Possibilities and Pitfalls of Value-Added Modeling (VAM) for Improving Teaching Policy

Linda Darling-Hammond

1

Policy Context and Assumptions

- "Value-Added Modeling" (VAM) is a potentially powerful tool for isolating teacher effects

- May allow stronger inferences about policy or program effects on outcomes by tracking same students over time (rather than a changing group of students) while controlling for other influences

2

Potential Policy Uses

- Examining learning gains of students taught by teachers who have experienced particular training programs
- Examining whether other indicators of program or teacher quality are related to measures of value-added effectiveness
- Drawing inferences about the performance of individual teachers for personnel decisions

Concerns about Policy Uses of VAM Measures

- Non-random assignment of students
- Effects of other teachers
- Effects of student characteristics (even when controlled)
- Effects of school policies & context
- Non-random assignment of teachers
- Appropriateness of outcome measures for students and curriculum taught

"It is always possible to produce estimates of what the model designates as teacher effects. These estimates, however, capture the contributions of a number of factors, those due to teachers being only one of them. So treating estimated teacher effects as accurate indicators of teacher effectiveness is problematic."

-- Henry Braun (2005). *Using student progress to evaluate teachers: A primer on value-added models*, Princeton, NJ: Educational Testing Service, p. 17.

Feelings of Preparedness Differ by Credential Type
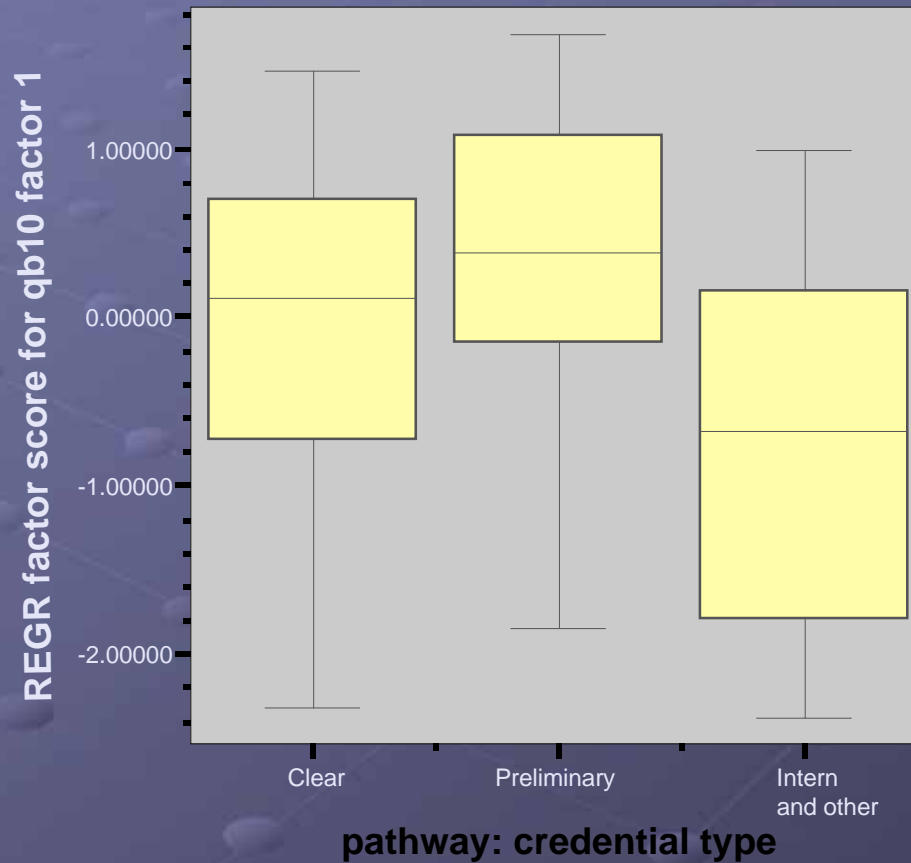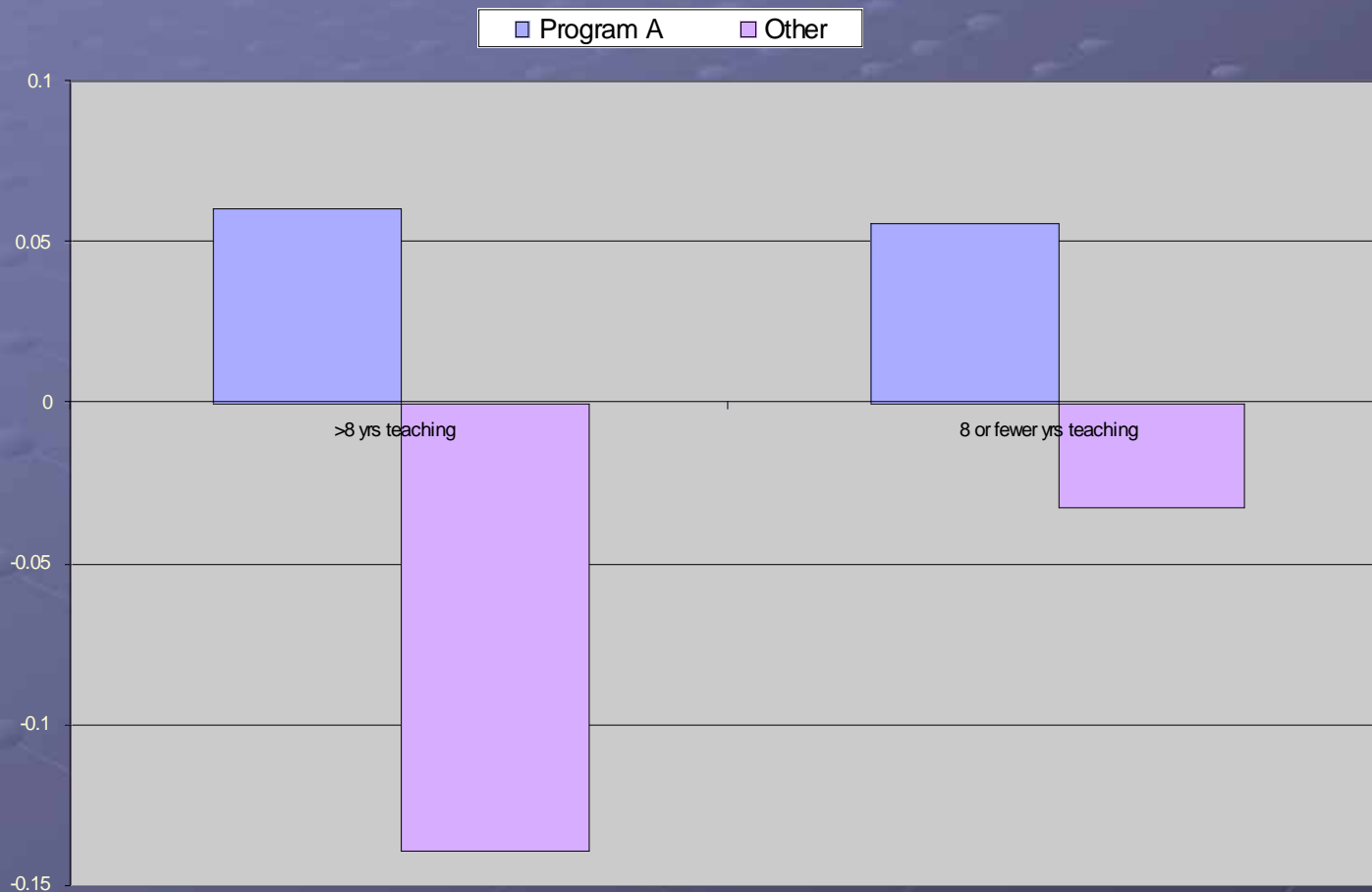
Feelings of Preparedness by Program Type
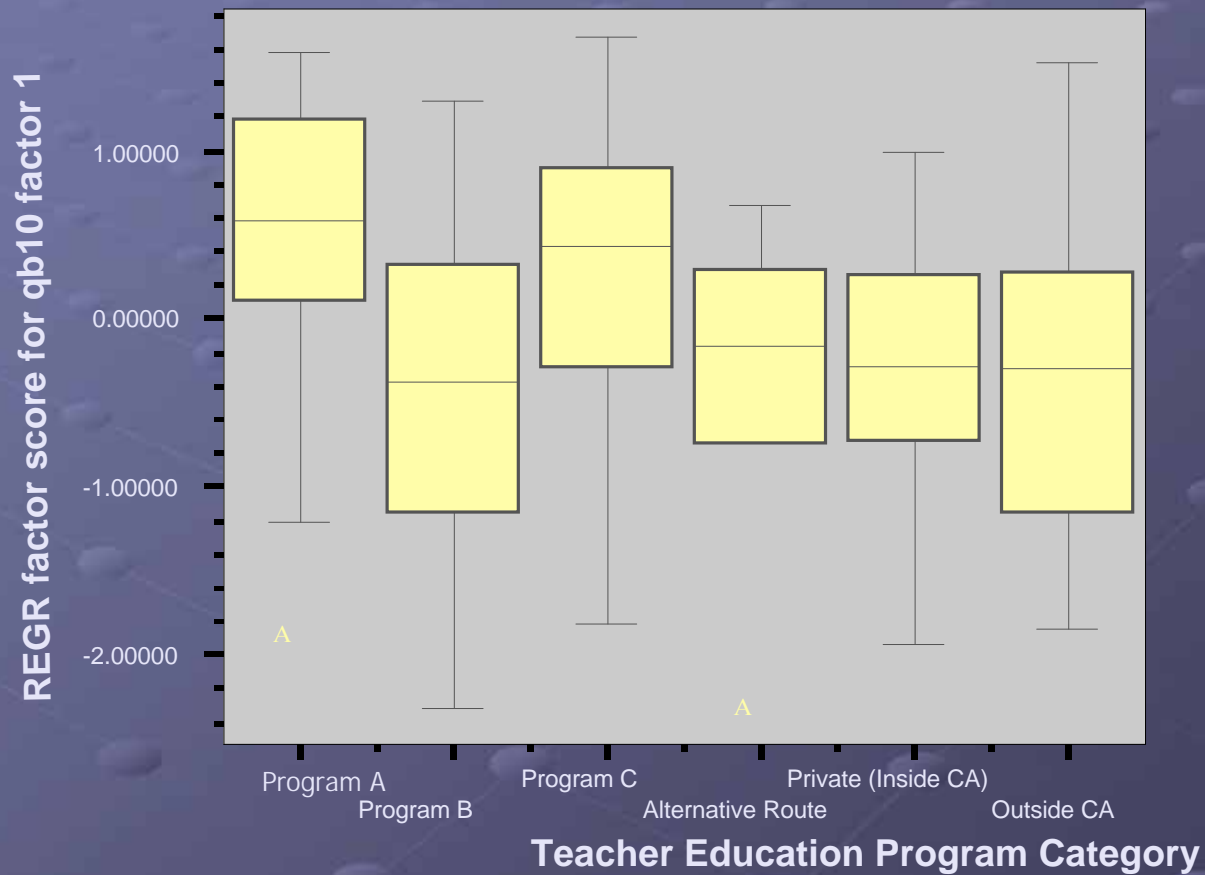
Program A Teachers Rank Higher in Value-Added "Effectiveness"

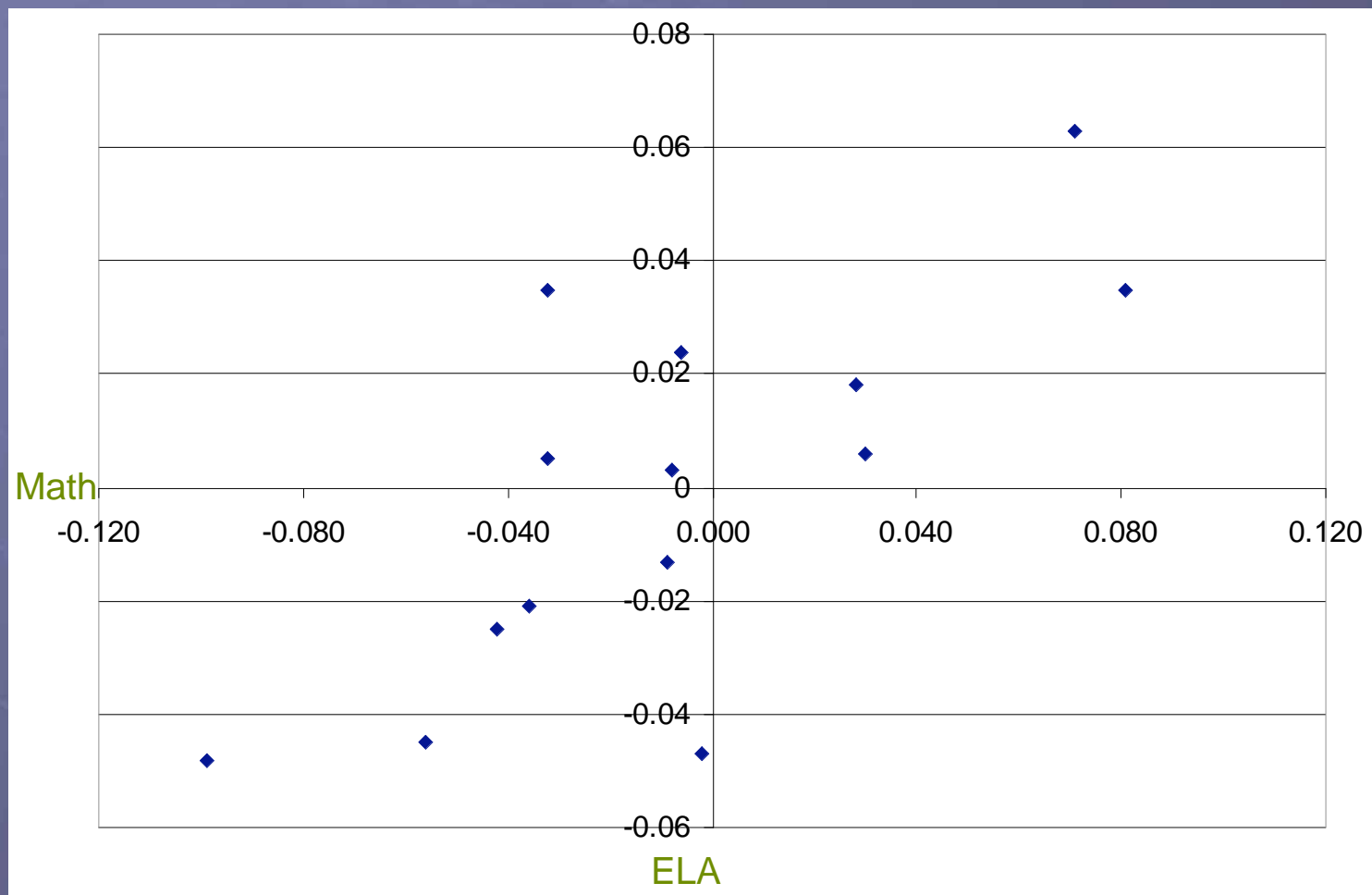**Mean effectiveness ratings, with student demographic controls & school fixed effects**

Program A Teachers Rank Higher in Value-Added "Effectiveness"

Mean effectiveness ratings, with student demographic controls

■ Program A   ■ Other

>8 yrs teaching

8 or fewer yrs teaching

Program Effects on NYC New Teacher Value-Added Estimates 2001-2006

Boyd, Grossman, Lankford, Loeb & Wyckoff, **Teacher Preparation and Student Achievement** 10

Program Features Influencing Value-Added Estimates of Teacher Effectiveness

- Student teaching experience and match to 1st teaching assignment
- Control of clinical placements & quality of teaching
- Focus on learning specific practices and applying tools to clinical experience
- Opportunity to learn to develop lessons that reflect different ways students learn
- Use of rubrics and methods that delineate expectations for student learning
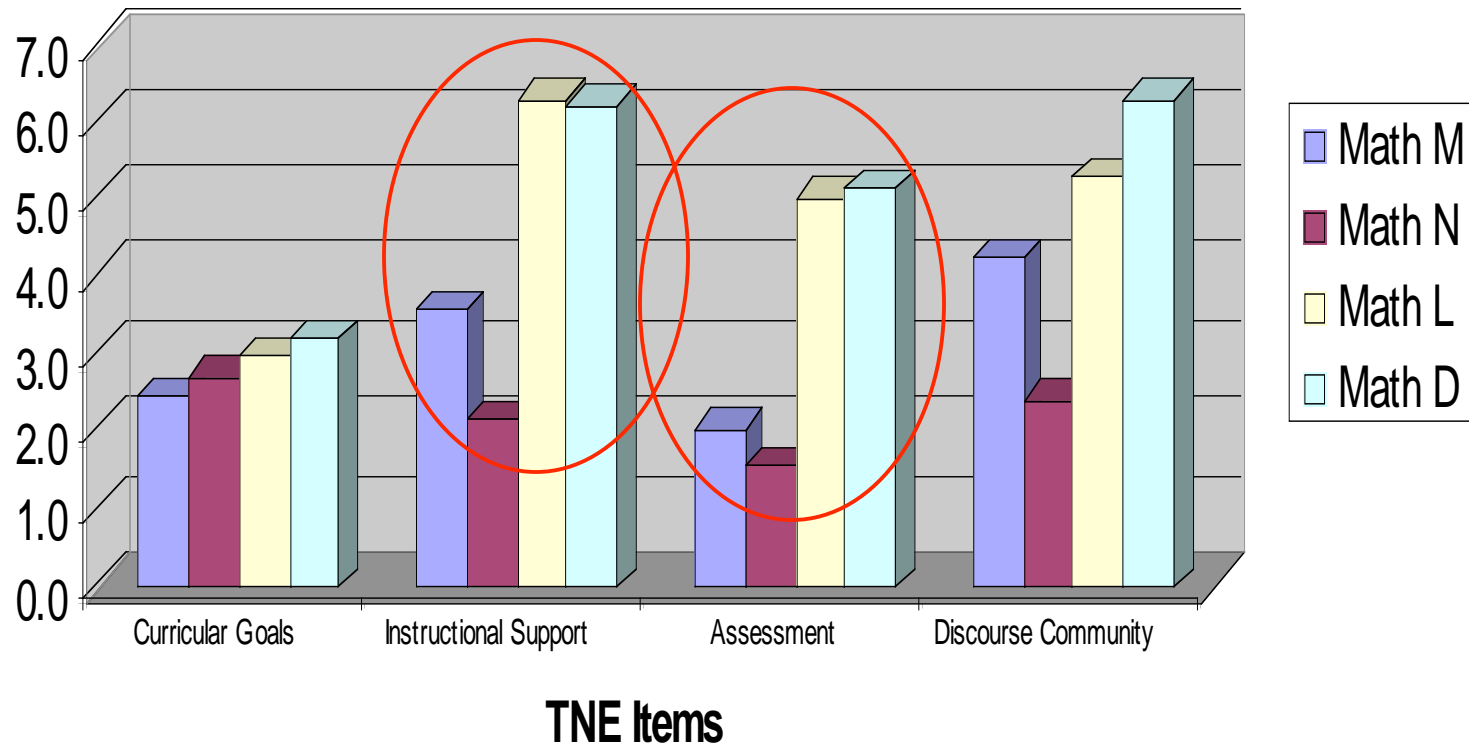- Study of local district curriculum
- Capstone project

"Effective" Teachers Exhibit Different Practices than Less Effective Teachers

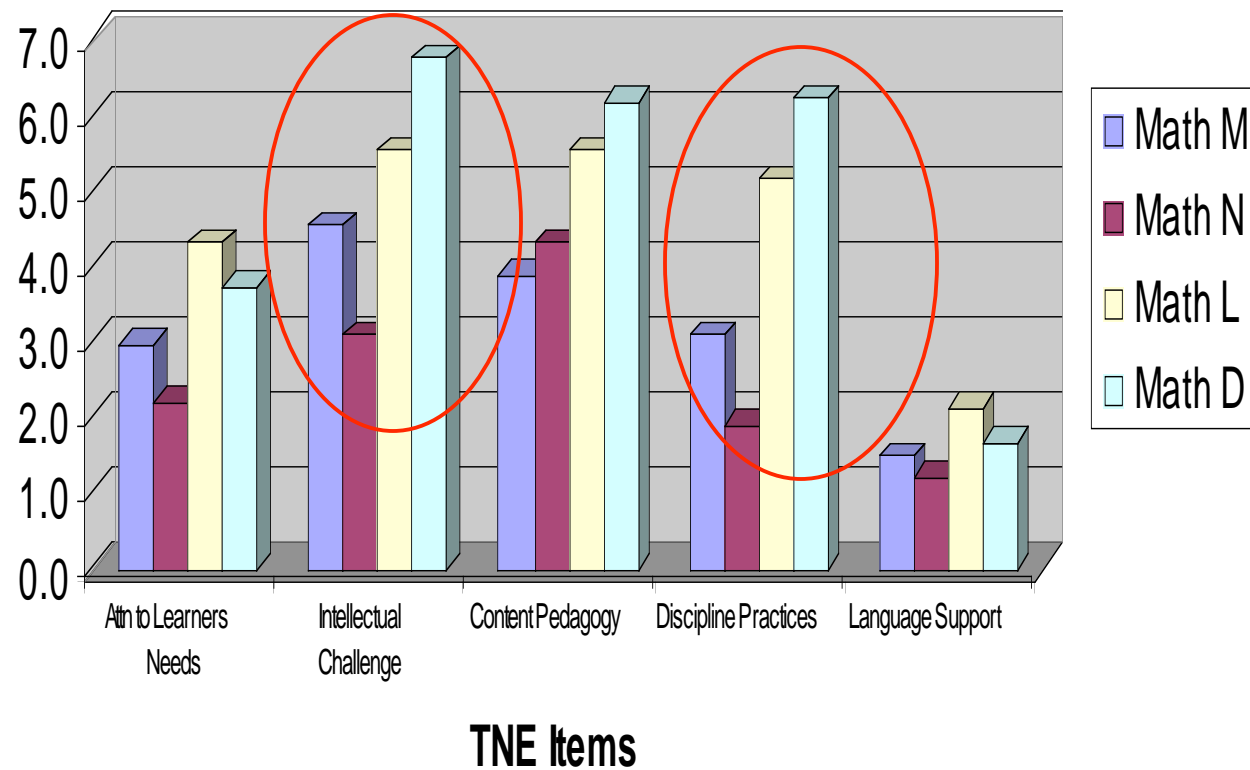Math Teachers Ratings by CLASS Domains
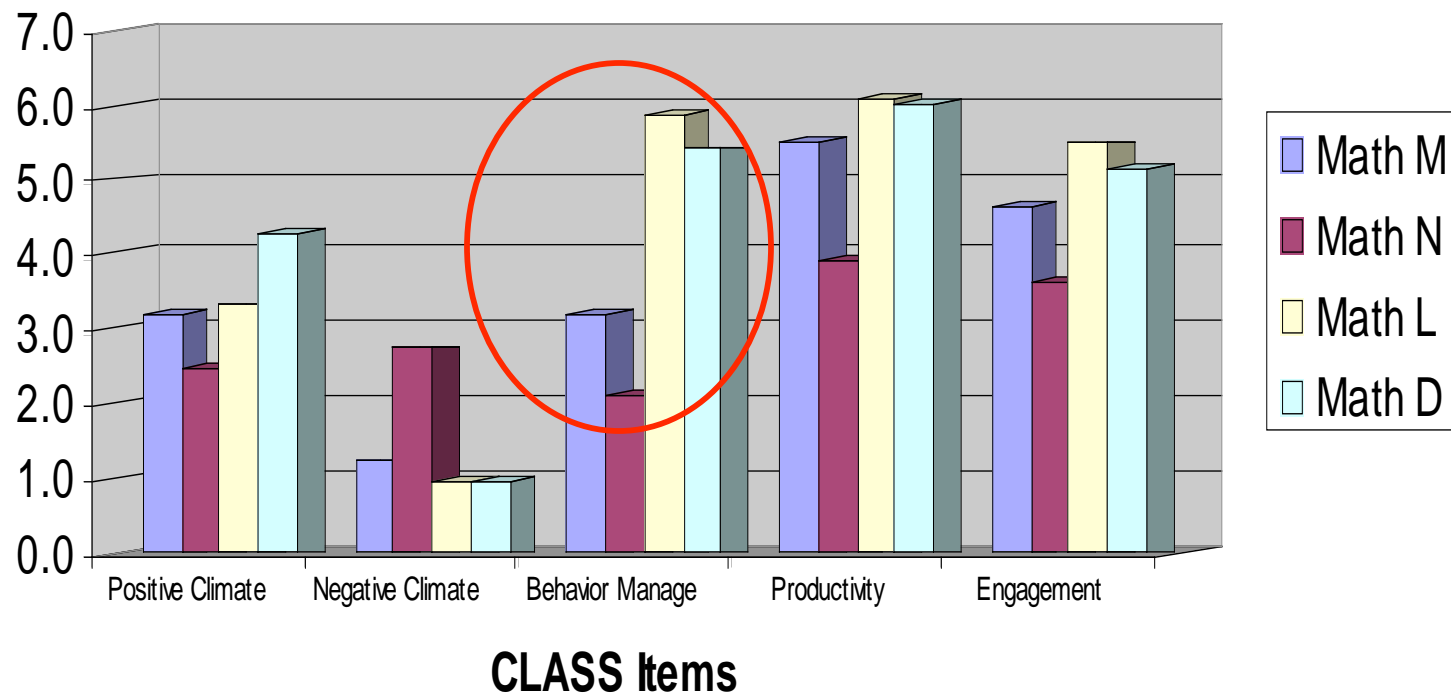
Math Teachers Ratings by TNE Domains
Part 1

Math Teachers Ratings by TNE Domains
Part 2

Research Needs

To learn more about how to improve teaching and teacher preparation, we need:

- Studies that evaluate and unpack reasons for the instability of teacher effectiveness ratings
- Studies that compare both practices and outcomes across programs & pathways;
- Longitudinal studies that can examine impacts over time, and take school context, induction, and professional development into account.

Designing Teacher Education Based on Evidence

- Evaluating program elements that appear to enhance teacher effectiveness
- Evaluating effects of program changes on teacher retention, performance, and beginning teacher effectiveness over time
- Evaluating the relationship between specific components of *programs*, specific teacher *practices*, and their relationship to a range of student *outcomes*.

Developing Data and Evidence
to Support Improved Preparation

- Linked teacher and student data bases that include program / pathway ID
- Surveys that provide better measures of preparation, mentoring, and PD as well as school context
- Teacher performance assessments validated against effectiveness that provide near-term evidence of competence and feedback to programs