



Introduction to NYC Teacher Data Initiative:

Optional Additional Training Materials for Principals

Fall 2008

Optional Additional Training Materials: Contents

Background Information

Detail about the model

Lessons Learned from NYC Pilot: Teacher Data Is Useful for Principals and Teachers

- > NYC conducted a pilot in 2007-08 with 100 schools
 - Provided teacher level data reports to principals
 - Surveyed principals at the end of the year for feedback

- > 86% of Pilot principals feel this data is useful for principals. Specifically, principals found the data useful for:
 - Planning individual and group PD
 - Considering implications for teacher/student class assignments
 - Determining future staffing needs
 - Informing choices of curricula or instructional programs

- > 77% of principals felt information was useful for teachers and 50% of them said they shared reports with teachers. (not a pilot requirement)

- > Pilot helped refine:
 - Value-added model design and data elements
 - Format and content of reports
 - Support tools for schools to help interpret and use the information

Other School Districts Use Teacher Data at the Classroom Level

EXAMPLES OF URBAN DISTRICTS:

- > Houston
- > Dallas
- > Milwaukee
- > Charlotte/Mecklenburg
- > Chicago and DC in development

BROAD USE ACROSS STATES:

- > Ohio
- > North Carolina
- > Tennessee
- > Florida

What Data Goes into Teacher Data Reports?

Test Scores

- > State standardized test scores in English Language Arts (ELA) and Mathematics
- > Data from 2005-06 through 2007-08 will be included on reports
- > Scaled scores
 - Translated into z-scores, then translated into proficiency ratings (1.00-4.50)

Teachers and Schools

- > Students
 - Grades 3 to 8
 - At least two (2) years of test scores in ELA or Math
- > Teachers
 - Grades 4 to 8
 - English Language Arts and/or Mathematics
 - At least six (6) students with test scores in the current and prior year
- > Schools
 - With any grades 4-8
 - At least one teacher in the sample
 - Submitted data on student rosters for individual teachers

Differences Between School Progress Reports and Teacher Data Reports

Progress Reports

- School (elementary, middle, high)
- State standardized tests*
 - Progress (individual student gain year to year)
 - Performance (e.g., % of Level 3 & 4 students)
- Learning environment
 - Parent, student, teacher survey responses
 - attendance

Differences

Level

Metrics

Gain

Use

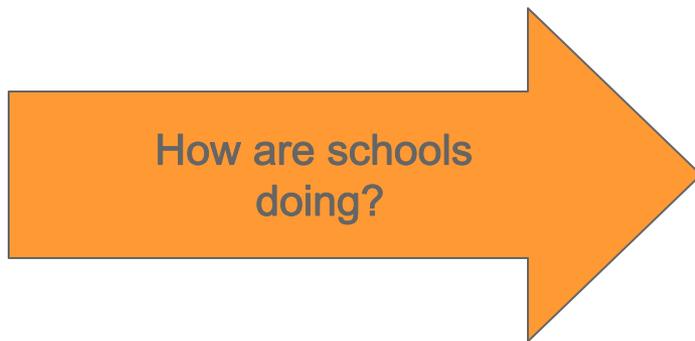
Teacher Reports

- Teacher (4-8)
- State standardized tests
 - Progress (individual student gain year to year)
- Predictive
- Instructional improvement

➤ Comparative

➤ School accountability & performance management

The Inquiry Team Has Many Tools – How Does Teacher Data Compliment Other Forms of Data?



- School Progress Reports
- Quality Reviews



- Periodic Assessments
- CFI inquiry teams
- ARIS data/knowledge management system



** Reports should only be shared when teachers agree, but school-wide trends can be used to guide inquiry*

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Regression Analysis: Simplified Example

Estimate 2007-08 ELA Score for a Student:

- Use the variables of prior year reading score, attendance, class size, IEP status and whether the student was retained on grade.
- The “ e ” in equation represents “error” because not all factors are measurable and others are subject to measurement error

$$(1.08)\text{Prior year reading score} + (.45)\text{Attendance} + (-.01)\text{Class size} + (-.30)\text{IEP Status} + (-.22)\text{Retained in grade} + \underline{e} = \text{ELA Score in 2007-08}$$

NOTE: ILLUSTRATIVE ONLY. NOT BASED ON REAL DATA

- The equation provides a prediction of the score for a student with prior reading of 2.3, 93% attendance, class size of 31, who is does not have an IEP and was not retained in her grade would be: 2.5925

$$(1.08)2.3 + (.45).93 + (-.01)31 + (-.30)0 + (-.22)0 + e = 2.5$$

The difference between that score of 2.5 and the prior year score of 2.3 is the predicted gain (.2)

Predicted Critiques of Value-Added Models

- > Tests are administered mid-year
- > Some students change classes during the school year
- > Standardized tests were not designed for this purpose
- > Experts are still debating aspects of value-added models

Notes for Predicted Critiques of Value-Added Models

- > It is OK to acknowledge that there is controversy about the use of value-added modeling for educational purposes. This slide deals briefly with some of the most common criticisms.
- > Tests are administered mid-year
 - We take the prior year teacher into account by making it a variable affecting students' predicted gain
 - Only use test results for students that are in the teachers' class when the test is given
 - All teachers have the students for the same amount of time before the test
- > Some students change classes during the school year
 - Students who change classes mid-year are not attributed to the teacher
 - If a teacher leaves mid-year, all students are considered “mobile” and not assigned to any teacher
- > Standardized tests were not designed for this purpose
 - This one piece of data should not replace other forms of information – combine all information to gather the most reliable picture
- > Experts are still debating aspects of value-added models
 - DOE has advise from many experts who support rolling out value-added for development purposes
 - Debates center around arcane details of statistical methodology. DOE will keep it's model state of the art
 - These kinds of statistical debates are ONE reason we encourage you to use multiple sources of insight and not to rely on this tool alone, or to completely replace your judgment.
 - Despite the debates, remember: sharing this data with schools can help teachers and schools improve student outcomes

The NYC Value-Added Model Has Proven Robust and Valid for Use as One Tool for Instructional Improvement

Model predicts student achievement exceptionally well

- > R^2 of predictors is high (.71)

Model's value-added scores correlate strongly with:

- > Progress Report grades
 - A schools have significantly higher average value-added teachers than D and F schools
- > Principals' subjective judgments of teachers' effectiveness
 - Measured in pilot research study

Model demonstrates high stability from year-to-year, especially at bottom and top quintiles

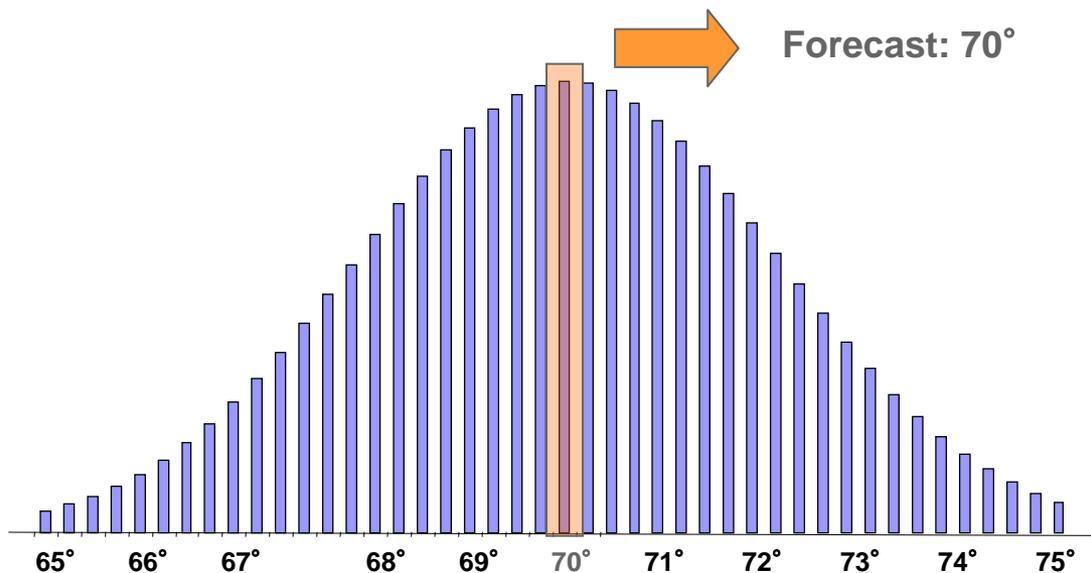
- > E.g., teachers who are in bottom and top quintiles after two years are likely to remain there the third year and after 5 years

Our technical advisers support broader deployment of this model for instructional improvement purposes

Predicting Student Growth is NOT an Exact Science

Consider weather forecasts

The forecast is the most likely outcome
But we naturally assume the actual weather will fall within a range
close to the forecast



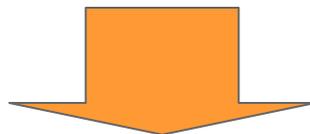
Possible Reasons for Uncertainty in Predicting Student Gains

- Can't measure every relevant factor:
 - > Personal-life changes for students, teachers.
 - > Other learning experiences: pull-out teachers, tutors, help at home.
 - > What causes one student to respond well to a teacher and another not to respond well.
- Variation in the number of students or years of data available
- Measurement error inherent in state assessments

Challenge:

Students Who Move During School Year

- > Data shows that about 4% of students change schools or classes during the school year
- > Mobility is not evenly distributed across schools or classrooms
- > Data does not exist at this point to accurately match these students to teachers
- > Mobile students tend to perform less well relative to predicted gains



Students who move schools or classes during the school year are not attributed to any individual teacher in The Teacher Data Initiative.