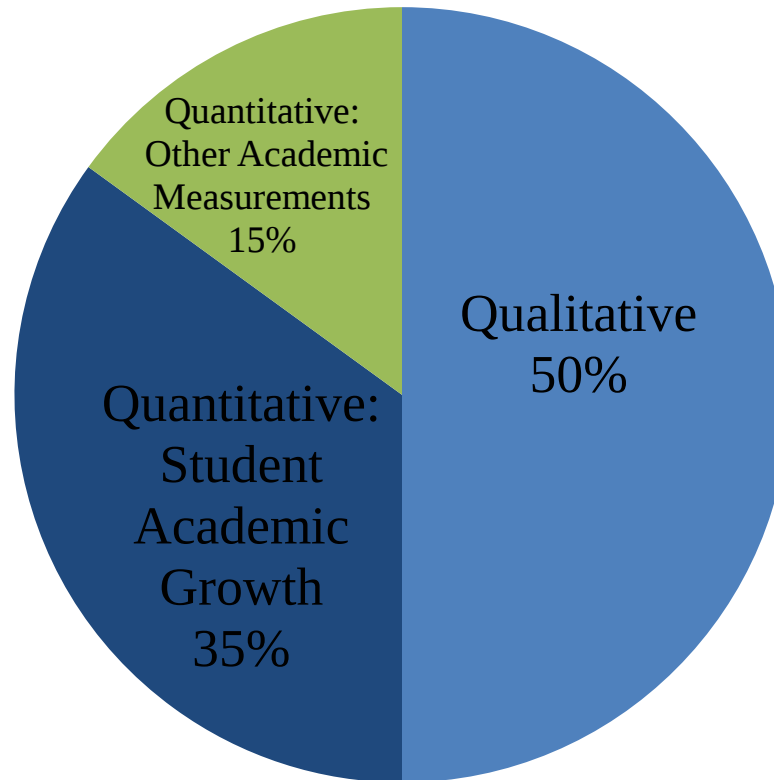


**REACH<sup>3</sup>H**

# Statutory Requirements



# Quantitative Measures (35% of Total TLE)

The State Board voted to use a Value Added Model to measure student academic growth for teachers and leaders in grades and subjects for which multiple years of standardized test data exist.



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# 5 Myths about Value-Added Models

## MYTH

- Value-added isn't fair to teachers who work in high-need schools where students tend to lag far behind academically.

## FACT

- Value-added controls for students past academic performance and demographic factors.
- Value-added looks at progress over a course of a school year and not at a single test score on a single day.

# 5 Myths about Value-Added Models

## MYTH

- Value-added scores are too unpredictable from year-to-year to be trusted.

## FACT

- Value-added scores are about as stable as batting averages in baseball and many other widely-accepted performance measures.
- Teachers who earn high value-added scores early in their career rarely go on to earn low scores later, and vice versa.

# 5 Myths about Value-Added Models

## MYTH

- There is no research behind value-added.

## FACT

- Value-added has been researched for nearly three decades by leading academics and economists.
- Value-added models have been used by school districts beginning in the 1990's.

# 5 Myths about Value-Added Models

## MYTH

- Using value-added means that teachers will be evaluated based solely on standardized test scores.

## FACT

- Oklahoma Teacher and Leader evaluations are a system. The total evaluation will take into account many factors in determining the final evaluation score.
  - 50% Qualitative Measures
  - 35% Value-Added Score
  - 15% Other Academic Measures

# 5 Myths about Value-Added Models

## MYTH

- Value-added is useless because it is imperfect- it has a margin of error.

## FACT

- No measure of teacher performance is perfect. However, a value-added model provides crucial information on how well teachers are doing at their most important job-helping students learn.

# **Educator Evaluation: Value-Added Model Selection Process**

**Foundation for Excellence in Education**

Christy Hovanetz, Ph.D.  
Senior Policy Fellow

April 4, 2012

# Agenda

- Purpose and definition of value-added
- Process for selecting a value-added model



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# Purpose for Using Growth Models

- Schools have students who enter with different levels of proficiency and characteristics
- Therefore, simply compare status scores across schools is not reasonable because the status scores simply reflect the students who entered the school, not the impact of the school



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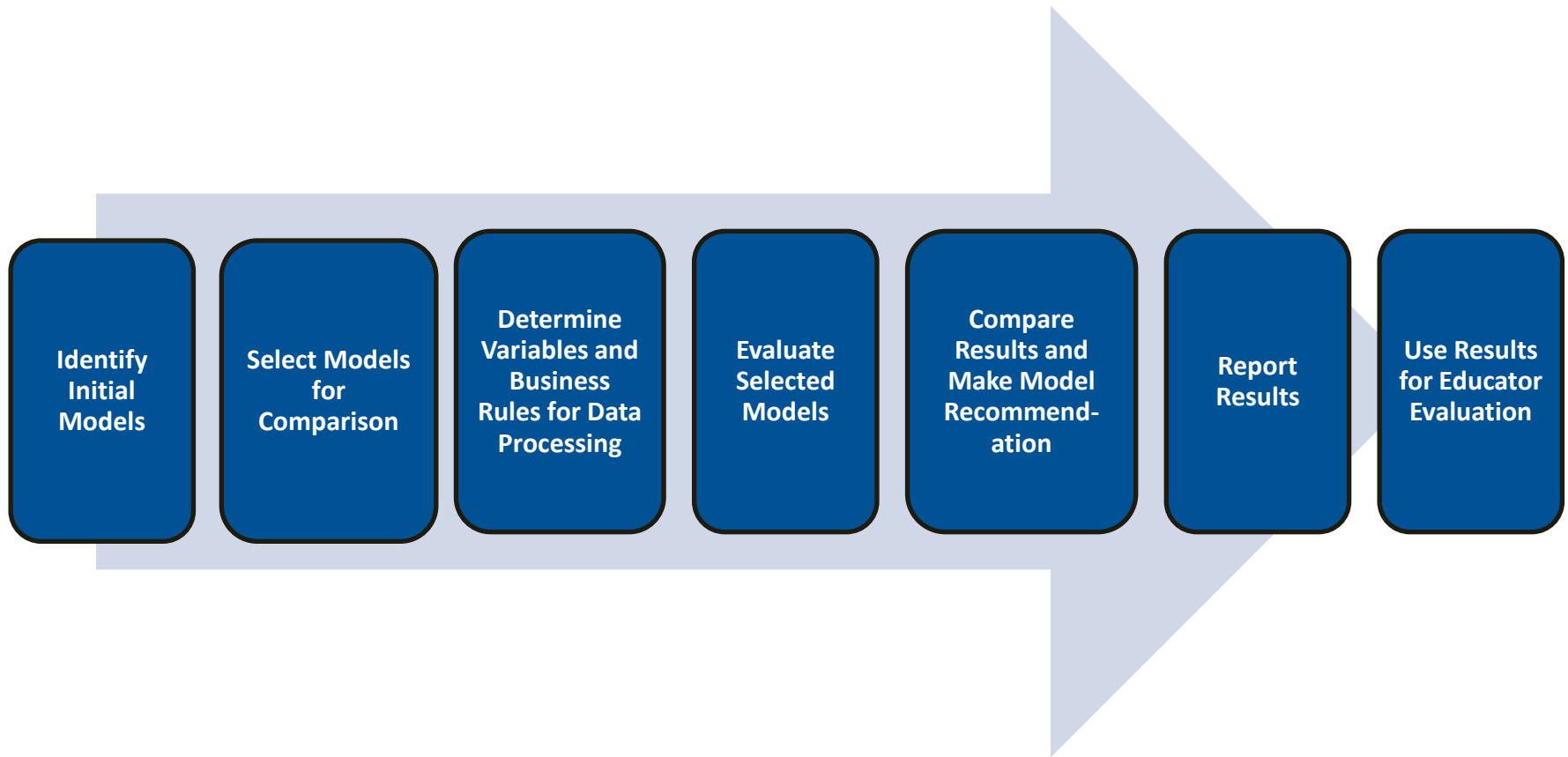
# Purpose for Using Growth Models

- Growth models are designed to mitigate the influence of differences among the entering students
- In other words, growth models try to “level the playing field” so that teachers do not have advantages or disadvantages simply as a result of the students in their class



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# Steps to Developing a Statewide Value-Added Model



**REACH<sup>3</sup>**

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# Different Methods for Measuring Growth

## Status Methods

- Simply compute averages or percent proficient using a single year of test score data
- Comparisons can be made from one year to the next, but these are based on different groups of students

## Simple Growth Models

- Measure change in a student's performance from test to test (e.g., gain from grade 3 to 4)

## Value-Added Models

- Statistical model estimates the portion of the student's gain that is attributable to the school or teacher

## Student Growth Percentiles

- The quantile model estimates “growth percentiles” among students who started at a similar level
- Performance is judged entirely relative to that of other students, not against a learning criterion



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# Status Models

Using one year of data comparisons can be made between 2010 third graders and 2011 third graders to determine if there was “growth” in the percent of proficient third graders

| Subject | Grade | 2010 percent proficient | 2011 percent proficient | “Growth” Improvement |
|---------|-------|-------------------------|-------------------------|----------------------|
| Reading | 3     | 81                      | 83                      | 2                    |
| Reading | 4     | 75                      | 78                      | 3                    |
| Reading | 5     | 72                      | 71                      | -1                   |



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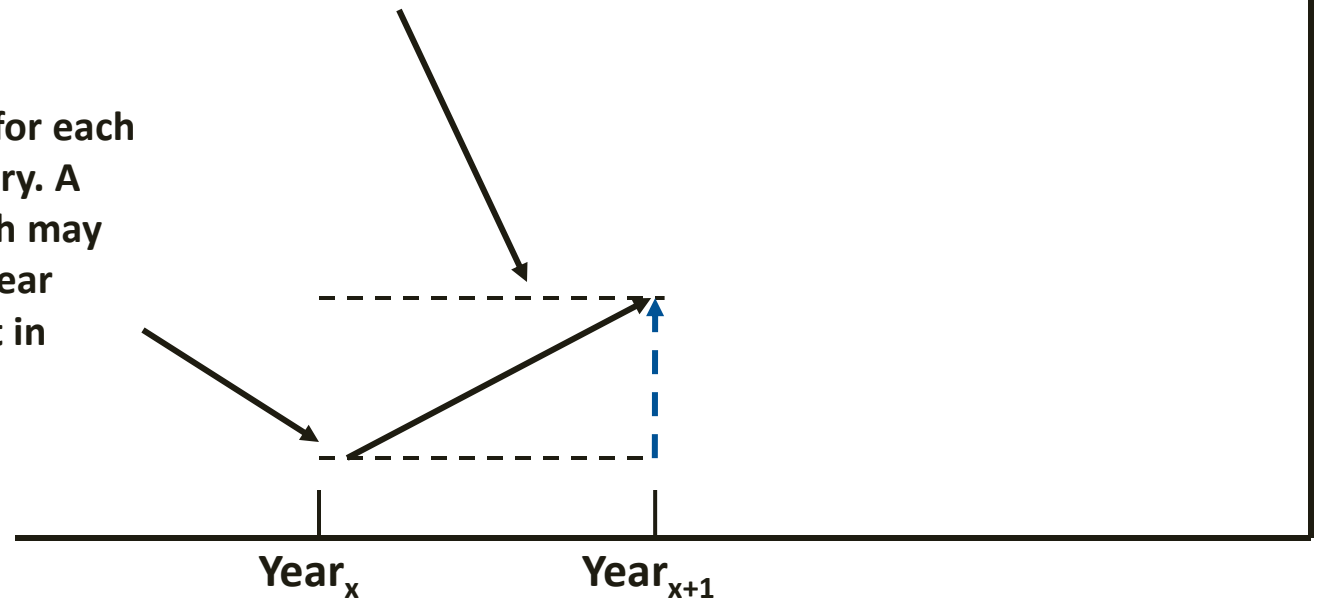
# Growth Models

## Growth

(Simplified “generic” example)

Performance after a specified period of time (i.e., in one school)

At least two scores for each student are necessary. A starting point (which may be more than one year earlier) is important in a growth model.



Source: CCSSO Policymaker’s Guide to Growth Models

# Value-Added Models

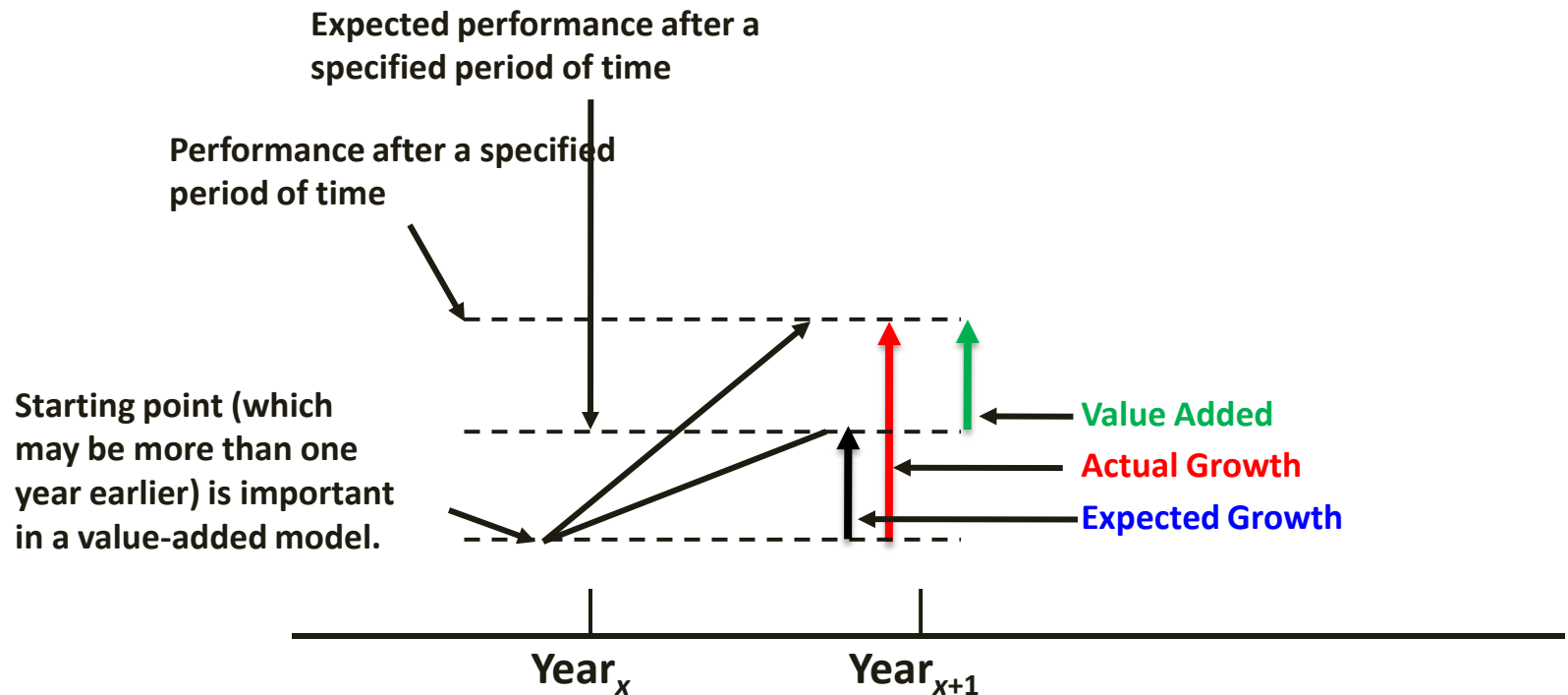
- All value-added models are growth models.
- A value-added model must use at least two test scores for each student.
- A statistical model estimates the *portion* of the student's gain that is attributable to the classroom teacher.
- Level the playing field by accounting for differences in the proficiency and characteristics of students assigned to teachers



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# Value-added models

## Value-Added Models (Simplified “generic” example)



Source: CCSSO Policymaker's Guide to Growth Models

# Student Growth Percentiles

**Growth targets are determined based on the performance of other schools in the state**

- Growth expectations are set annually
- Growth expectations shift based on statewide performance

| Percentile                  | All Students - Median Growth |      |      |      |
|-----------------------------|------------------------------|------|------|------|
|                             | 2009                         | 2010 | 2011 | 2012 |
| 5 <sup>th</sup> percentile  | -50                          | -55  | -49  | ?    |
| 40 <sup>th</sup> percentile | 15                           | 11   | 17   | ?    |
| 55 <sup>th</sup> percentile | 26                           | 24   | 29   | ?    |
| 60 <sup>th</sup> percentile | 30                           | 26   | 31   | ?    |
| 90 <sup>th</sup> percentile | 40                           | 35   | 42   | ?    |



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# Advantages of a value-added model

- Teachers teach classes of students who enter with different levels of proficiency and possibly different student characteristics
- Value-added models level the playing field by accounting for differences in the proficiency and characteristics of students assigned to teachers



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# Advantages of a value-added model

Value-added models are designed to mitigate the influence of differences among the entering classes; teachers do not have advantages or disadvantages simply as a result of the students who attend a school and are assigned to a class



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# Contact Information

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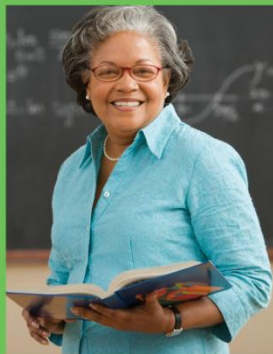
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# Value-Added: Deepening Your Understanding

# Who is Battelle for Kids?

- Not-for-profit, educational-improvement organization that believes in:
  - **The Right People**
    - Having highly effective educators throughout the system to maximize student opportunities.
  - **The Right Measures**
    - Measuring Educator and Employee Effectiveness
  - **The Right Practices**
    - Researching and Supporting Effective Educational Practices
  - **The Right Messages**
    - Engaging Stakeholders for Strategic Improvement and Managing Change.

# Who is Battelle for Kids?

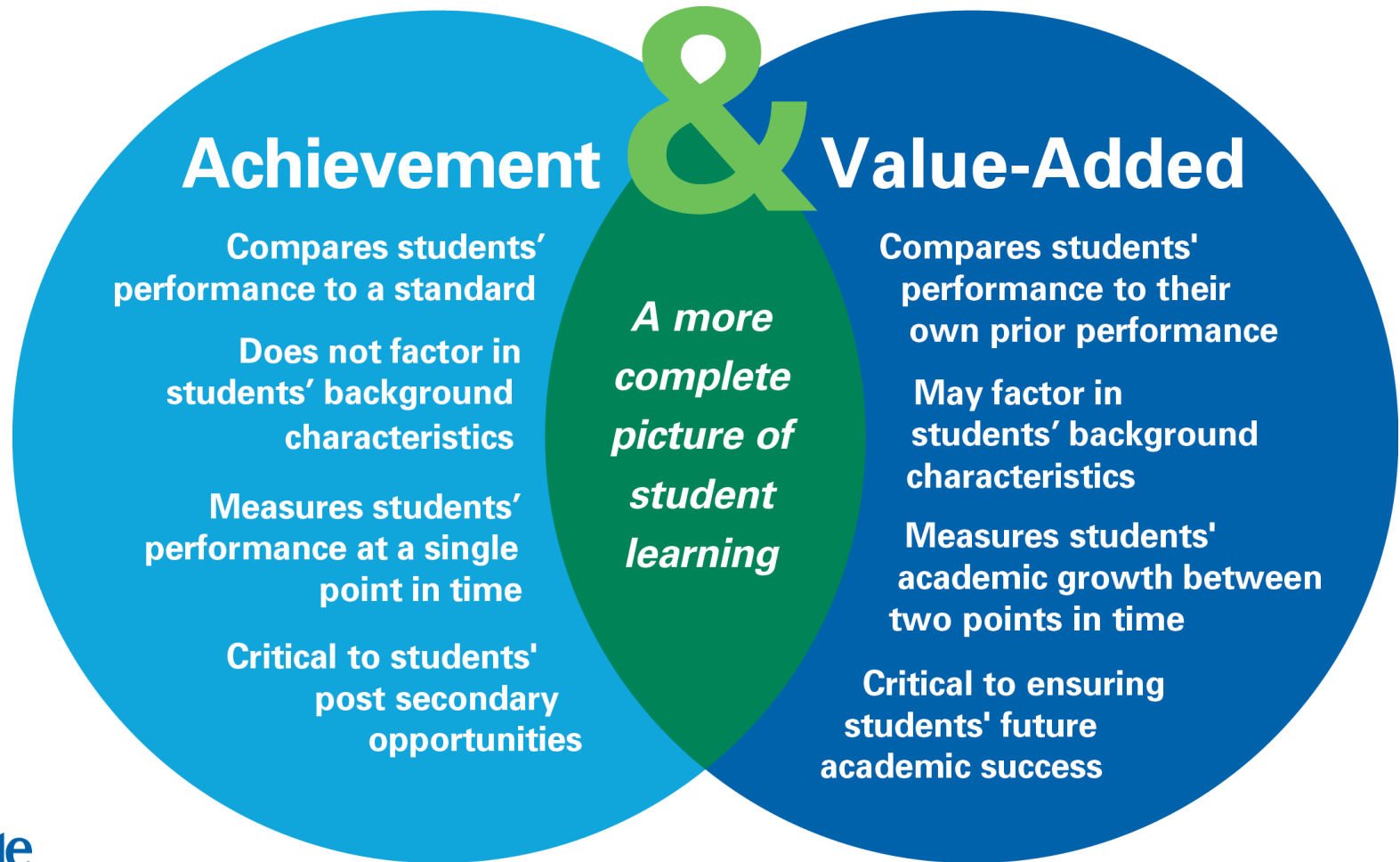
- Not-for-profit, educational-improvement organization that believes in:
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  - **The Right Practices**
    - Researching and Supporting Effective Educational Practices
  - **The Right Messages**
    - Engaging Stakeholders for Strategic Improvement and Managing Change.

# Technical: Value-Added

## Self-Assessment



# The Power of Two



# Opportunity

**To provide a clearer understanding of where your strengths and challenges are allowing you to create more focused improvement efforts**

Examples:

*Your district 6<sup>th</sup> grade math performance is low, but your schools that are configured (K-6 or K-8) are show positive value added results.*

*Your previously high achieving 7<sup>th</sup> grade reading students in your building are not meeting growth predictions.*

# Opportunity

**To evaluate where your curriculum or programs are being more or less effective**

Examples:

*Your math value-added results across an entire grade level in your district demonstrated low value-added.*

*Students in your gifted magnet school demonstrated less academic growth than similar students in traditional schools.*

# Opportunity

**To improve your placement of teachers and students**

Examples:

*Your value-added results indicate that 4 of your most ineffective math teachers are in the same middle school.*

*A 4<sup>th</sup> grade teacher in your building has very high value-added effects in math but very poor value-added effects in reading.*

# An opportunity

**To maximize the impact of your best teachers and principals**

Examples:

*You identify really highly effective teachers and share what makes them successful with others.*

*You identify new ways use highly effective teachers to reach more students, high needs students, or lead the development of other teachers.*

# An opportunity

**To target professional development at needs of the teacher or group of teachers**

Examples:

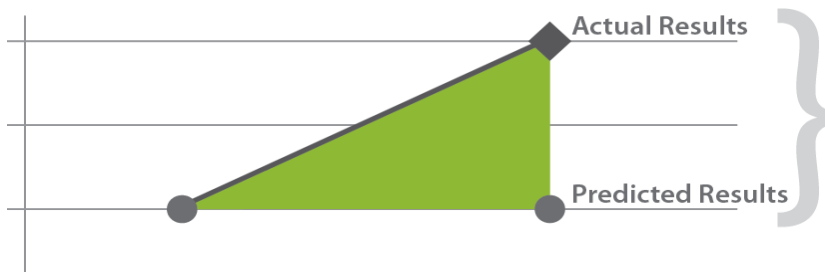
*Develop protocols that lead teachers through a data inquiry, root cause analysis, and goal setting process.*

*Align professional development to your instructional framework and promote collaboration across the organization.*

# Deepening Your Understanding

- Value-Added
- Predictions
- Control Variables

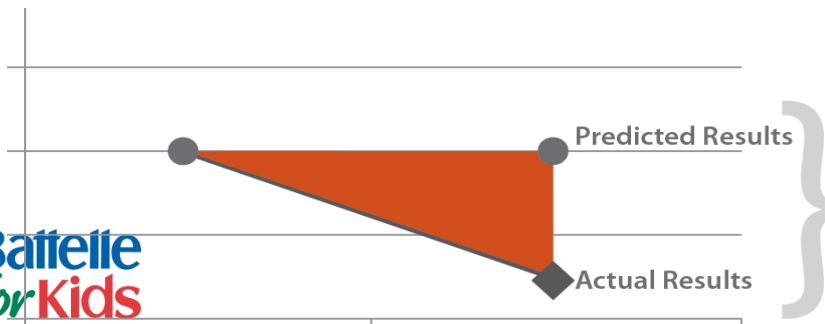
# Value-Added: Actual minus Predicted



**Value-Added Above Prediction**



**Value-Added At Prediction**



**Value-Added Below Predicted**

# Prediction



Predictions are more  
like magic  
than science.

# Predictor Tests: Pre/Prior/Post

- In subjects that are contiguously tested, such as **reading and math**, it is easy to understand how:
  - A **prior reading** test can be predictive of **reading**
    - E.g., 3<sup>rd</sup> grade reading predicts 4<sup>th</sup> grade reading
  - A **prior math** test can be predictive of **math**
    - E.g., 4<sup>th</sup> grade math predicts 5<sup>th</sup> grade math

# Prediction – You Try!

- What about 5<sup>th</sup> grade science?
  - As a science teacher in 5<sup>th</sup> grade, what might you predict about the following students' performance in your class?
    - Select from: Strong, Average, Struggle

|                | Valerie | Ann | Matt |
|----------------|---------|-----|------|
| Reading (1000) | 755     | 275 | 450  |
| Science        | ?       | ?   | ?    |

*How certain are you? Would more information be helpful?*

# Prediction – Try again!

- Let's expand the information:
  - Select from: **Strong**, Average, **Struggle**

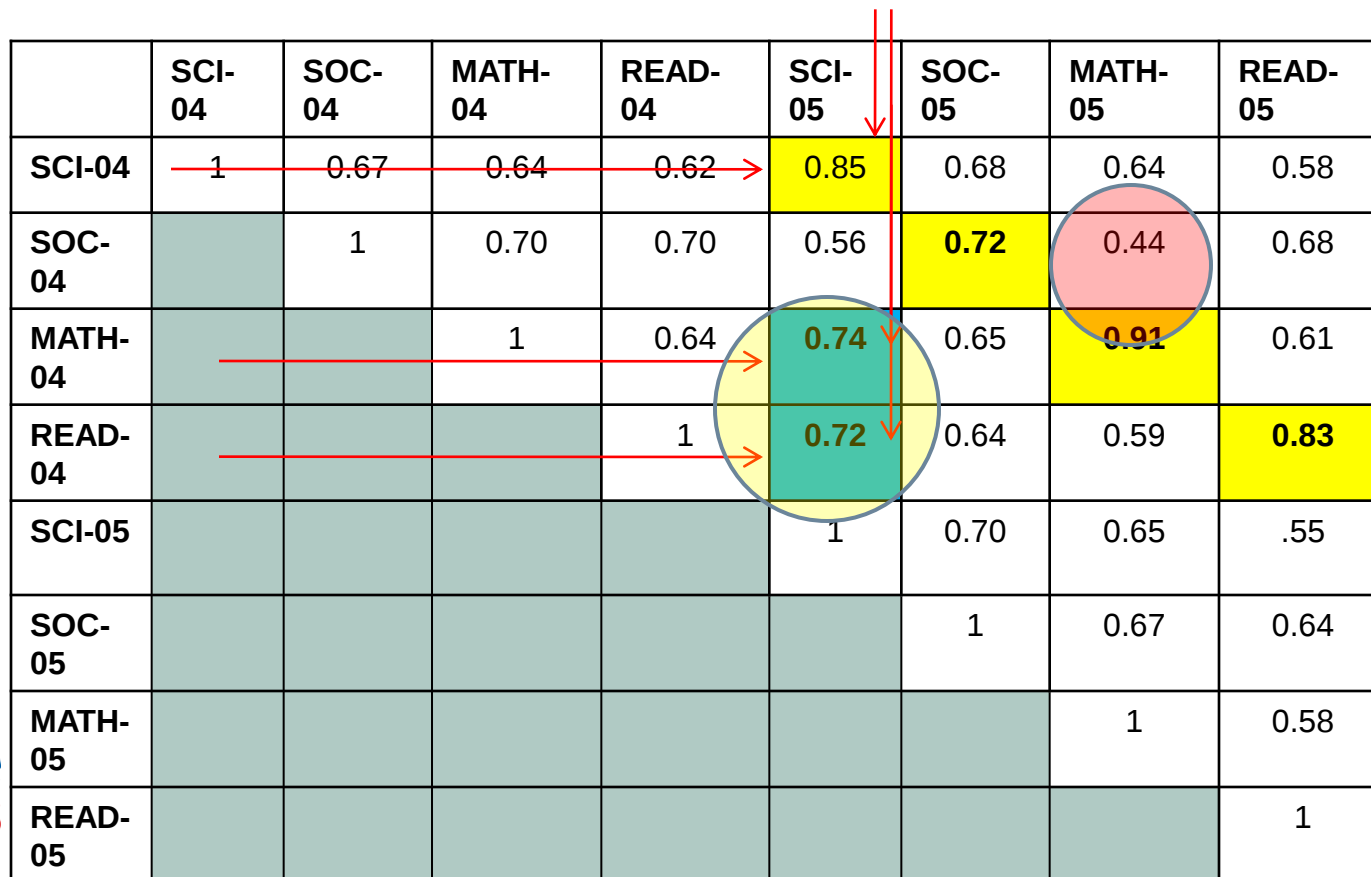
|         | Valerie | Ann | Matt |
|---------|---------|-----|------|
| Reading | 755     | 275 | 450  |
| Math    | 720     | 220 | 775  |
| Science | ?       | ?   | ?    |

Did your answer change for any student?

How confident are you?

# Predictors for Non-Contiguous

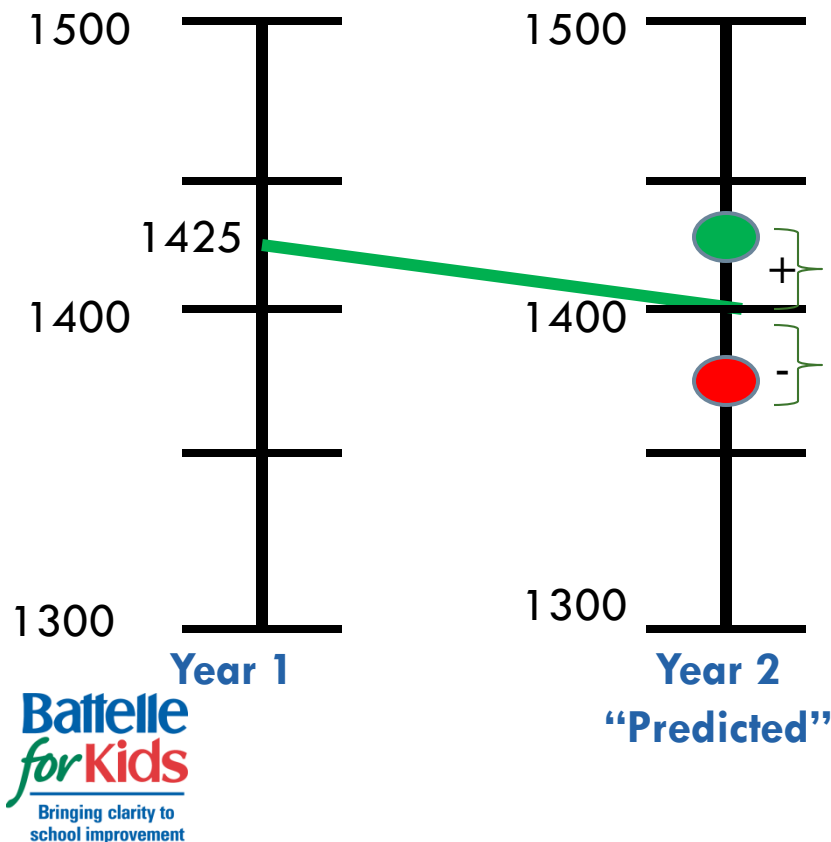
- Predictor tests must have a strong relationship to the test being analyzed.



|         | SCI-04 | SOC-04 | MATH-04 | READ-04 | SCI-05 | SOC-05 | MATH-05 | READ-05 |
|---------|--------|--------|---------|---------|--------|--------|---------|---------|
| SCI-04  | 1      | 0.67   | 0.64    | 0.62    | 0.85   | 0.68   | 0.64    | 0.58    |
| SOC-04  |        | 1      | 0.70    | 0.70    | 0.56   | 0.72   | 0.44    | 0.68    |
| MATH-04 |        |        | 1       | 0.64    | 0.74   | 0.65   | 0.91    | 0.61    |
| READ-04 |        |        |         | 1       | 0.72   | 0.64   | 0.59    | 0.83    |
| SCI-05  |        |        |         |         | 1      | 0.70   | 0.65    | .55     |
| SOC-05  |        |        |         |         |        | 1      | 0.67    | 0.64    |
| MATH-05 |        |        |         |         |        |        | 1       | 0.58    |
| READ-05 |        |        |         |         |        |        |         | 1       |

# Let's Look at SIMPLE Prediction

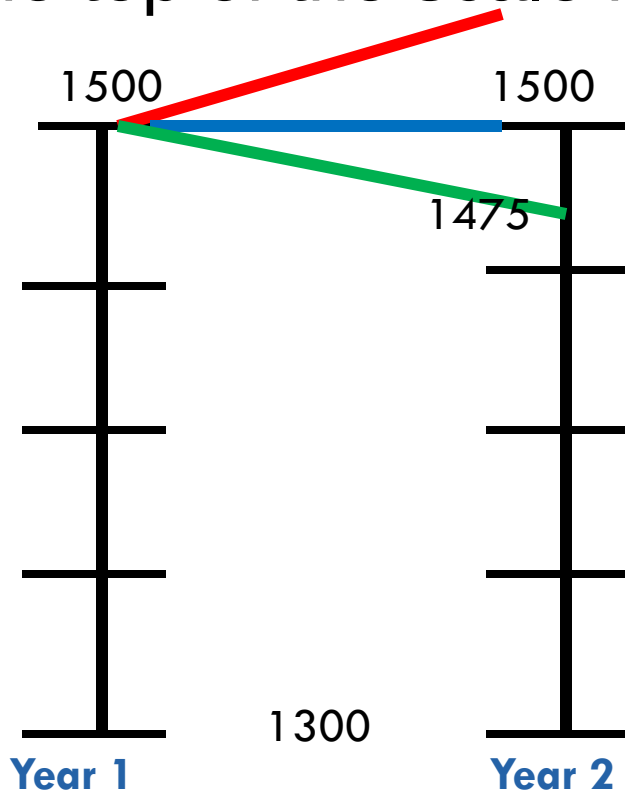
A math score of 1425 would be “advanced.”



- Basic prediction assumes the student who scored 1425 in Year 1 would score similar to all other students who scored 1425.
- If all students who scored 1425 in Year 1 score 1400 in Year 2, the models would predict the student would perform similar – that is scoring **lower** than the previous year.
- If the student scores **above the prediction**, we have **value-added**

# The Perfect Students...

The top of the scale is a score of 1500.



What are the chances of these students scoring above 1500?

- Impossible

At 1500?

- Possible, but improbable

Below 1500?

- Possible and probable

# Control Variables

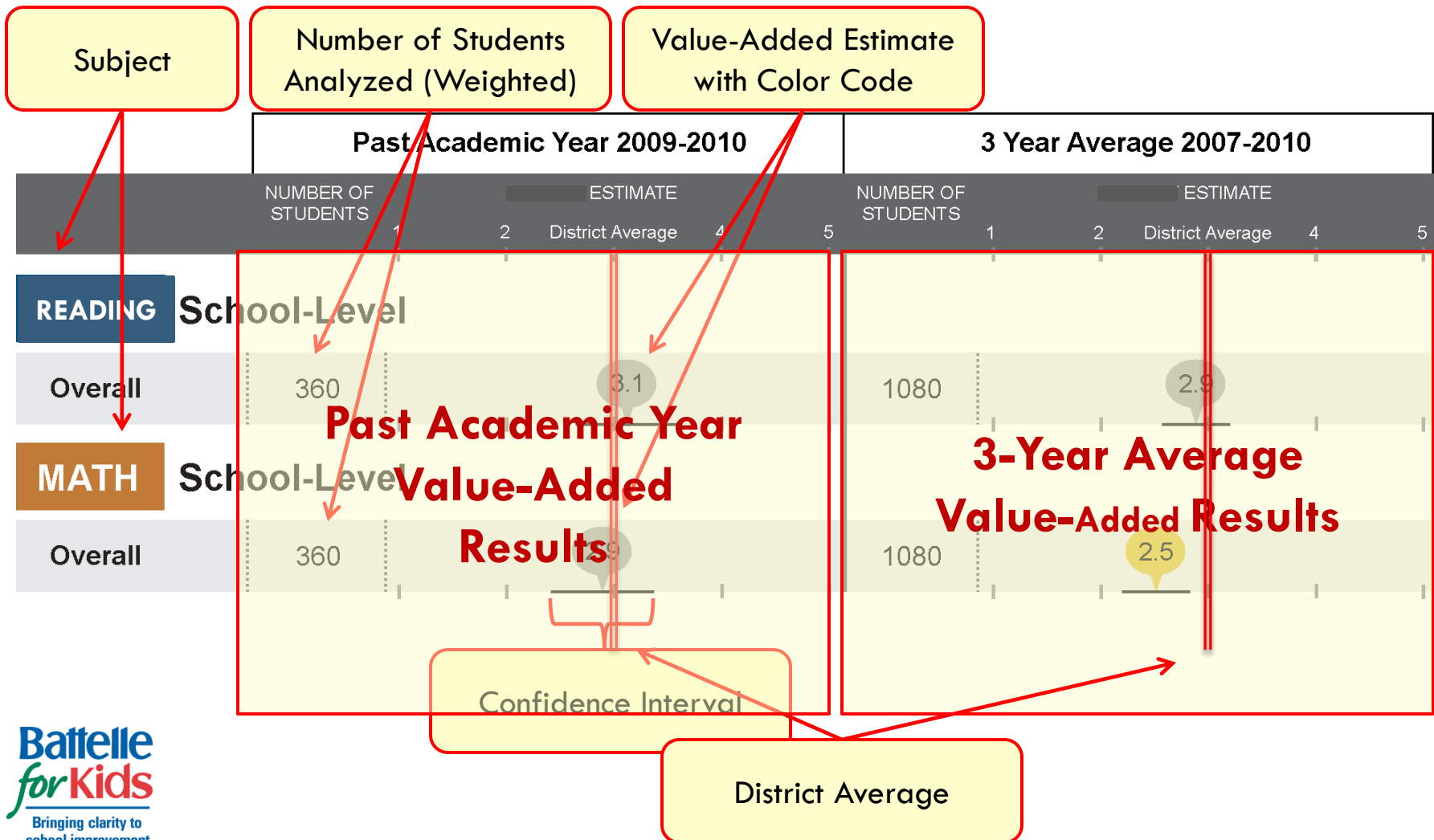
- Control variables help to make the predictions more accurate and relevant to a student.
- Aren't always perfect.

# Checking for Understanding

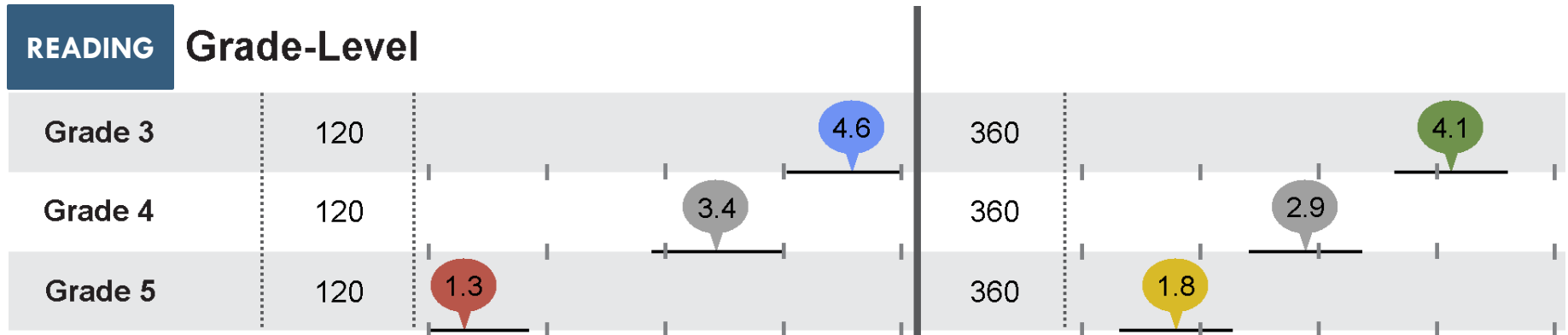


# Example Reporting

# Value-Added Reporting

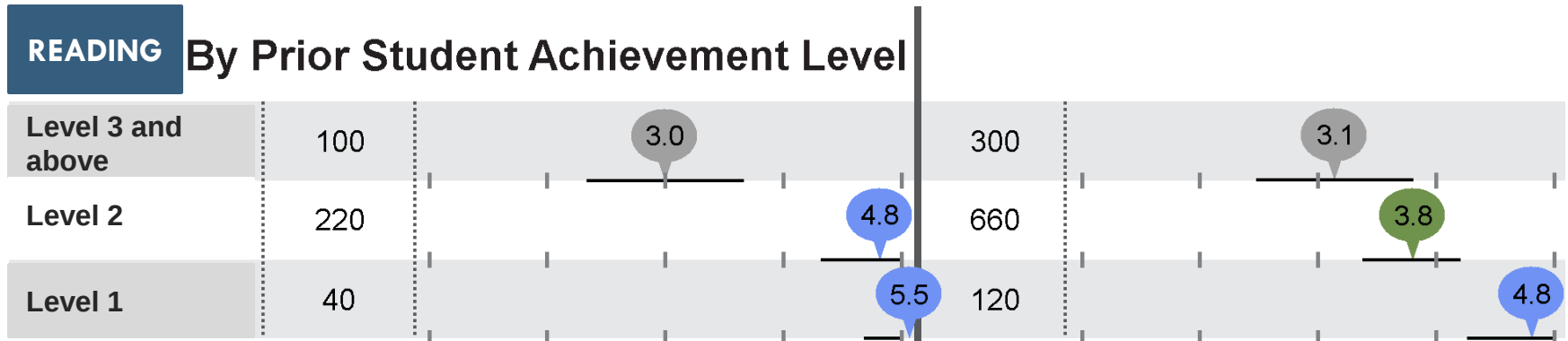


# Grade-Level Results



- In the previous slide, this school's overall ELA was 3.1 – at the district average or predicted performance.
- Is the grade-level performance in ELA consistent with the overall result?
- What could be contributing to our strengths? Our problems? Develop a hypothesis.

# Teacher Effectiveness



**Hypothesize & report out a potential problem related to:**

1. Planning and Preparation

- Standards-based activities
- Student assessment for learning

3. Instruction

- Questioning & discussion techniques
- Engage students in learning
- Assessment in instruction to advance student learning

# Checking for Understanding





[www.BattelleforKids.org](http://www.BattelleforKids.org)

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**REACH<sup>3</sup>H**