

Value-Added Assessment

- First developed for Tennessee by William Sanders
- Since 1992, tracks each of the state's 885,000 students
- 10 million records, grades 2-12 with test scores in every subject, every grade, every teacher
- Largest data base ever assembled
- Mandatory in Pennsylvania and Ohio as well as in over 300 districts and consortia across the U.S.

Philosophy Behind Value-Added Assessment

- Schools **can** and **should** add value for each student from September to June.
- This is true whether the student comes in above grade, at grade or below grade.
- Students are *entitled* to grow at least at a rate they have demonstrated in the past.



Value-Added: A New Lens

What is a good school?

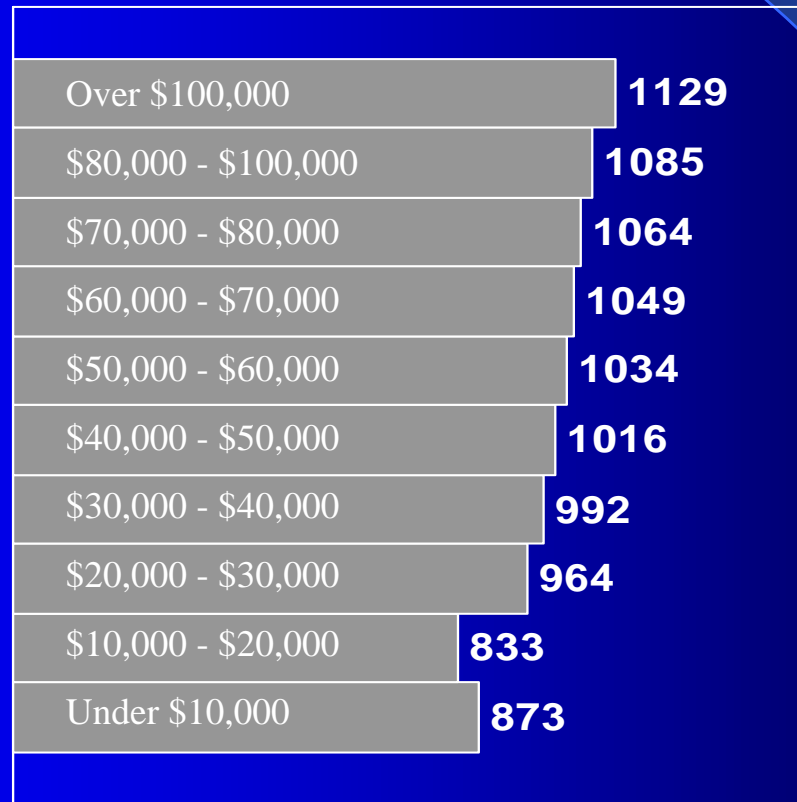
Without much thought, we answer:

*“Good schools are those with
high test scores.”*

Where do we find these schools?

In rich communities.

Family Income and SAT Scores



Most people would reject the definition of a successful school as one with wealthy students.

They are correct.

Do good schools make good students or do good students make good schools?

Field Experiment

What would happen over time if
we took ...

- Kids from the inner-city and educated them in affluent suburban schools
- Kids from the affluent suburbs and educated them in the inner-city schools

Since we can't undertake this experiment we need a statistical method than can do it for us.

Value-added works because it separates *student* effects from *school* effects

- Student effect: e.g., ethnicity, family background, SES
- School effect: e.g., teachers, administrators and academic programs

Value-Added: The Basics

- Value-added is not a test.
- It is a way of looking at the results that come from tests.
- Value-added lets us determine whether the students in a class, school or district are making enough academic growth each year.

Don't confuse value-added assessment with mere growth or gain

- Many people make this mistake.
- It sounds reasonable to think of the “growth” or “gain” a student makes from one year to the next as the “value” that’s been “added.”
- Value-added *assessment* is much more powerful than a simple growth or gain score.

The Concept Behind Value-Added

- Value-added is statistically and computationally complex.
- But the idea behind it is straightforward...

Value-Added

Divides Annual Growth Into Two Parts

- That which is contributed by the student
- That which is contributed by the teacher

The Concept Behind Value-Added

- Value-added calculates a projected test score for a student in a given grade and subject.
- The projected score is based entirely on the student's prior academic achievement.
- It is then compared to the actual score at the end of the year.

What makes value-added fair?

- **For children**

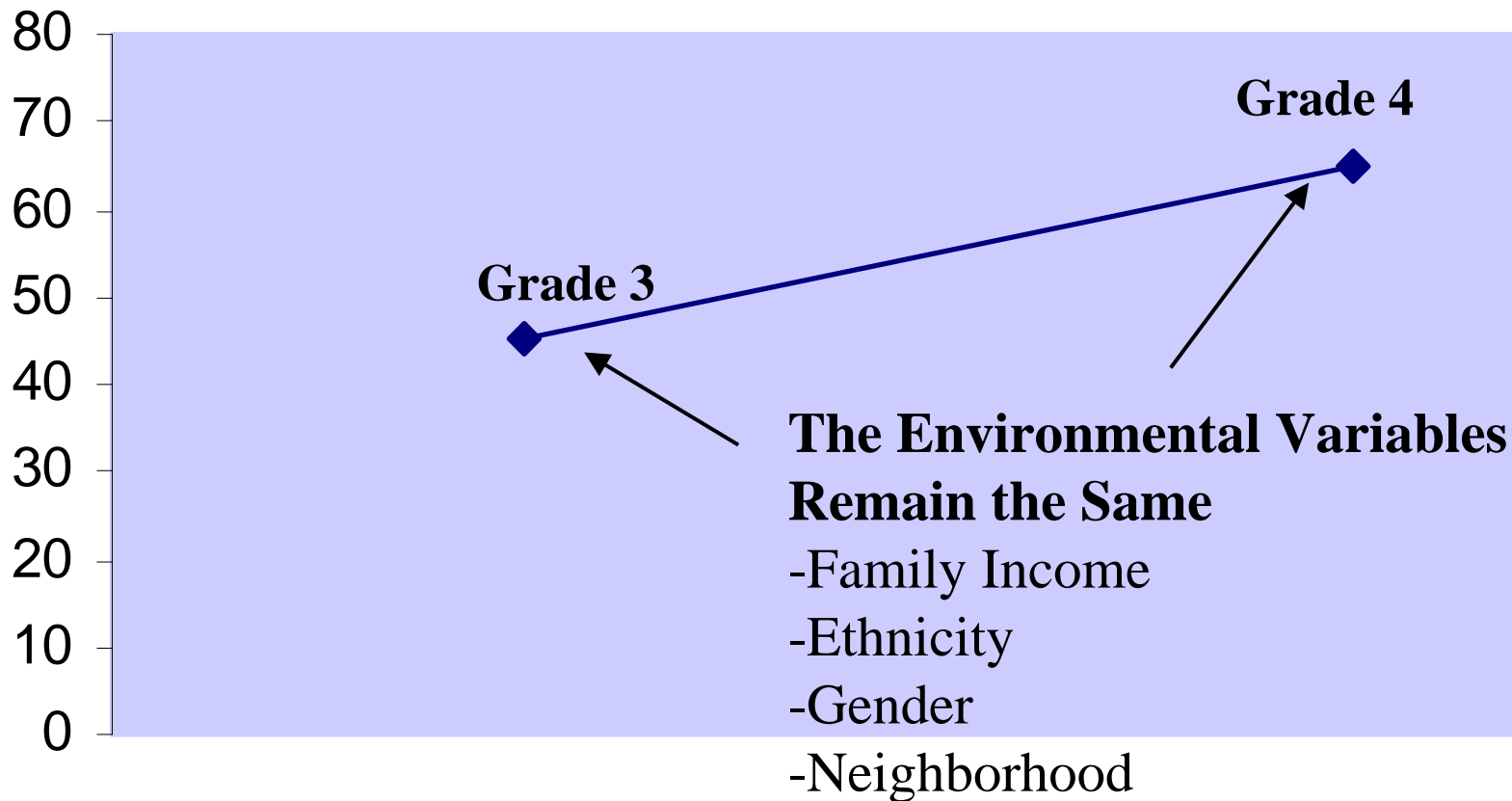
Value-added is fair to students because it bases their projected score only on their prior academic record. That ensures that all children are expected to make progress each year from wherever they start.

What makes value-added fair?

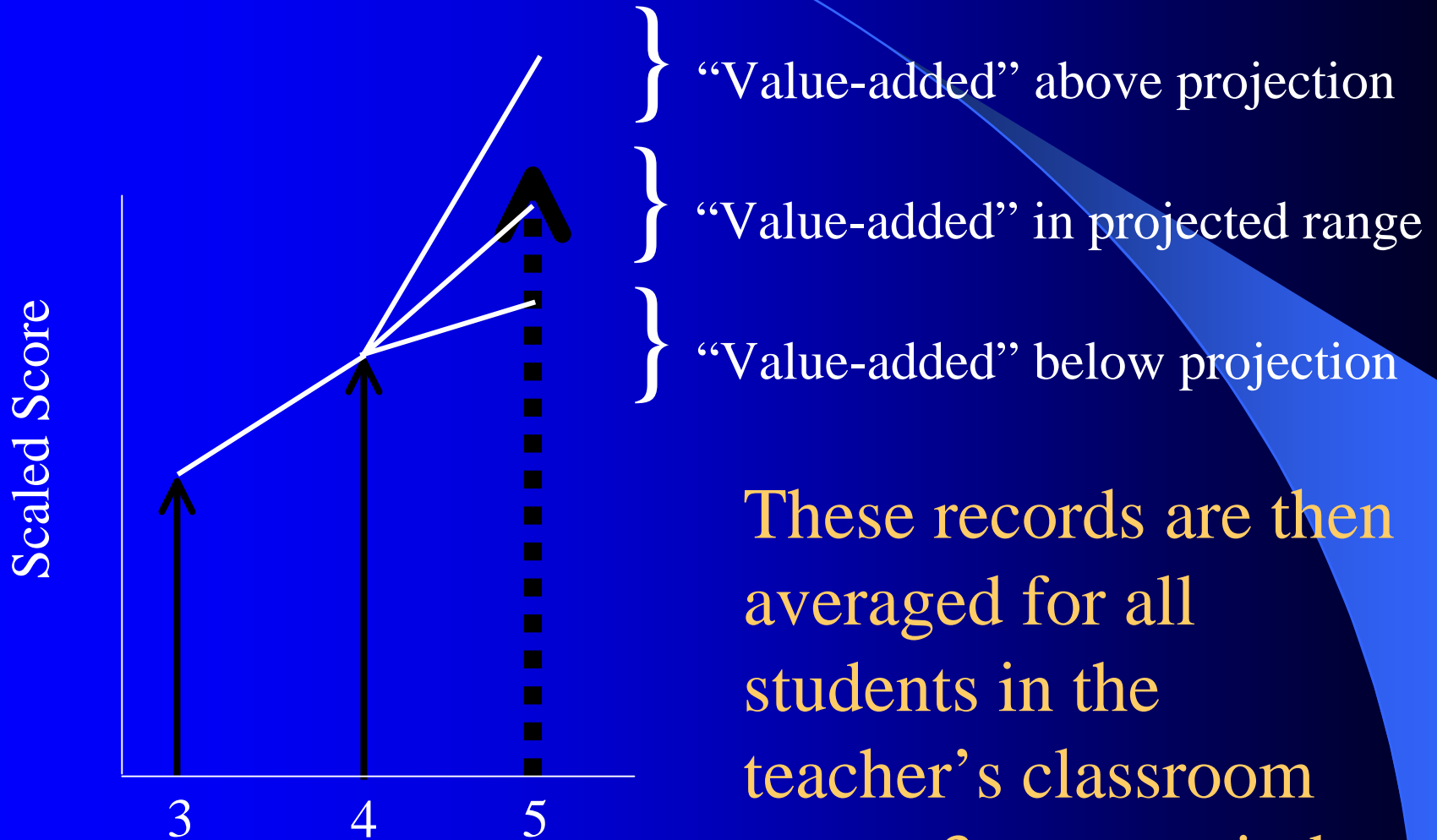
- **For educators**

It is fair to administrators and teachers because prior academic achievement data already incorporate the student background characteristics that bias absolute test scores.

Each child serves as his own statistical control

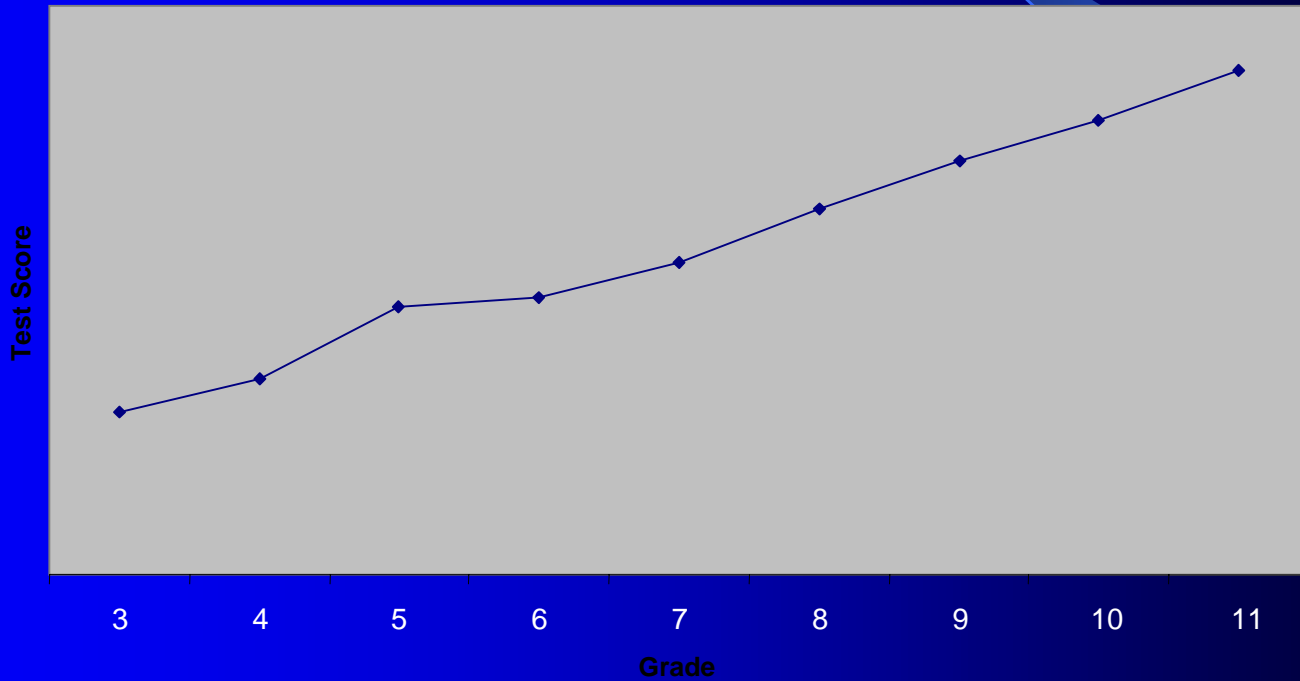


Value-added yields three outcomes

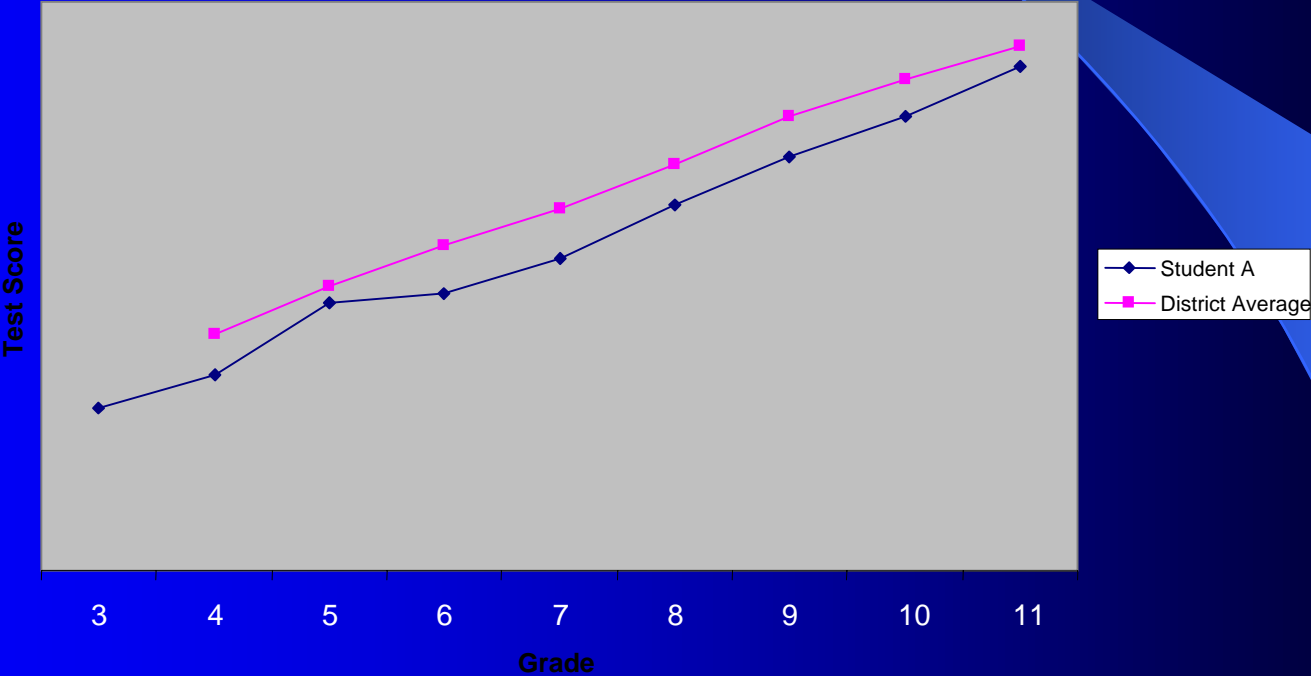


These records are then averaged for all students in the teacher’s classroom over a 3-year period.

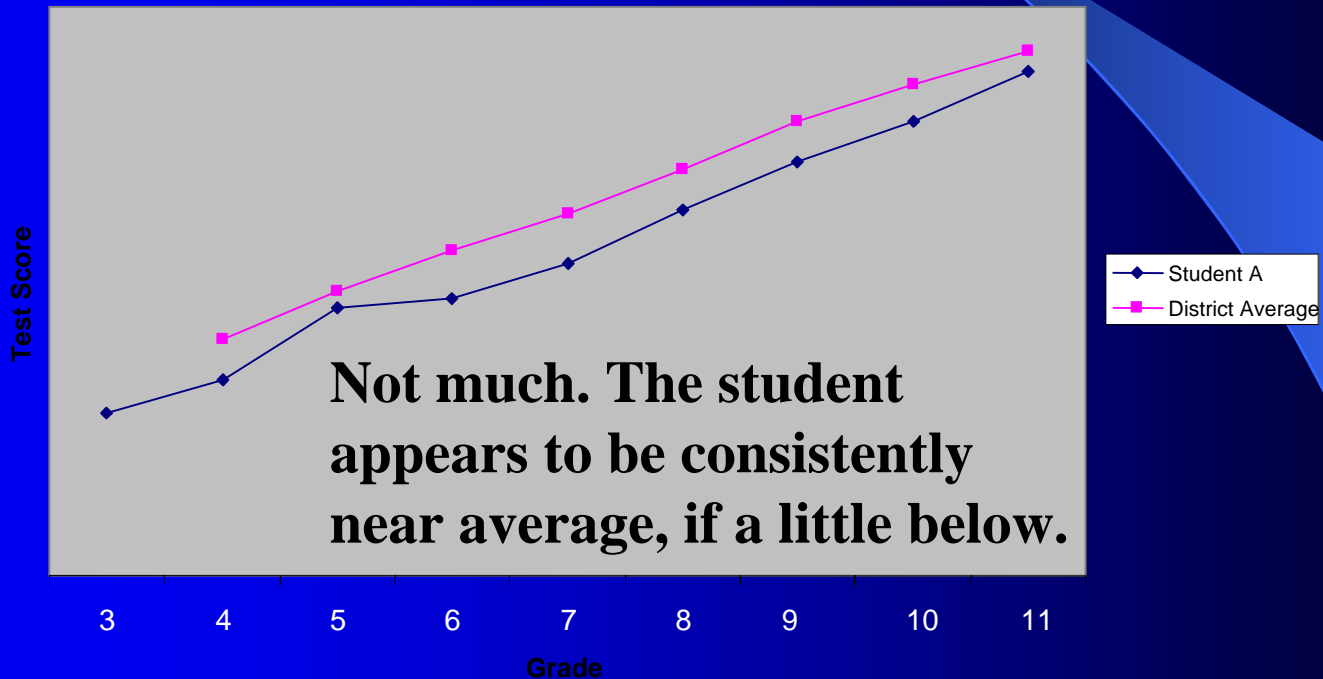
Example – Student A

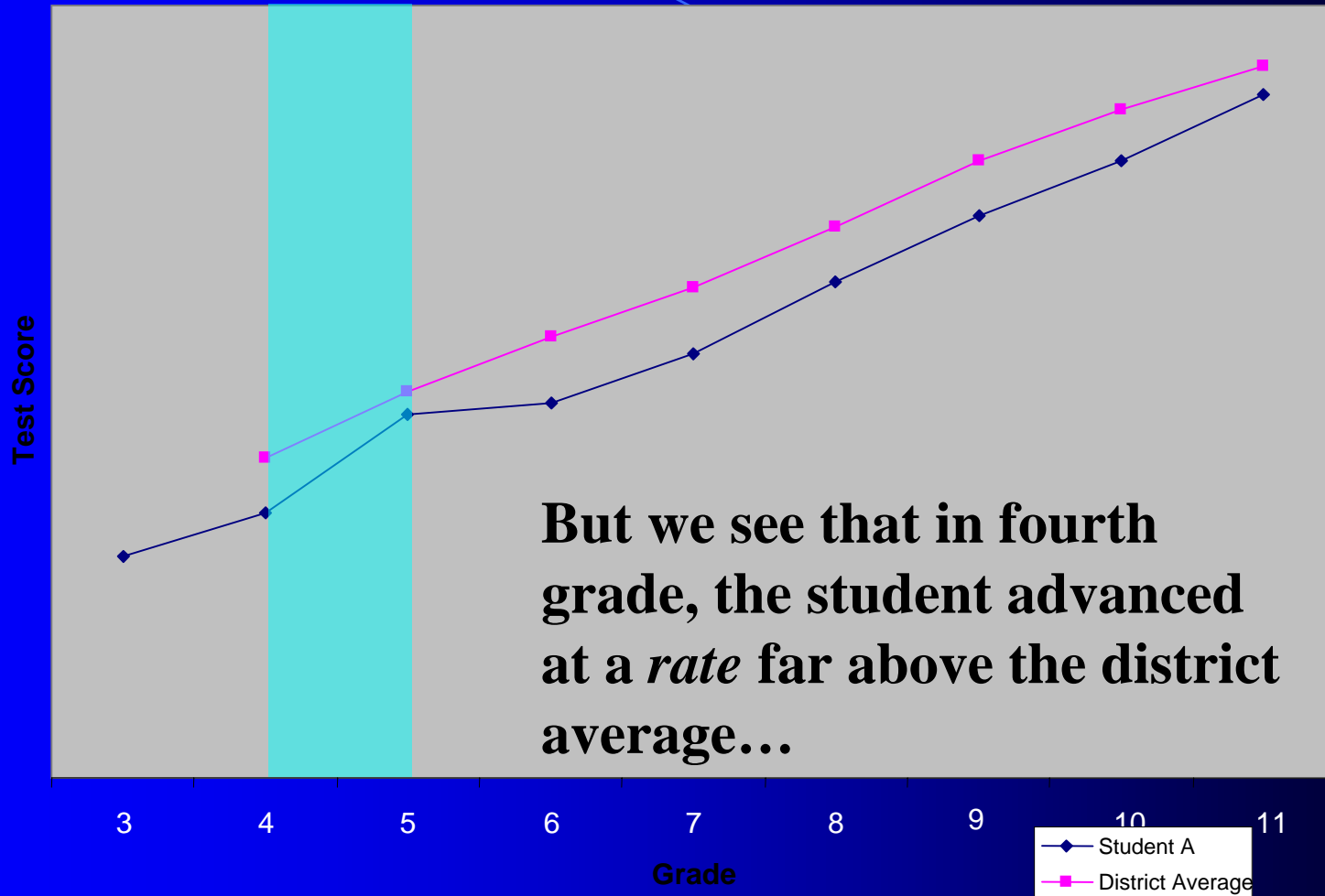


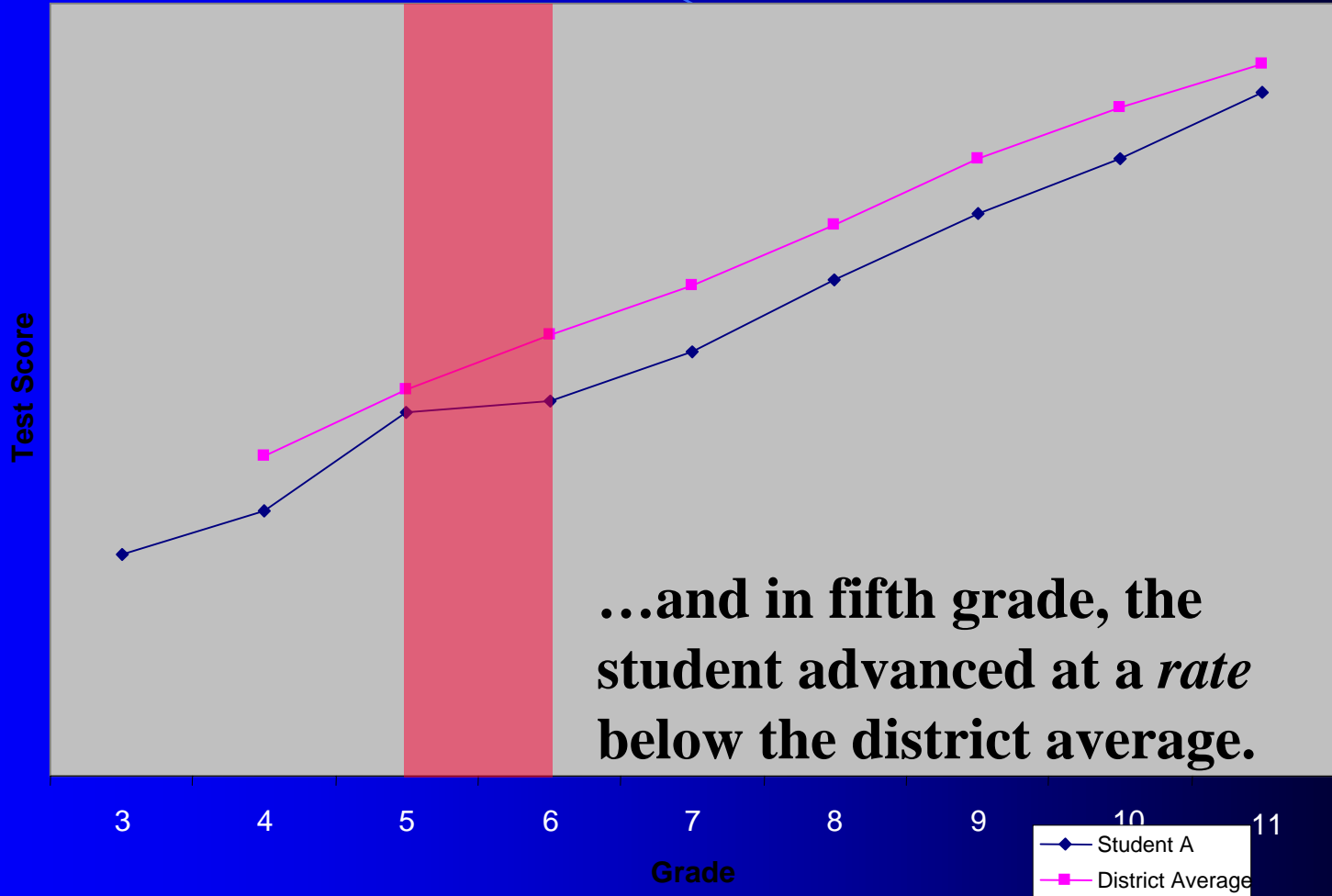
Student A vs. District Average

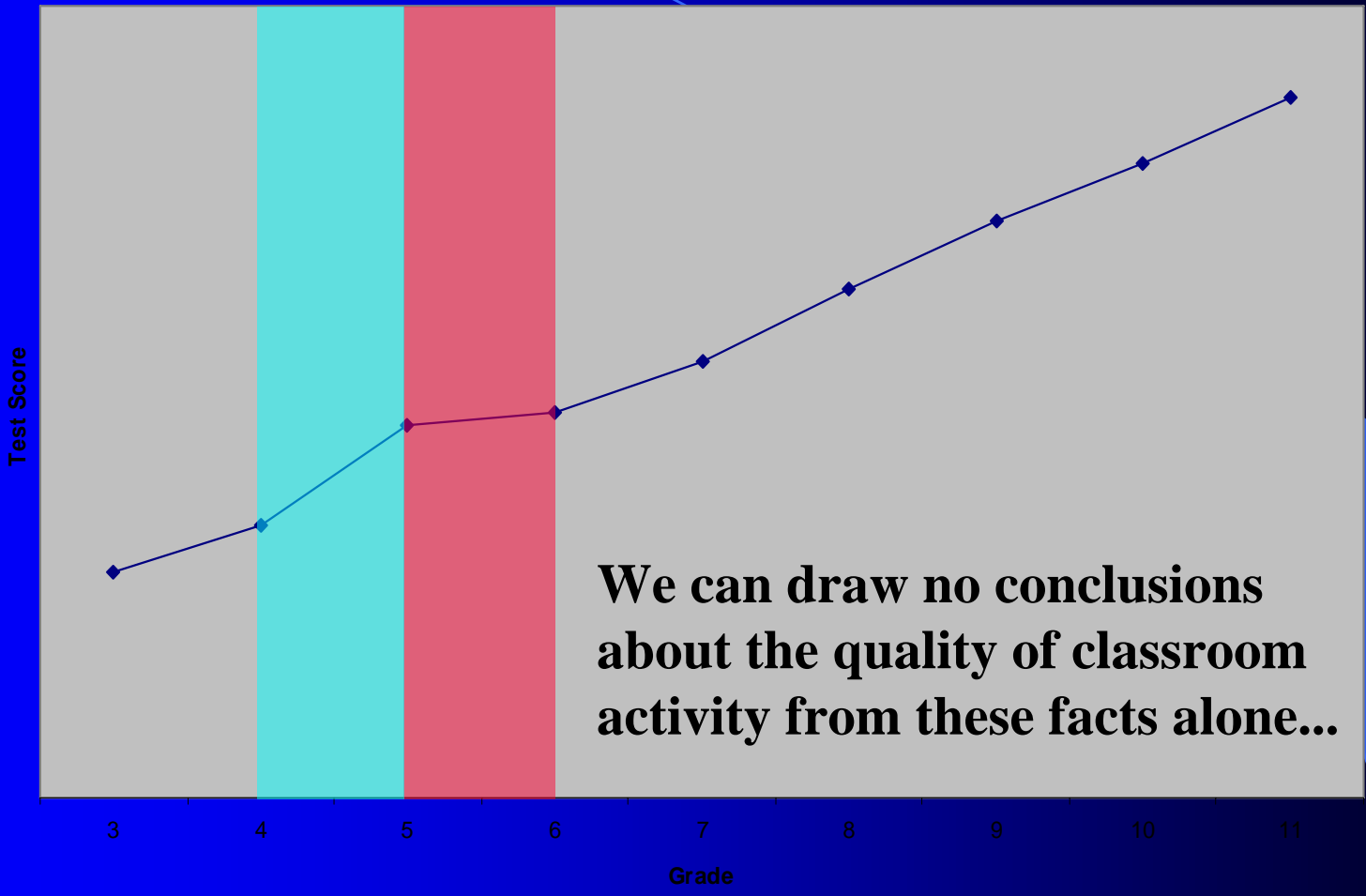


What can we conclude?

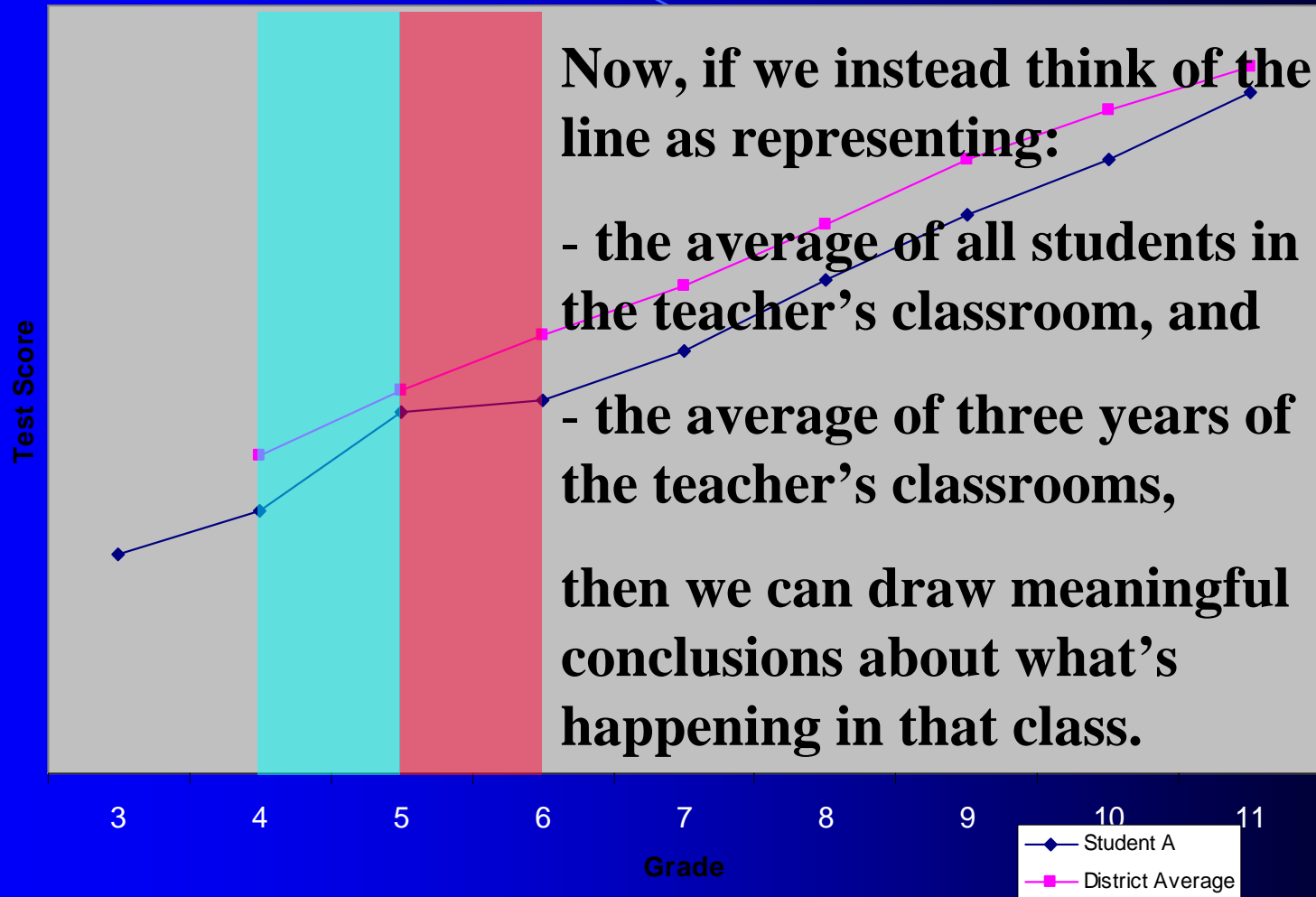








**We can draw no conclusions
about the quality of classroom
activity from these facts alone...**



Now, if we instead think of the line as representing:

- the average of all students in the teacher's classroom, and

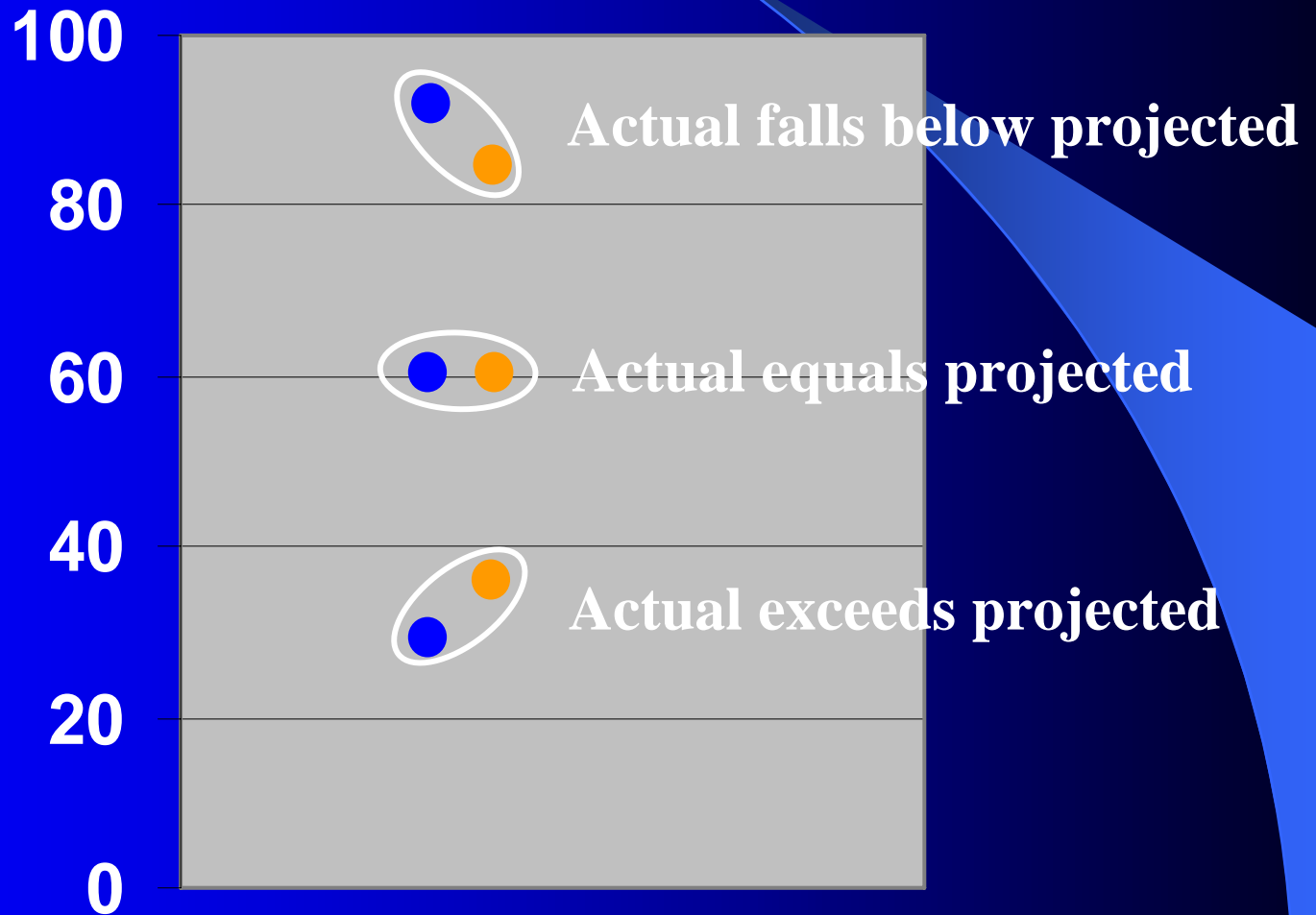
- the average of three years of the teacher's classrooms,

then we can draw meaningful conclusions about what's happening in that class.

Value-Added Levels the Playing Field

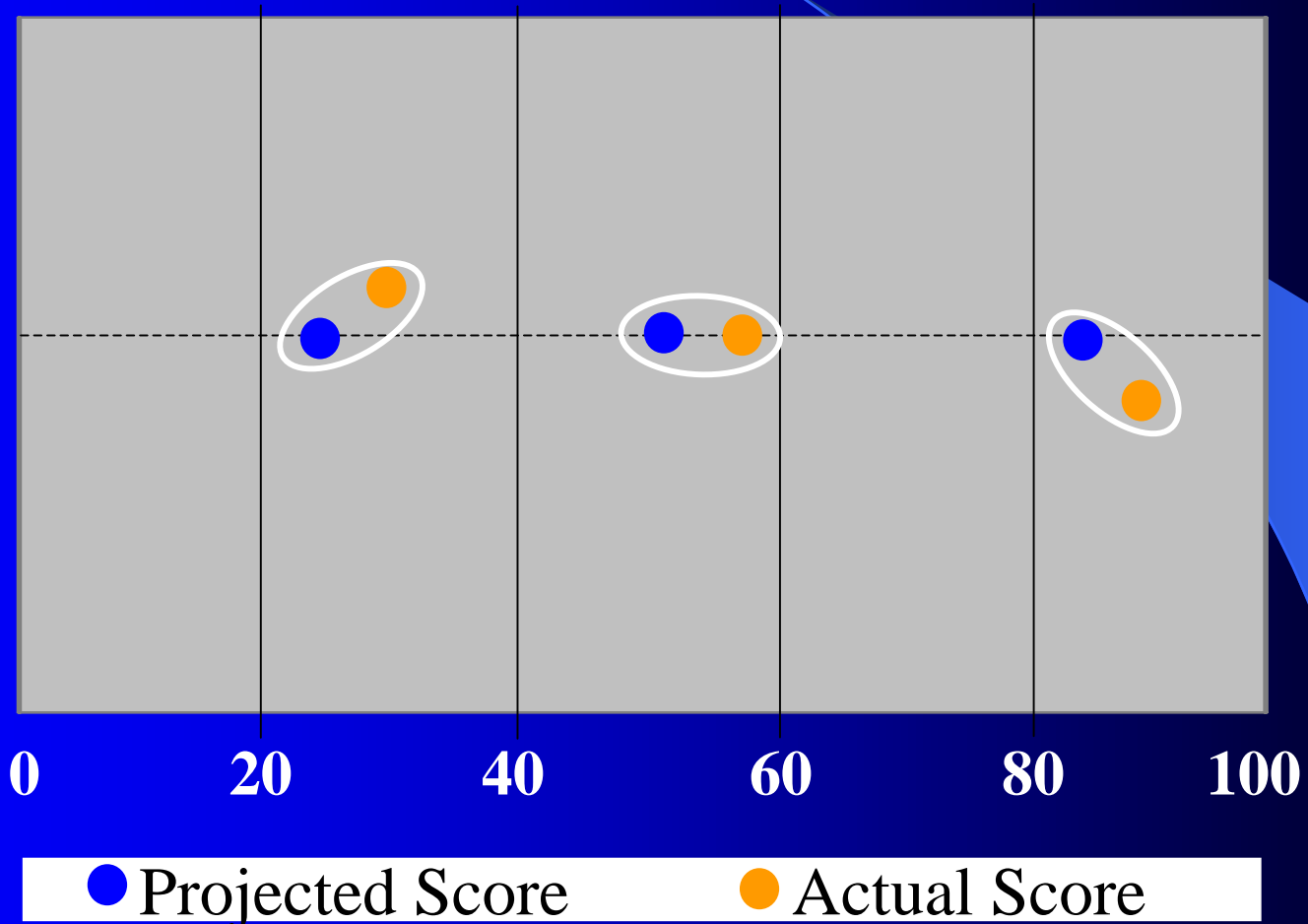
● Projected Score

● Actual Score



Value-added measures the difference between actual and projected.

Value-Added Levels the Playing Field



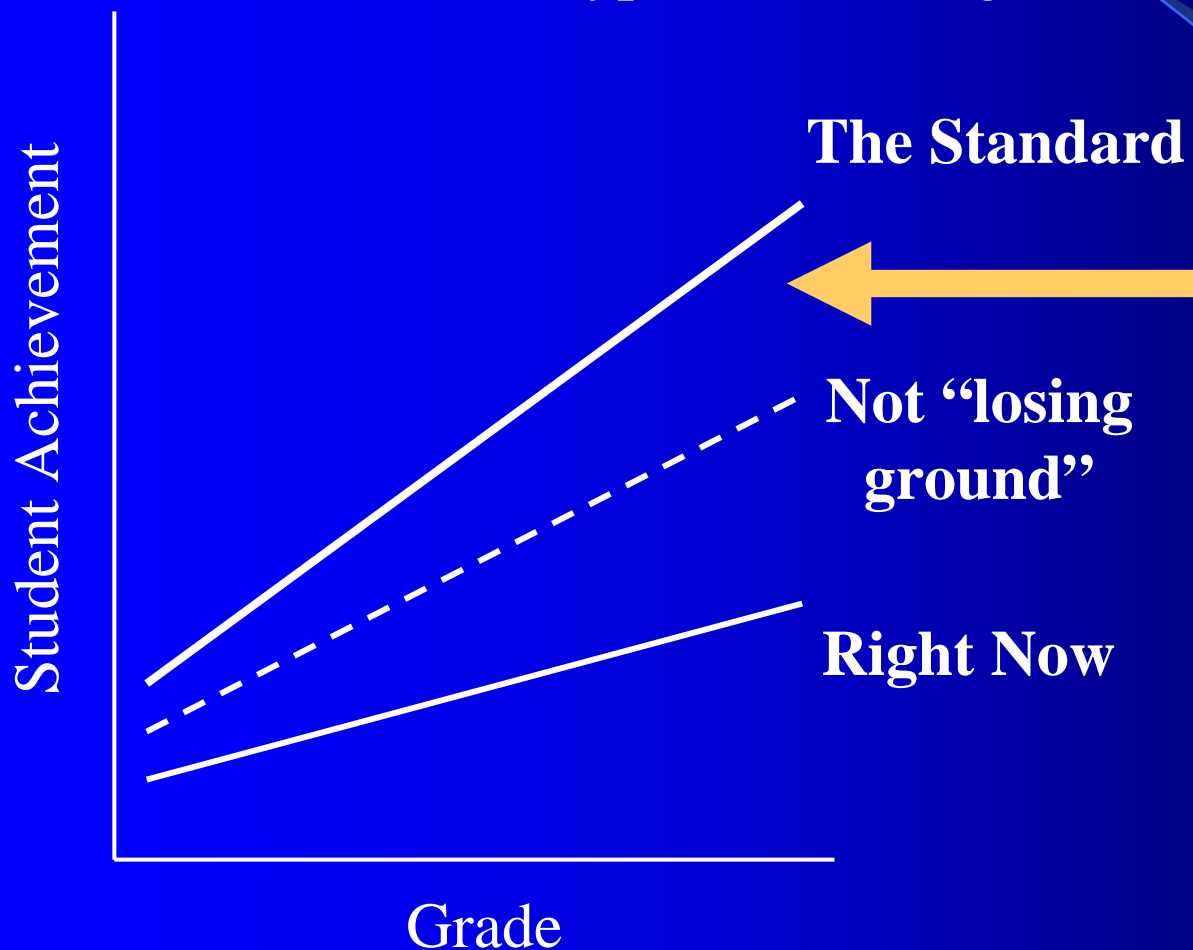
Value-added measures the difference between actual and projected.

Defining a successful school

- Each year the performance of the students exceeds what is expected of them, given their academic background.
- Over time all students are able to achieve high standards (NCLB).

Value-Added in a Standards World

(Hypothetical Progression)



Closing the Gap

- Instructional leadership
- More time for struggling students
- Adequate resources

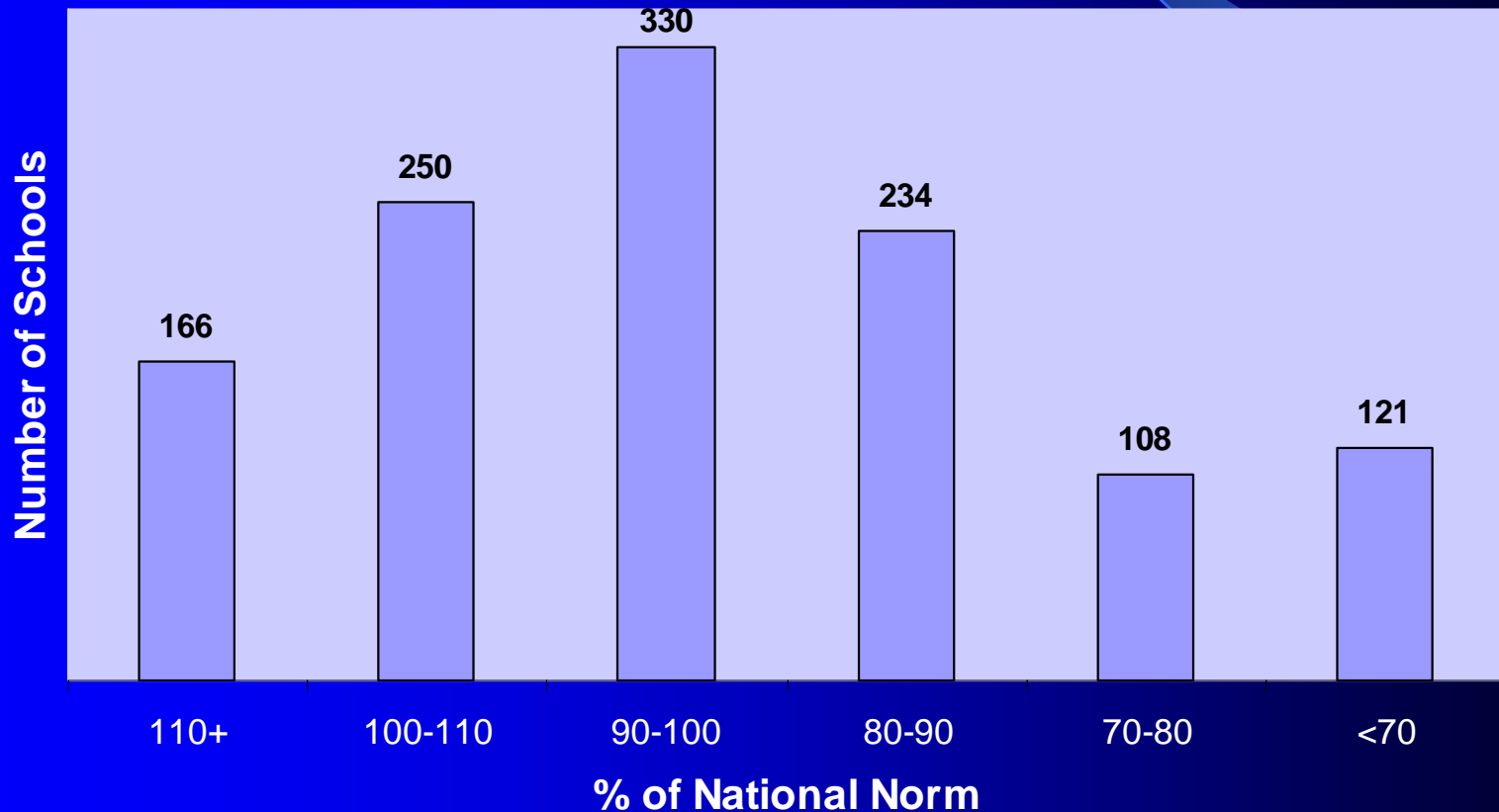
Value-Added Findings

Patterns from the Data

Value-Added for Tenn. Schools

There are some very good schools and some very poor schools, but it is **impossible** to determine where a school falls just by knowing its location or the make-up of its student body

Math: 1996-97

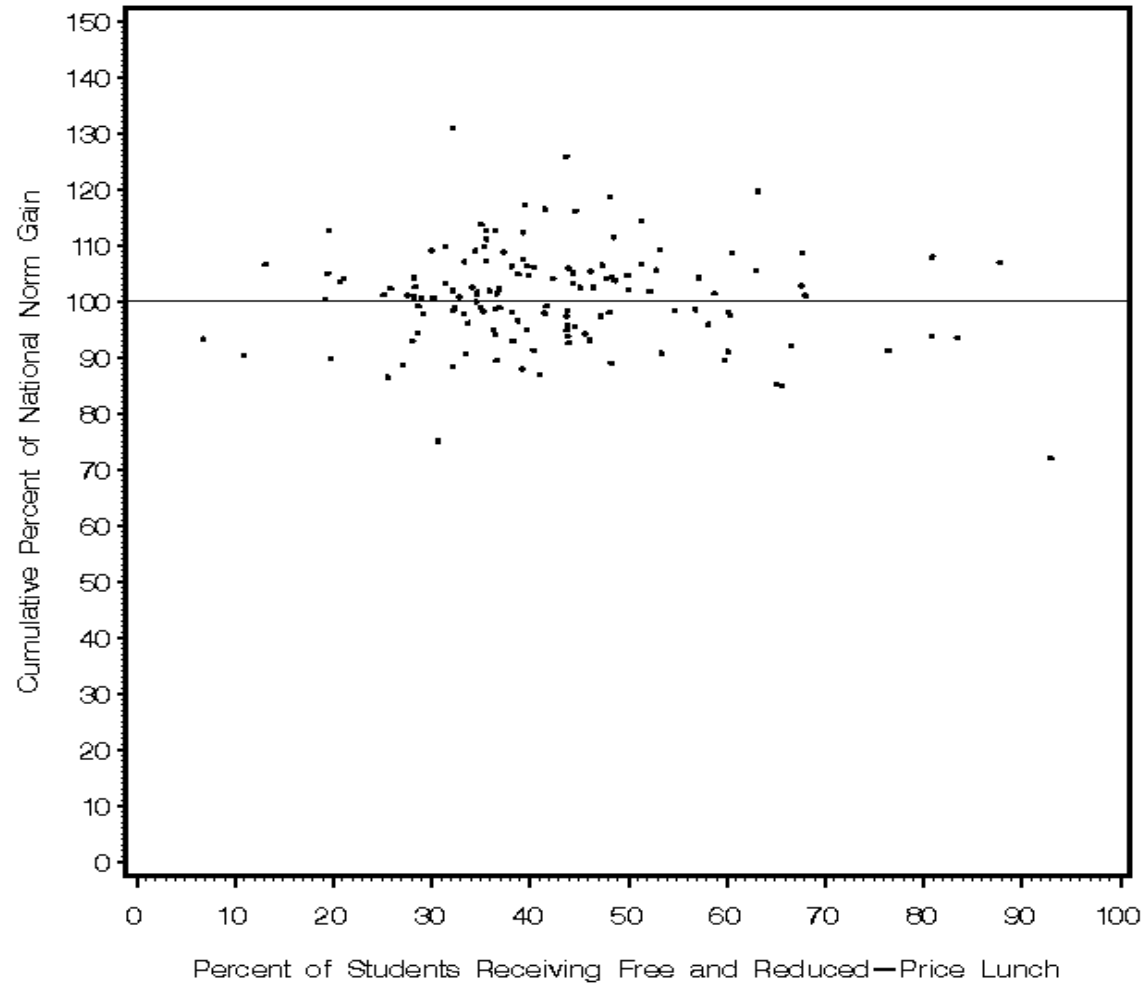


**Income has
no effect on
value-added**

Does the Percentage of Students Receiving Free and Reduced-Price Lunches Affect System Gains?

Cumulative Gain of a Large East Coast County's School Systems
Compared with the Percentage of Students
Receiving Free and Reduced-Priced Lunches

Reading



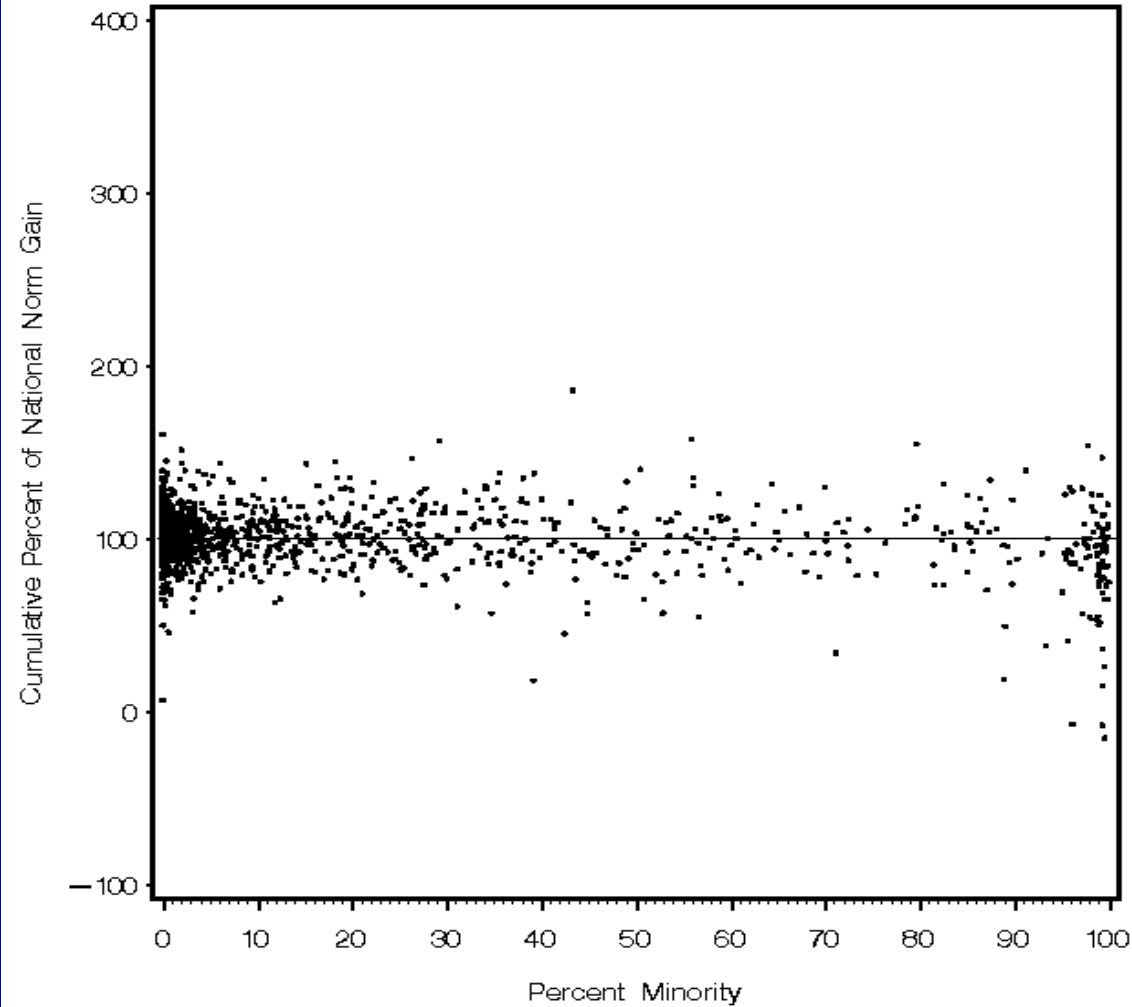
Each dot represents 1 school system
Horizontal line at 100% represents gain equal to national norm gain

3 Year Average Gain
July, 1997

**Minority
status has
no effect on
value-added**

Does the Percentage of Minority Students Affect School Gains?

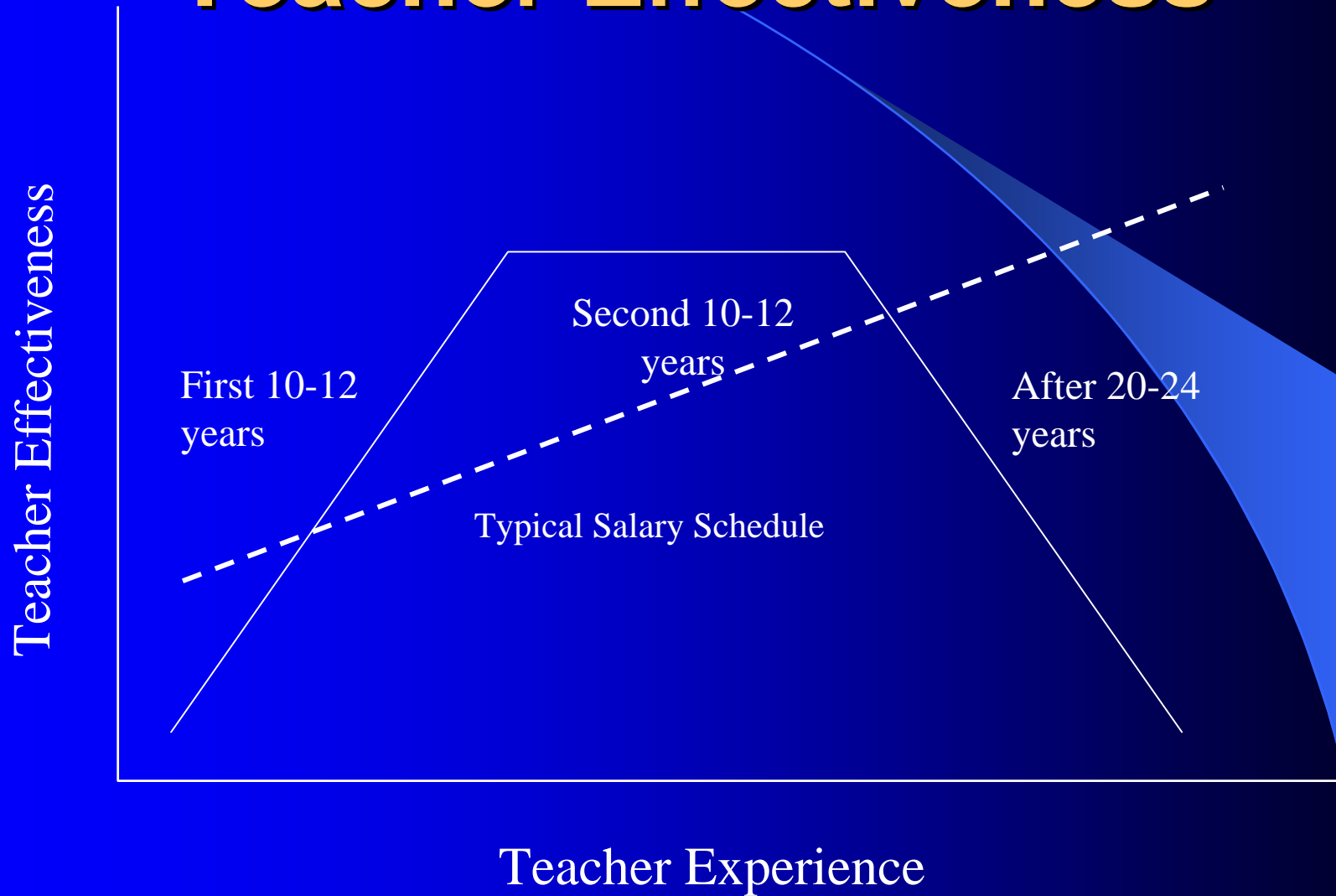
Cumulative Gain of a Tennessee Schools
Compared with the Percent of
Minority Students in the School
Reading



Each dot represents 1 school
Horizontal line at 100% represents gain equal to national norm gain.

3 Year Average Gain
July 1997

Teacher Effectiveness

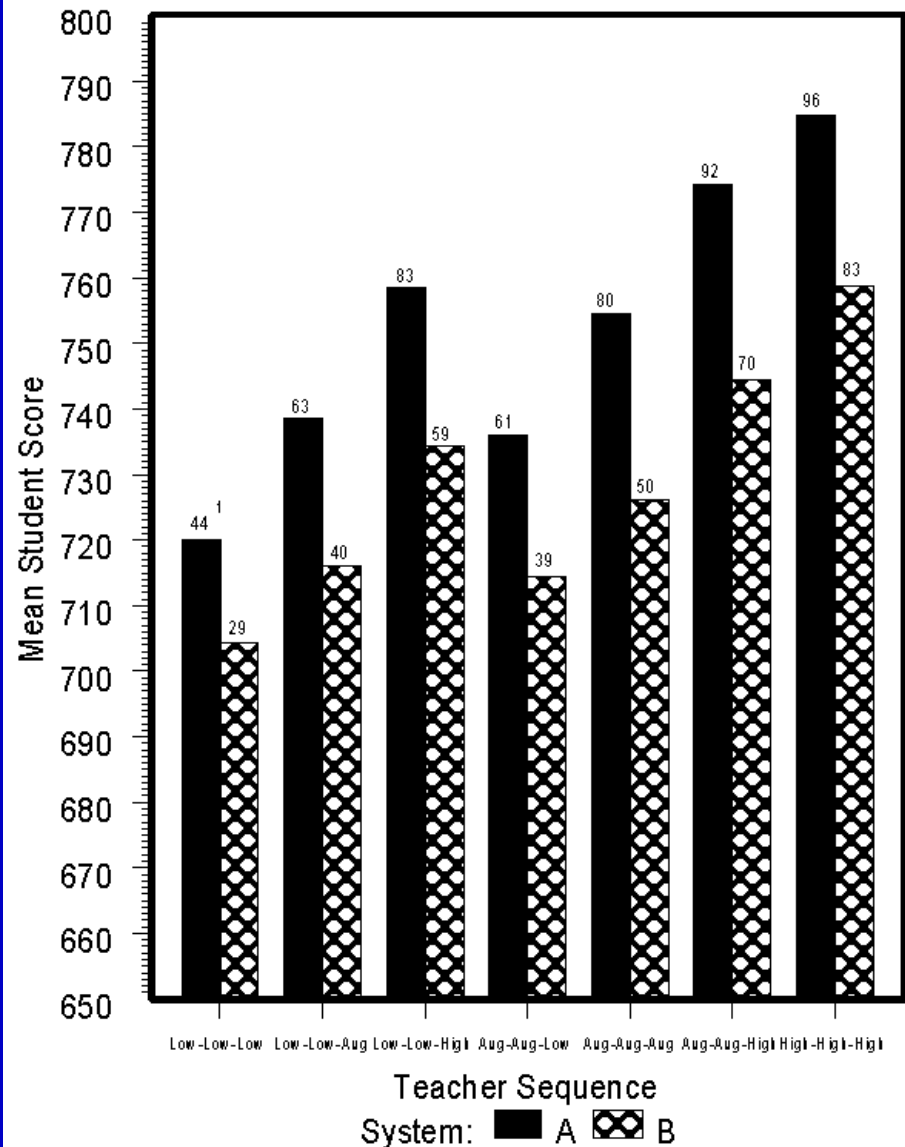


Value-Added Findings From Tennessee

The Teacher Effect

The Importance of Teacher Sequence

Cumulative Effects of Teacher Sequence on Fifth Grade Math Scores for Two Metropolitan Systems



¹ Denotes the corresponding percentile. (CTP/MaCraw, 1999, pp. 404-445)

**Probability that a bottom-quartile 4th
grade student will pass the high-stakes
graduation exam in 9th grade**

Poor teacher sequence: <15%

Average teacher sequence: 38%

Good teacher sequence: 60%

Cumulative Effects of Value-Added

<u>TVAAS Scores</u>	<u>75%</u>	<u>100%</u>	<u>140%</u>
Grade			
2	2	2	2
3	2.75	3	3.4
4	3.5	4	4.8
5	4.25	5	6.2
6	5	6	7.6
7	5.75	7	9
8	6.5	8	10.4
GRADE LEVEL IMPACT	-1.5	0	+2.4

This means a difference of almost 4 grade levels by the end of middle school.

Tennessee research shows that **teacher effectiveness** is the single most powerful predictor of student progress – stronger than income, class size, race or family educational background.