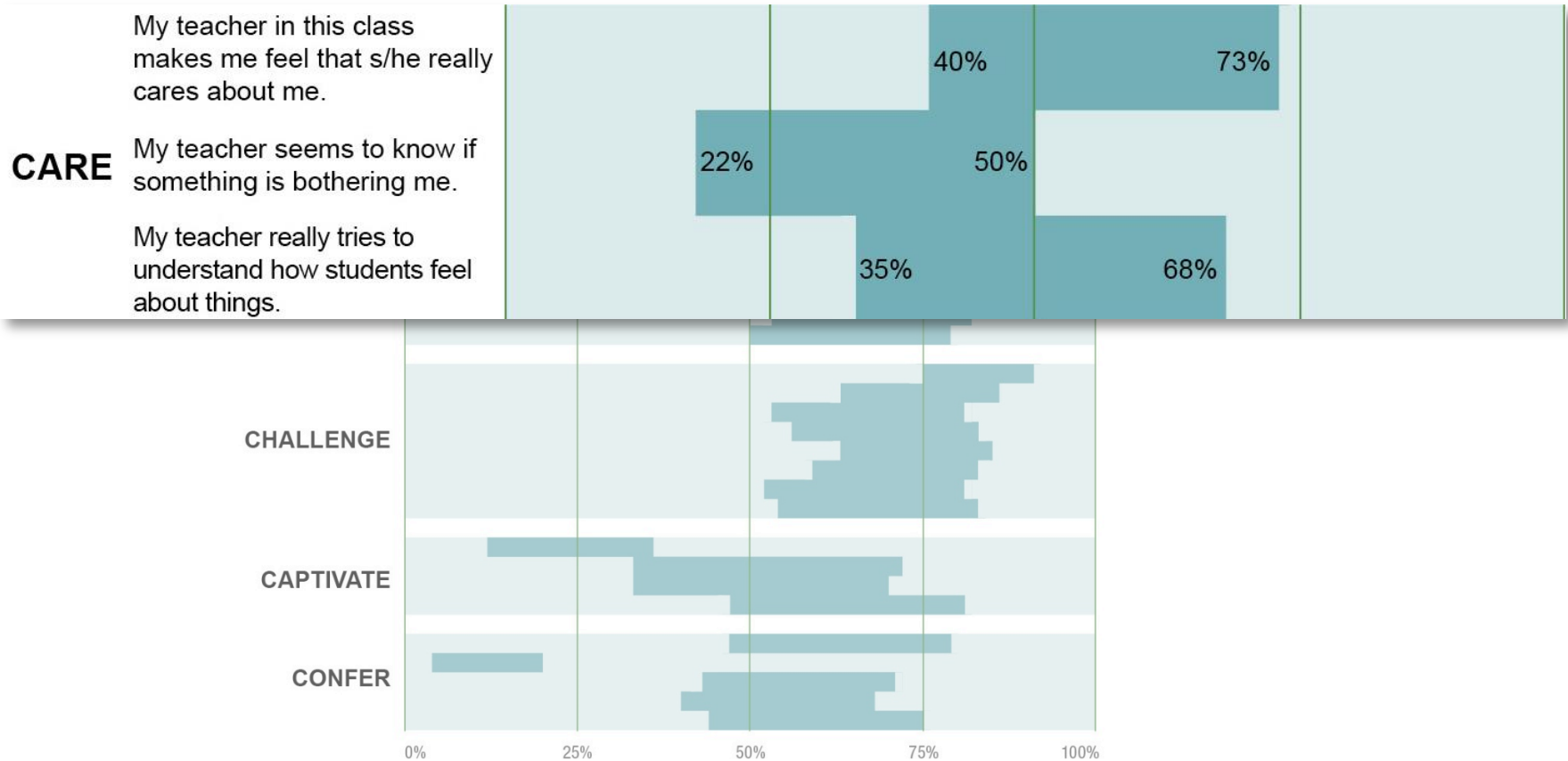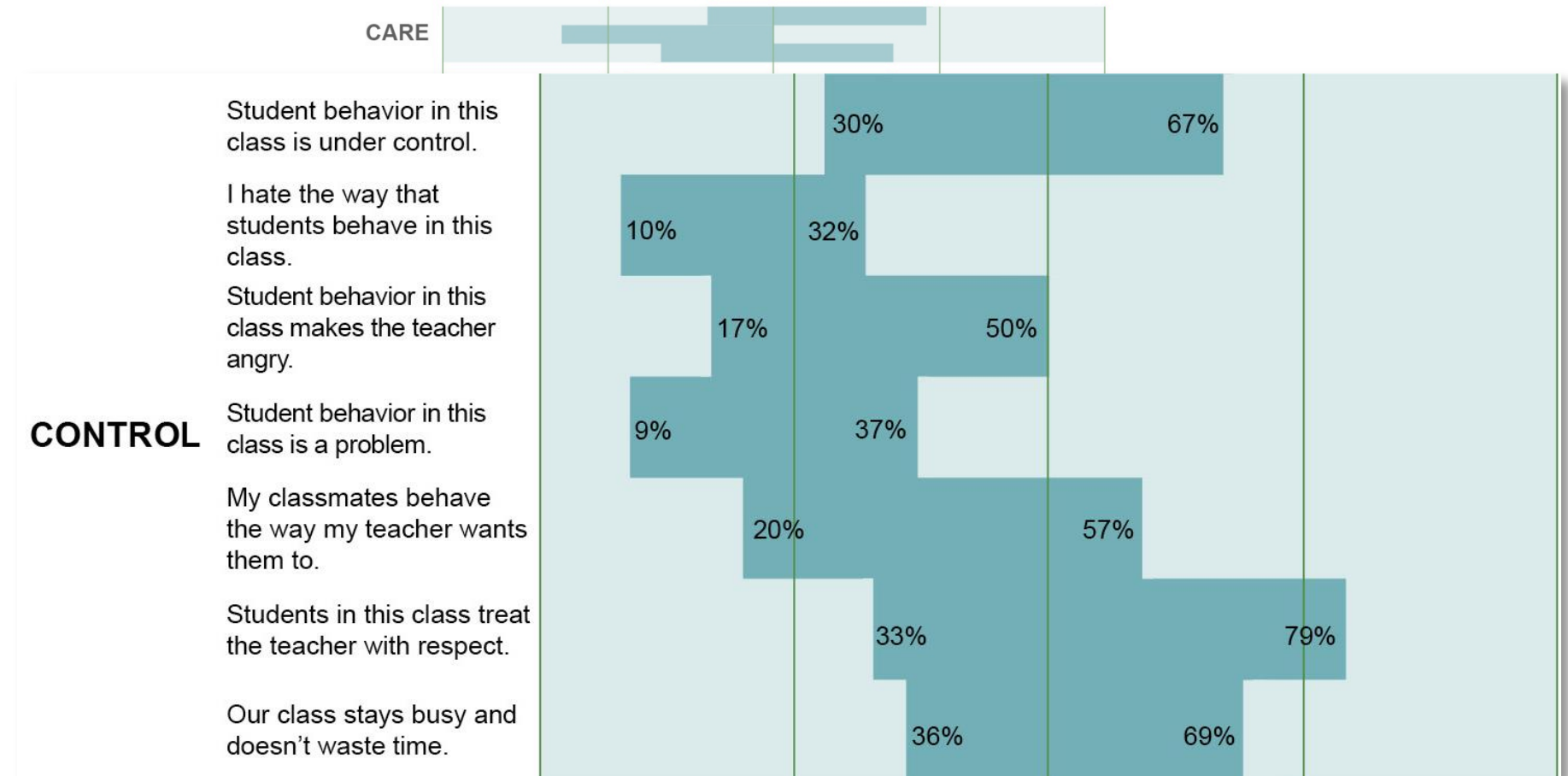
# Students Can Distinguish Between Teachers

Percent of Students by Classroom Agreeing

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Percent of Students by Classroom Agreeing

**CHALLENGE**

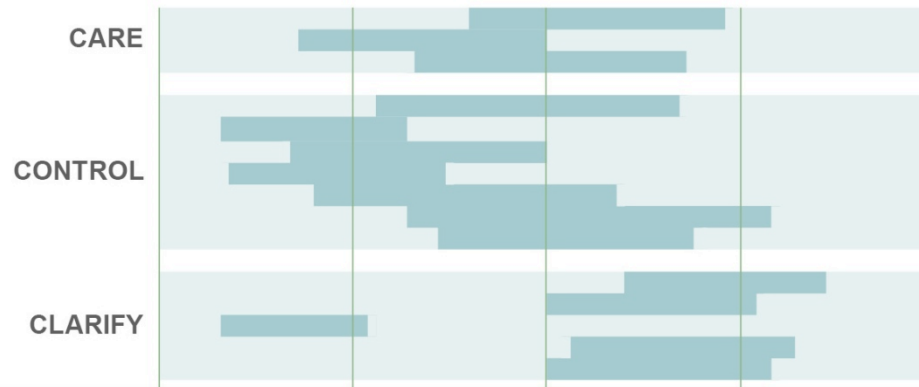| Statement | | |
|---|---|---|
| My teacher asks questions to be sure we are following along when s/he is teaching. | 75% | 93% |
| My teacher asks students to explain more about answers they give. | 63% | 86% |
| In this class, my teacher accepts nothing less than our full effort. | 53% | 81% |
| My teacher doesn't let people give up whe the work gets hard. | 56% | 83% |
| My teacher wants us to use our thinking skills, not just memorize things. | 63% | 85% |
| My teacher wants me to explain my answers — why I think what I think. | 59% | 83% |
| In this class, we learn a lot almost every day. | 52% | 81% |
| In this class, we learn to correct our mistakes. | 56% | 83% |
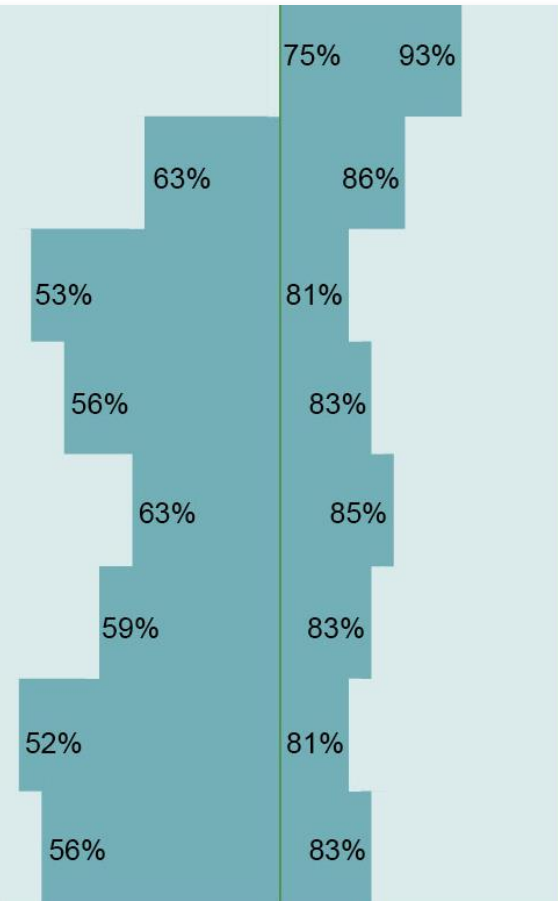
# Students Can Distinguish Between Teachers

Percent of Students by Classroom Agreeing

# Students Can Distinguish Between Teachers

Percent of Students by Classroom Agreeing



CARE

CONTROL

CLARIFY

**CONFER**

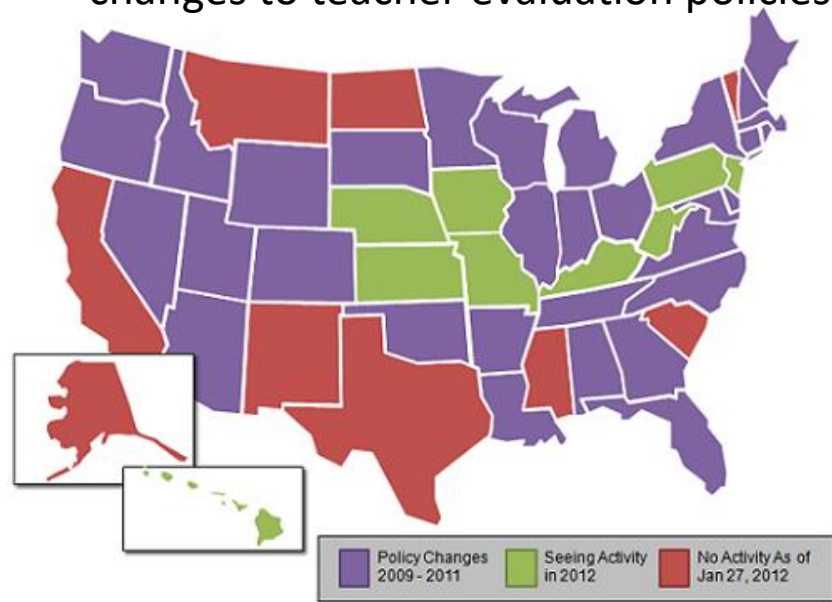| | | |
|---|---|---|
| My teacher wants us to share our thoughts. | | 47% ▇ 79% |
| Students get to decide how activites are done in this class. | 5% ▇ 20% | |
| My teacher gives us time to explain our ideas. | | 43% ▇ 73% |
| Students speak up and share their ideas about class work. | | 40% ▇ 68% |
| My teacher respects my ideas and suggestions. | | 46% ▇ 75% |

# Results so far:

- A teacher's track record of achievement gains is the best single predictor of future achievement gains.

- Observers <u>can</u> identify practices which are associated with student achievement gains, but reliability requires multiple observers and multiple observations.

- Student surveys can provide feedback on specific aspects of their classroom experience, which is both reliable and predictive of student achievement.

- Teachers with higher combined scores on (1) achievement gains, (2) student surveys and (3) classroom observations had students with better outcomes on all measures.

21

# Research can provide tremendous leverage.

42 States + DC have actual or pending changes to teacher evaluation policies[*].



46 states plus DC apply for RTTT

## $4.5 billion

| Policy Changes 2009 - 2011 | Seeing Activity in 2012 | No Activity As of Jan 27, 2012 |

Source: Ed Week blog, The State of Teacher Evaluation, part 2, 1/27/12. Total teacher compensation in affected states: **$220 b/Yr**

# Resources:

1. Observation instruments

2. Student surveys (MET version of Tripod survey)

3. Rater certification software (August 2012)

4. More reports in January, 2013.

www.metproject.org

# Stanford 9 Open-Ended Reading

(Example)

## Get the Big Picture

How would you describe Carl to someone who had not read this story? Use details from the story to support your ideas.

_____

_____

_____

### Carl's Discovery by Sharon Phillips Denslow

Carl was helping his father pull weeds in the yard when he found a toad sitting in a hole in the middle of the yard. Carl tried gently pulling it out of its hole, but the toad swelled itself up and dug in its back legs.

"It's a little early yet for the toad to come out," Carl's father said.

It was warmer the next morning, and Carl found the toad sitting beside its hole. Just before dark, Carl checked on the toad again. It was back inside the hole.

The next morning when Carl went outside, frost had turned the grass into tiny feather icicles. The toad was snug in its hole.

"You're a pretty smart toad," said Carl. A chilly wind blew for two days. Carl put a curved white seashell in front of the toad's hole to keep the wind from whistling down it.

By the next weekend, the grass was scraggly enough for Carl's father to get out the lawn mower.

"Why doesn't the toad leave the hole?" Carl asked his father.

"It's warm enough now."

"It's still cold at night," answered his father.

Gradually the ground grew warmer, and spring flowers began to bloom. One day Carl went barefoot for the first time. He noticed bugs flying and buzzing around the flowers." You have something to eat now," he told the toad. The next morning Carl looked for the toad and finally found it at the edge of the garden, in the shade of a young tomato plant. Carl grinned. Near the big toad sat several small toads no bigger than Carl's fingernail.

_Sharon Phillips Denslow has written several books for children, including_ Riding with Aunt Lucy. _She also works in a library._

## Take a Closer Look

Carl said, "You're a pretty smart toad." Why did he say that?

_____

_____

_____

## Be a Critic

Do you think the author of this story knows much about toads?

_____

_____

_____

Why do you think that?

_____

_____

# Balanced Assessment in Mathematics

## (Example)

### Fish Ponds

This problem gives you the chance to:
- find a number pattern in real spatial context and express the rule
- extend the rule to two variables



4 ft

4 ft

Fish Pond

Fish Pond surrounded
by paving stones
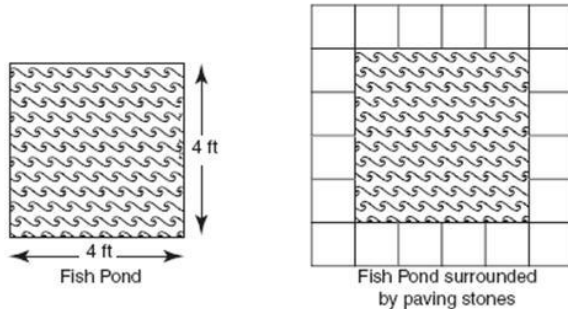
Chris works at a garden center that sells square fish ponds and paving stones.

The paving stones are squares with sides one foot long.

1. Use the diagram above to figure out how many paving stones are needed to surround a fish pond that is 4 feet by 4 feet. _____

2. Chris begins to make a table to show how many paving stones are needed to surround square ponds of different sizes. Fill in the empty boxes in the table.

| Side of pond in feet | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Number of paving stones | 8 | | | | |

3. How many paving stones are needed to surround a fish pond that is 20 feet by 20 feet? Explain how you figured it out.

_____

_____

_____

4. Chris has 48 paving stones. Find the size of the largest square pond the paving stones can surround. Explain how you figured it out.

_____

_____

_____

_____

_____

5. The garden center sells many different sizes of square fish ponds.

Write down a rule that will help Chris figure out how many paving stones are needed to surround square ponds of different sizes.

_____

_____

_____

_____

6. The garden center decides to sell rectangular ponds.

Find a rule that will help Chris figure out how many paving stones are needed to surround rectangular ponds of different sizes.

_____

_____

_____

_____
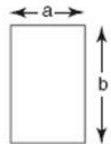
# What underlies the performance differences?

Effort 

or

## Talent and Acquired Skill


*Can skill be certified <u>before</u> observing actual performance?*

Implications:
Pay for actual results (ex post)

Yes

No

Implications:
Better recruitment
Better pre-service training
Higher entry standards

Implications:
Evaluate probationary teachers
Higher standards for tenure
Commit to long-term bonuses for high performers
Tailor training to current ability