

Using Value-Added-to- Student-Learning Measures to Improve Teacher Policy

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Three Examples

1. Utilizing Administrative Data
 - Pathways Into Teaching
2. Combining Administrative Data with Targeted Data Collection
 - Teacher Preparation
3. Difficulties and Possibilities of Assessing Differences in Teacher Quality Across Schools
 - Recent Teacher Labor Market Changes



Example 1

- Utilizing Administrative Data
- Using Value-Added Methodology to Estimate the differences in effectiveness of teachers entering NYC schools through different routes

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The Study

- Achievement data from NYC for 1999-2000 through 2003-2004
 - student gains in grades 4-8 linked to teacher.
- Defining Pathways
 - The route teachers follow into their first teaching job.
 - All teachers in New York must ultimately complete the same set of requirements to receive initial certification)
- Caveat: overlap across and variation within pathways.
 - For example, in 2004-05 about 1/4th of traditional fulfilled their student teaching requirement as a teacher of record.



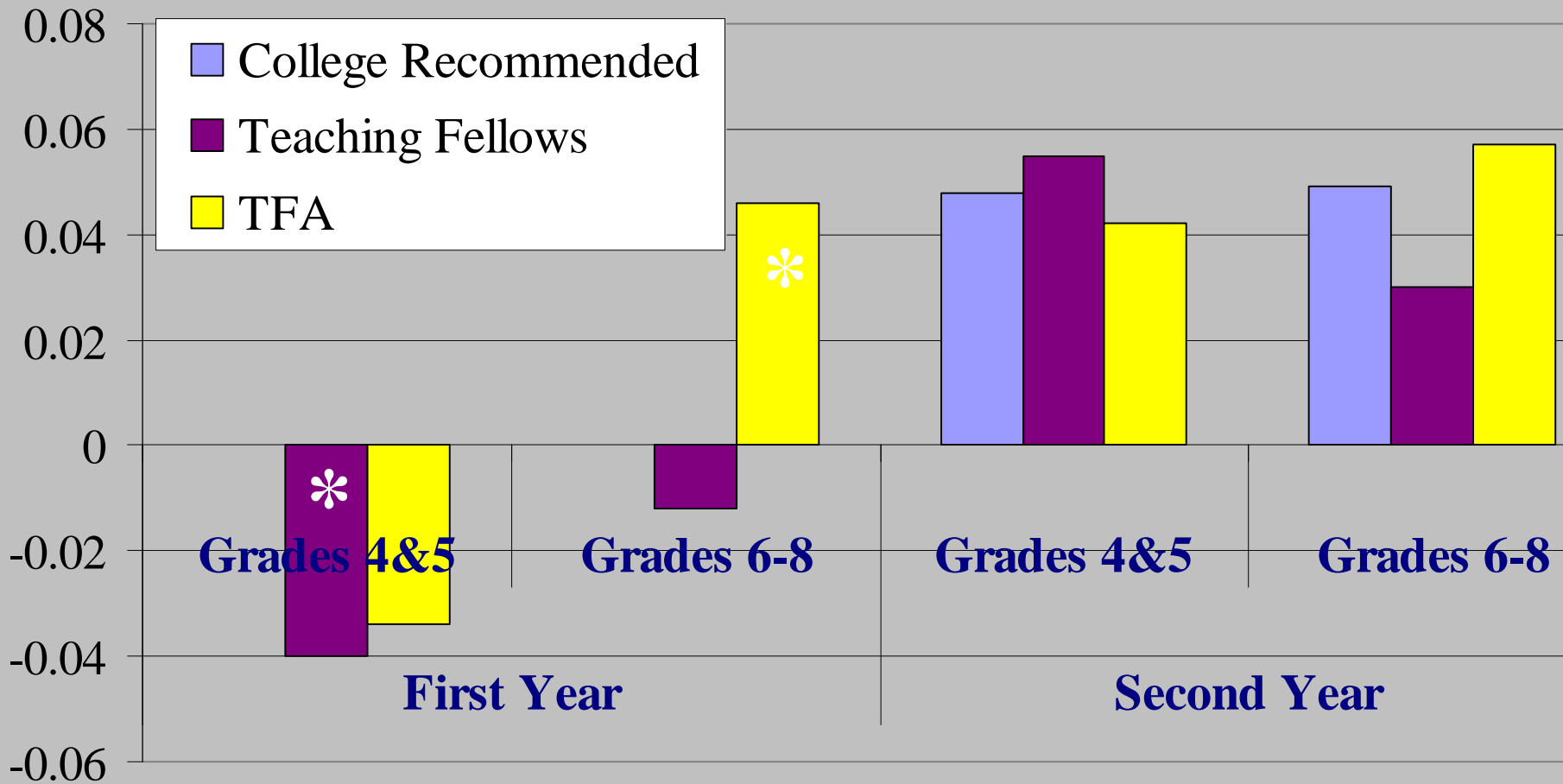
Methodology

- Comparing teachers within schools
- Adjusting for the students in the class
- Adjusting for the teachers' experience

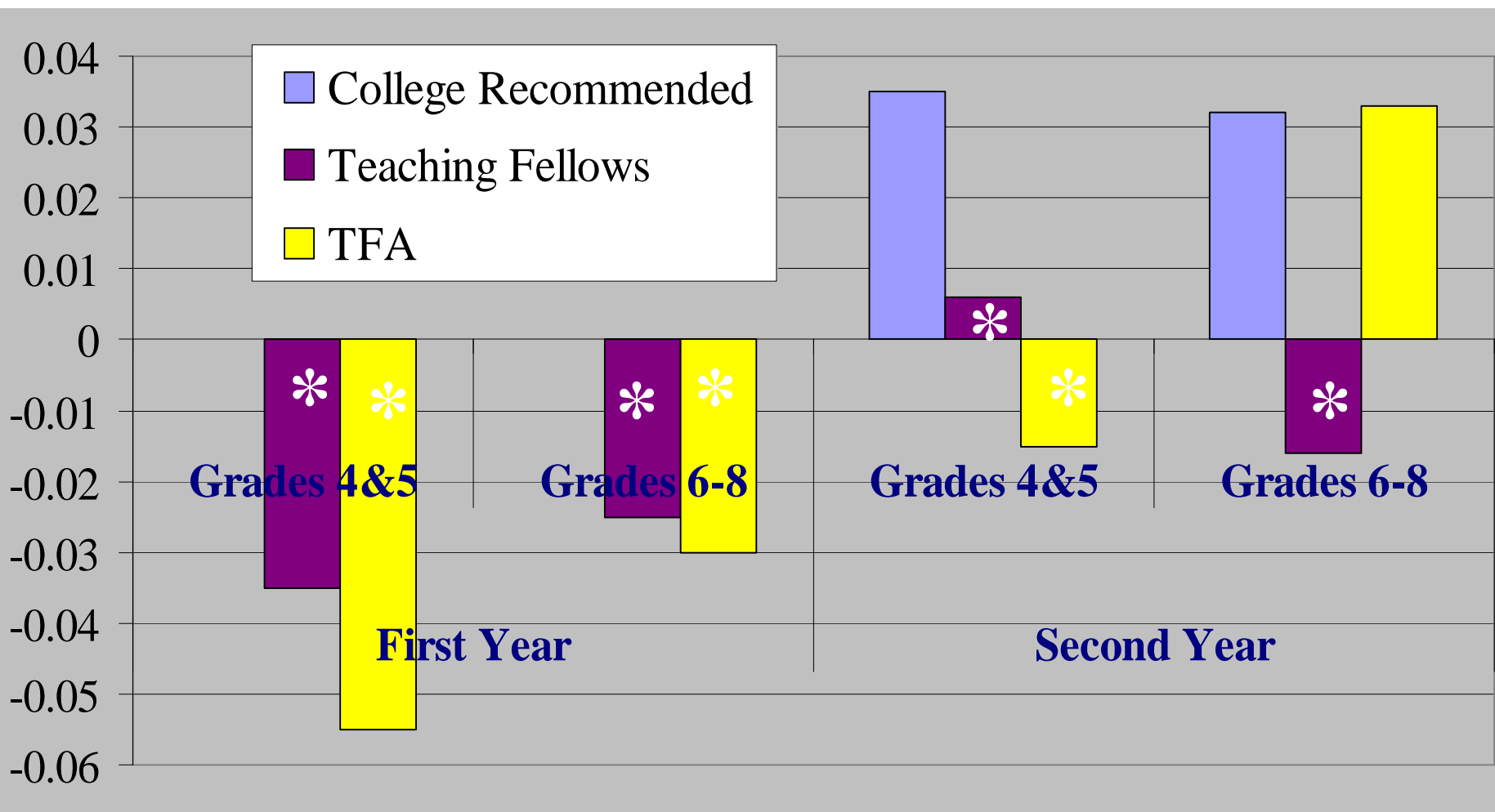
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Math Results: Pathways to Teaching



ELA Results: Pathways to Teaching



Example 1 Summary

- With no additional data collection, we can shed light on many relationships that are useful for decision-making
- In this case,
 - The alternative route teachers are stronger in Math than ELA, and in Middle School than in Elementary School

Example 2

- Combining Administrative Data with Targeted Data Collection
- How useful are different aspects of pre-service teacher preparation?

Similar Methodology

- ❑ Comparing teachers within schools or adjusting for school characteristics
- ❑ Adjusting for the students in the class
- ❑ Adjusting for the teachers' experience

- ❑ Additional data collection needed in this case

Program Features: Spring/Summer 2004

- 26 University Programs + 4 Fellows Programs + 1 TFA
- Document collection, interviews with director and director of field experiences, surveys of math and ELA methods faculty
- Many many measures but here focus mainly on link to practice. Program data are not ideal for this.
 - whether or not the program required a capstone project
 - a composite measure of the extent that the program maintains oversight over student teaching experiences
 - requires a minimum number of years of teaching experience for its cooperating teachers (32%)
 - program picks the cooperating teacher (42%)
 - program supervisor observes their participants a minimum of five times during student teaching (27%)
 - for comparison math and English content course requirements and the percent of tenure-line.



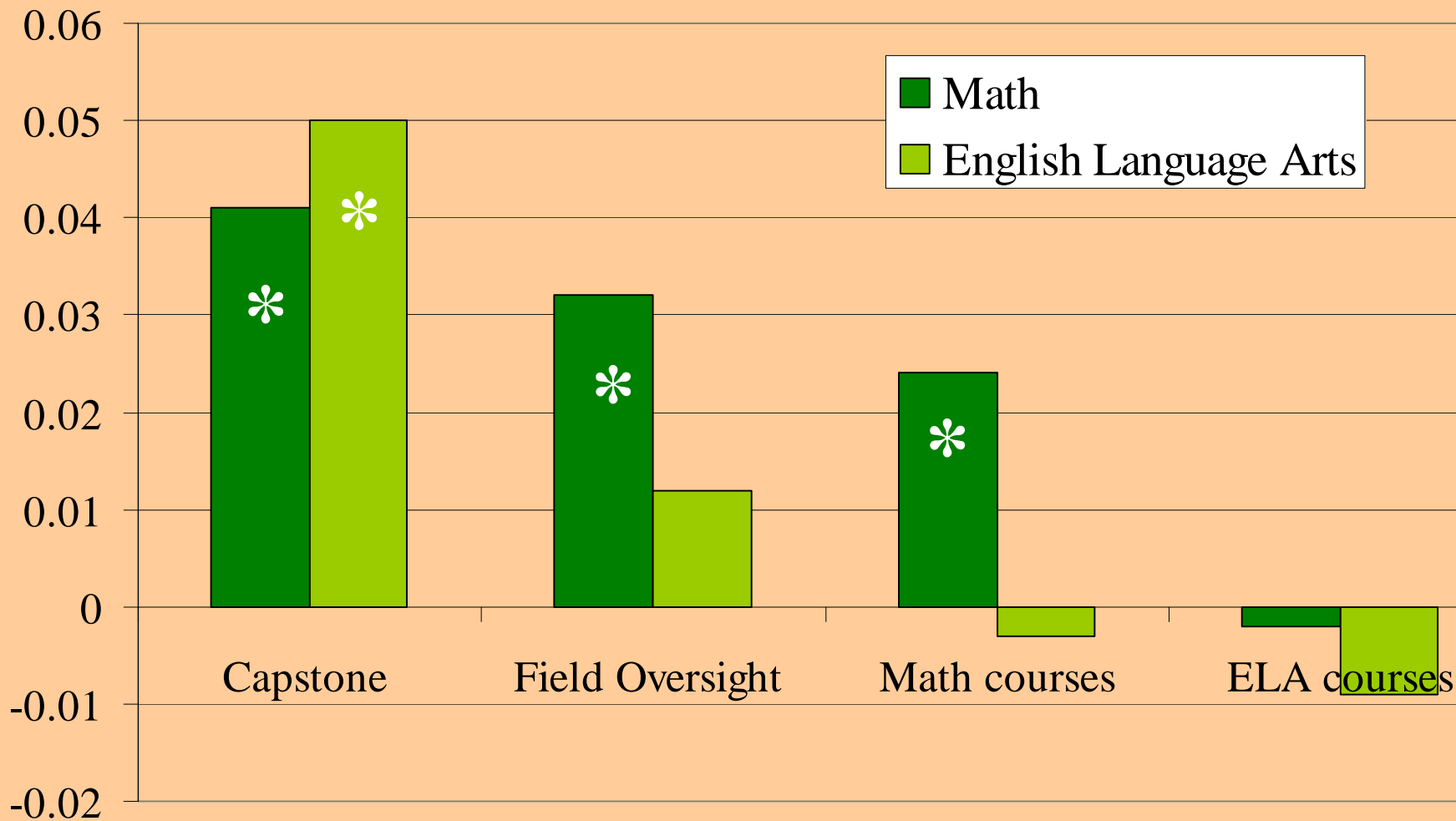
Teacher Survey Spring 2005

- All first year teachers in NYC
- Practice Variables
 - extent to which preparation included links to practice;
 - opportunities to listen to an individual child read aloud for the purpose of assessing his/her reading achievement;
 - ...Plan a guided reading lesson, and
 - ...Study or analyze student math work (each 5-point scale).
 - opportunities to study curriculum used in New York City ;
 - whether or not the teacher had student teaching experiences, not as the teacher-of-record in the classroom;
 - the congruence between student teaching placement and their current job assignment in terms of subject matter or grade level;
- Additional measures of preparation as controls and comparisons
 - opportunities to learn about teaching math and ELA;
 - ...to learn about learning;
 - ...to learn about handling student misbehavior; and
 - ...to learn about teaching English language learners.

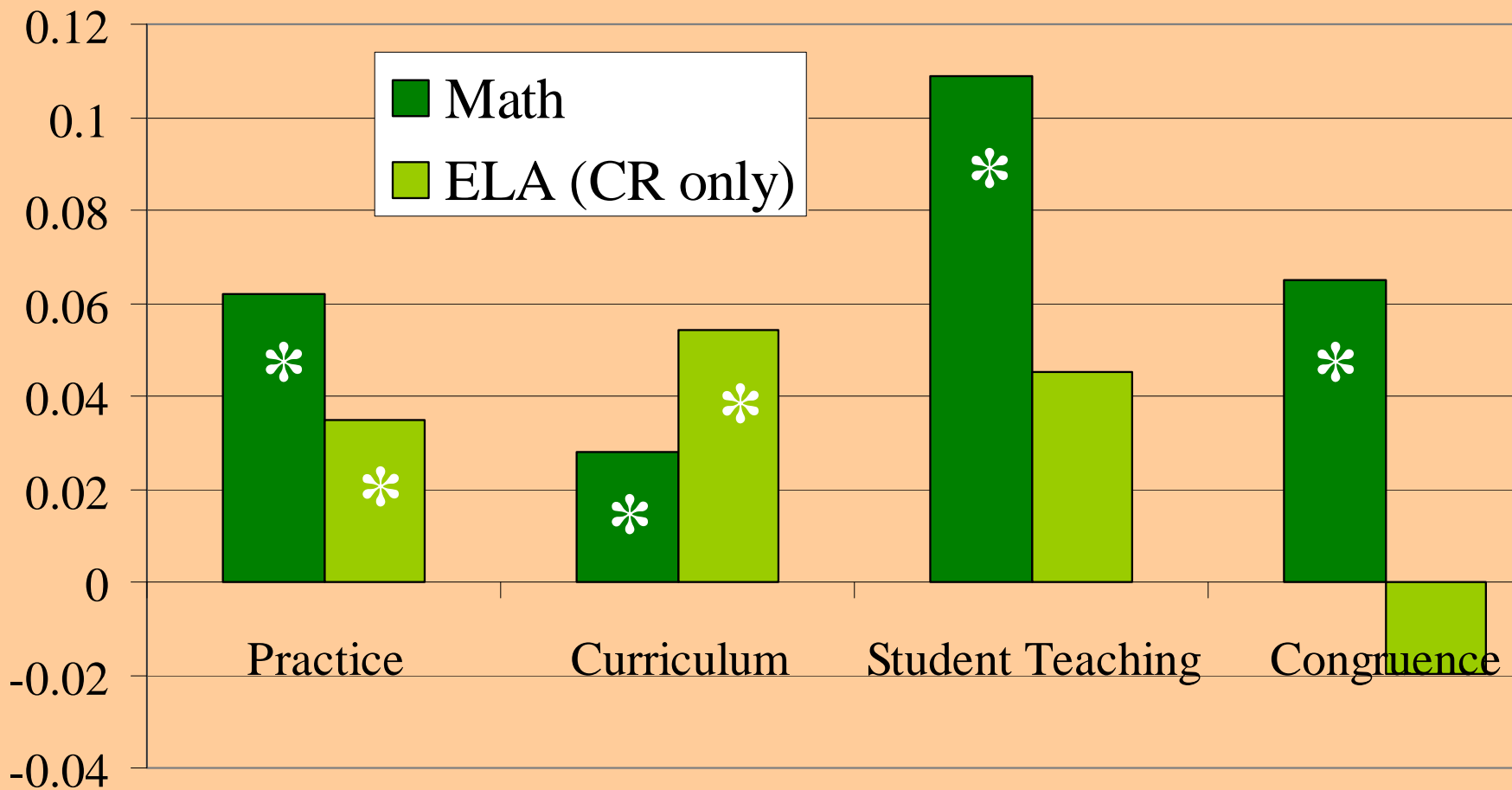
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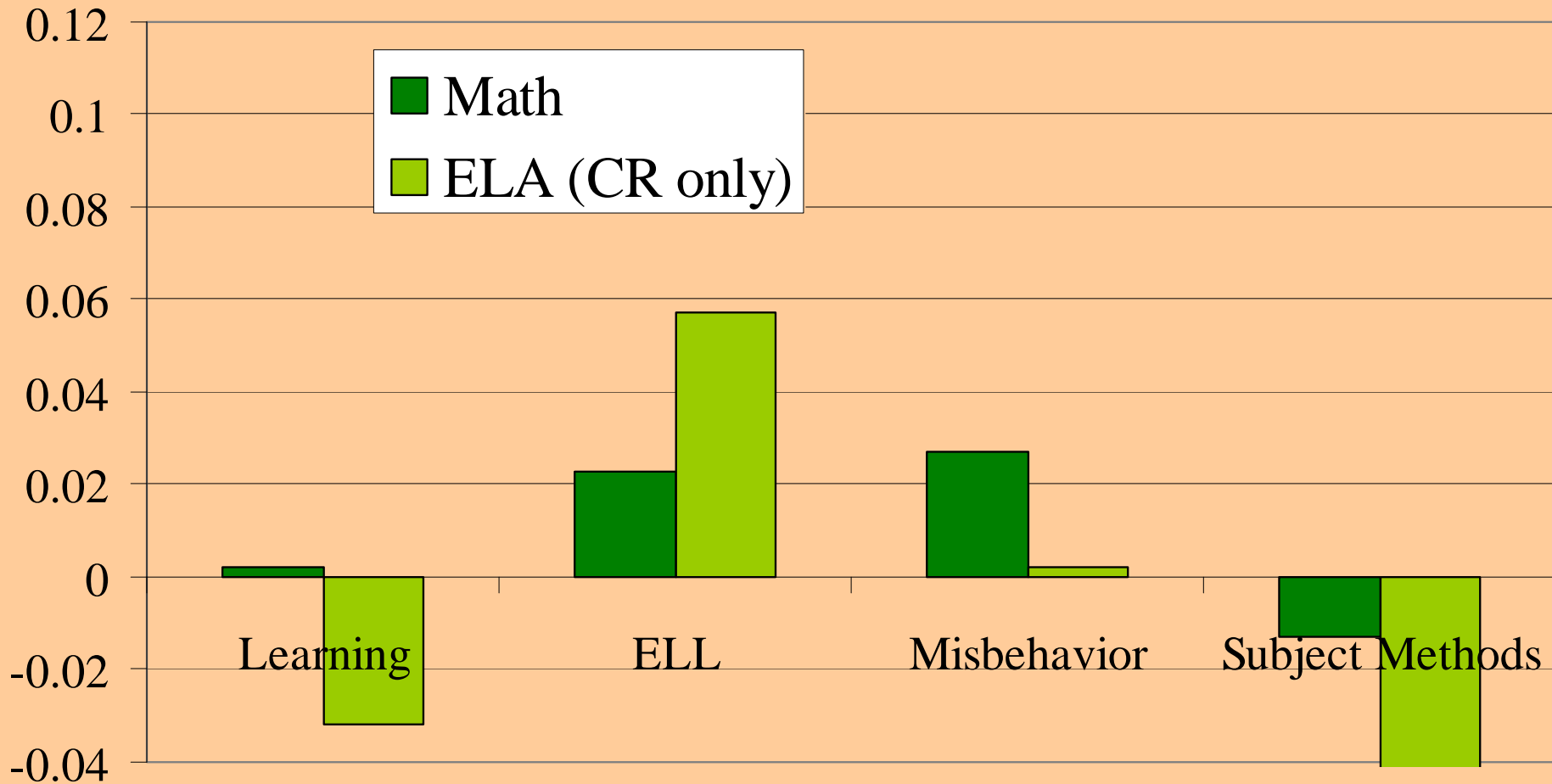
Program Data



Survey Data



In Contrast: Survey Data



Example 2 Summary

- Value-added measures can be combined with original data collection to target analyses to particularly pressing questions
- In this case,
 - First year teachers benefit from pre-service practice doing the work of teaching
 - The effects fade after the first year
 - Some indication that content preparation becomes more salient after the first year



Example 3

- Difficulties and Possibilities of Assessing Differences in Teacher Quality Across Schools
- Estimating Policy Effects and Trends
- Changing Teacher Labor Market in the Early 2000s

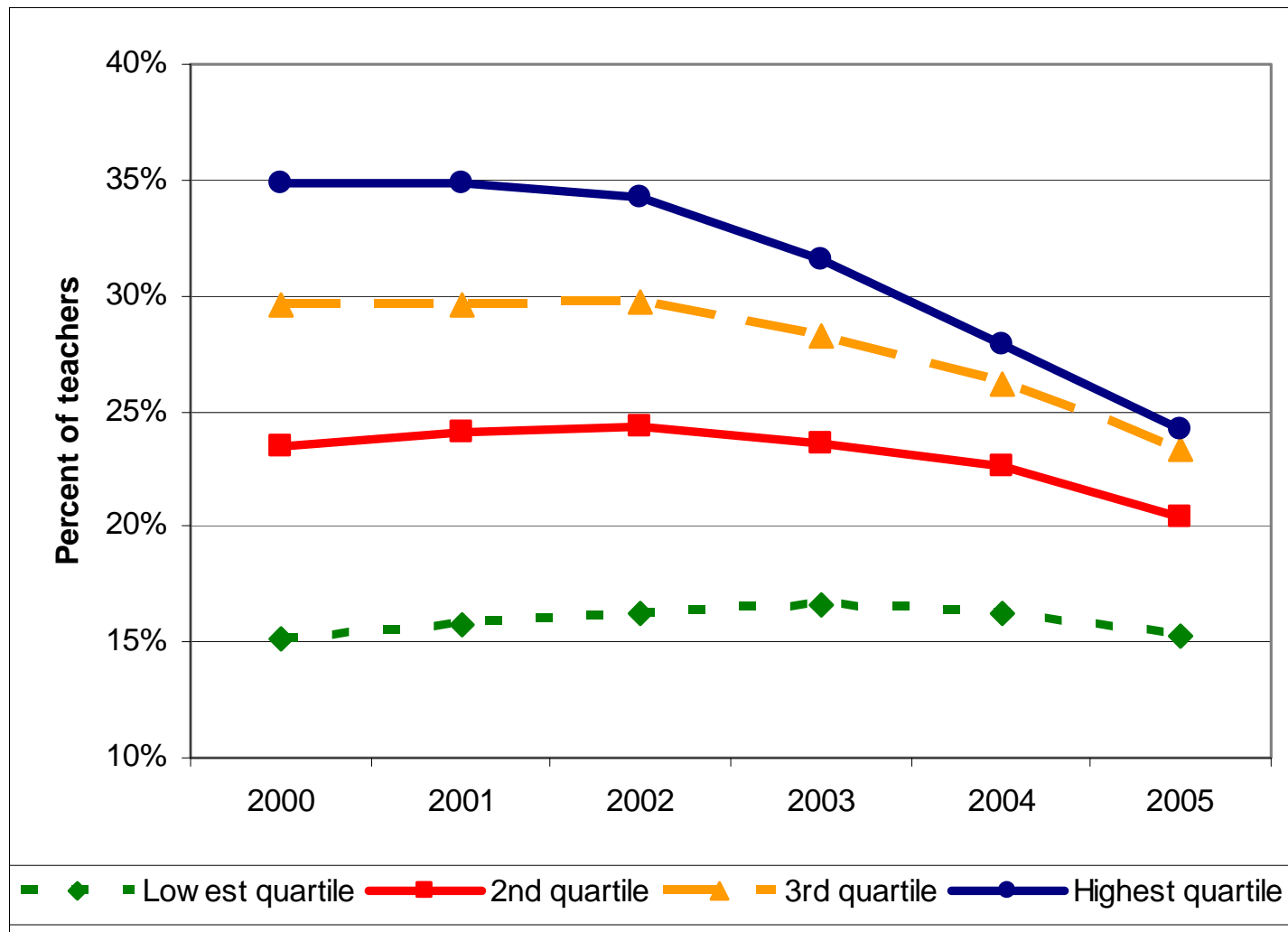


The Context

- In 2000 the NYS Regents created alternative certification routes
- In 2000 the NYC Department of Education created its first cohort of Teaching Fellows
- Highly Qualified Teacher Provision of NCLB 2001
 - Required teachers to be fully State-certified, bachelor's degree and demonstrate competency in the core academic subject or subjects taught
- Effective September 2003, NYS Regents eliminated temporary licenses for uncertified teachers with very limited exceptions
- Between 2000 and 2003 starting salaries in NYC increased from \$33,186 to \$39,000



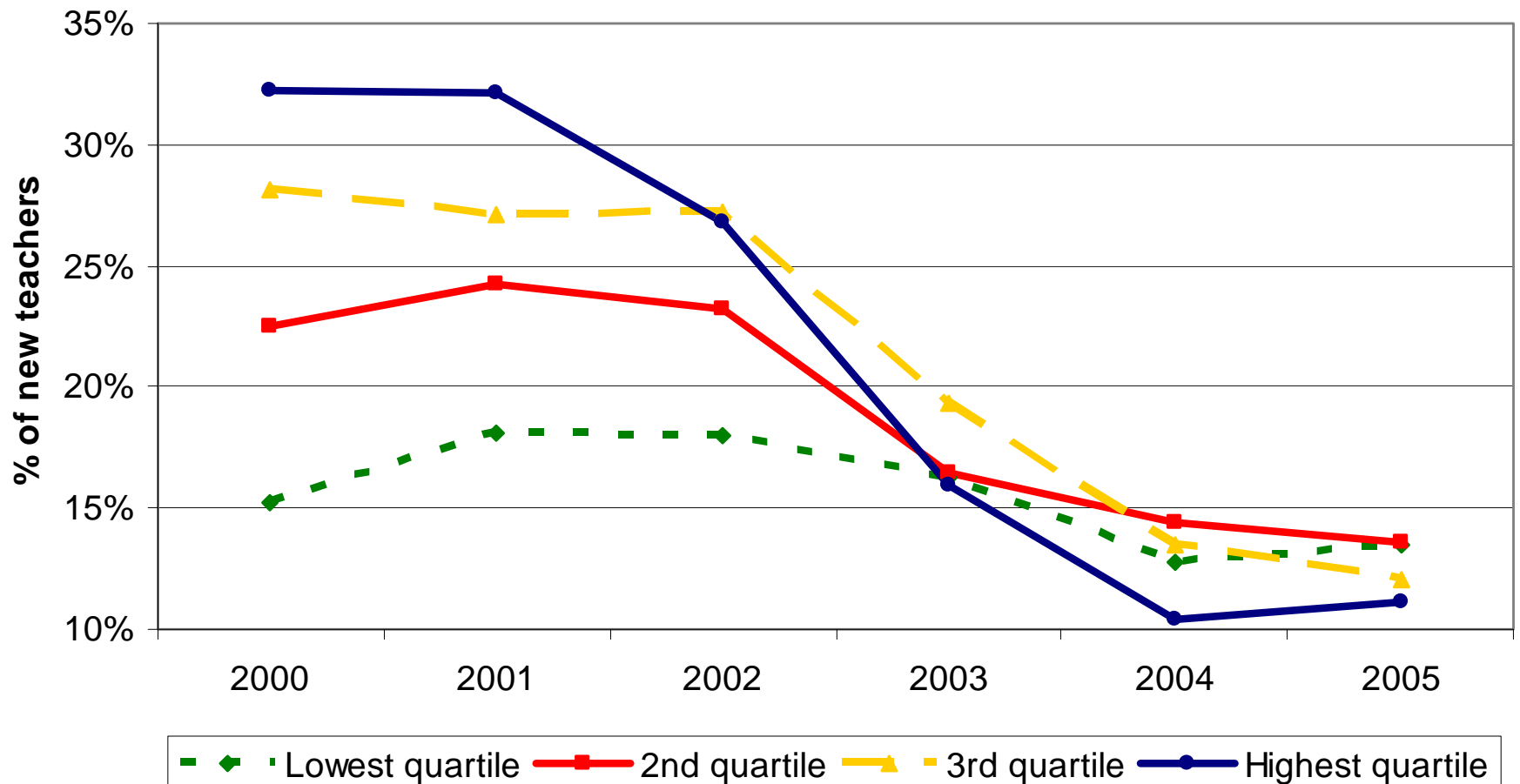
LAST Exam Failure Rate of Elementary Teachers by Poverty Quartile, 2000-2005



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LAST Exam Failure Rate of New Teachers by Poverty Quartile, 2000-2005



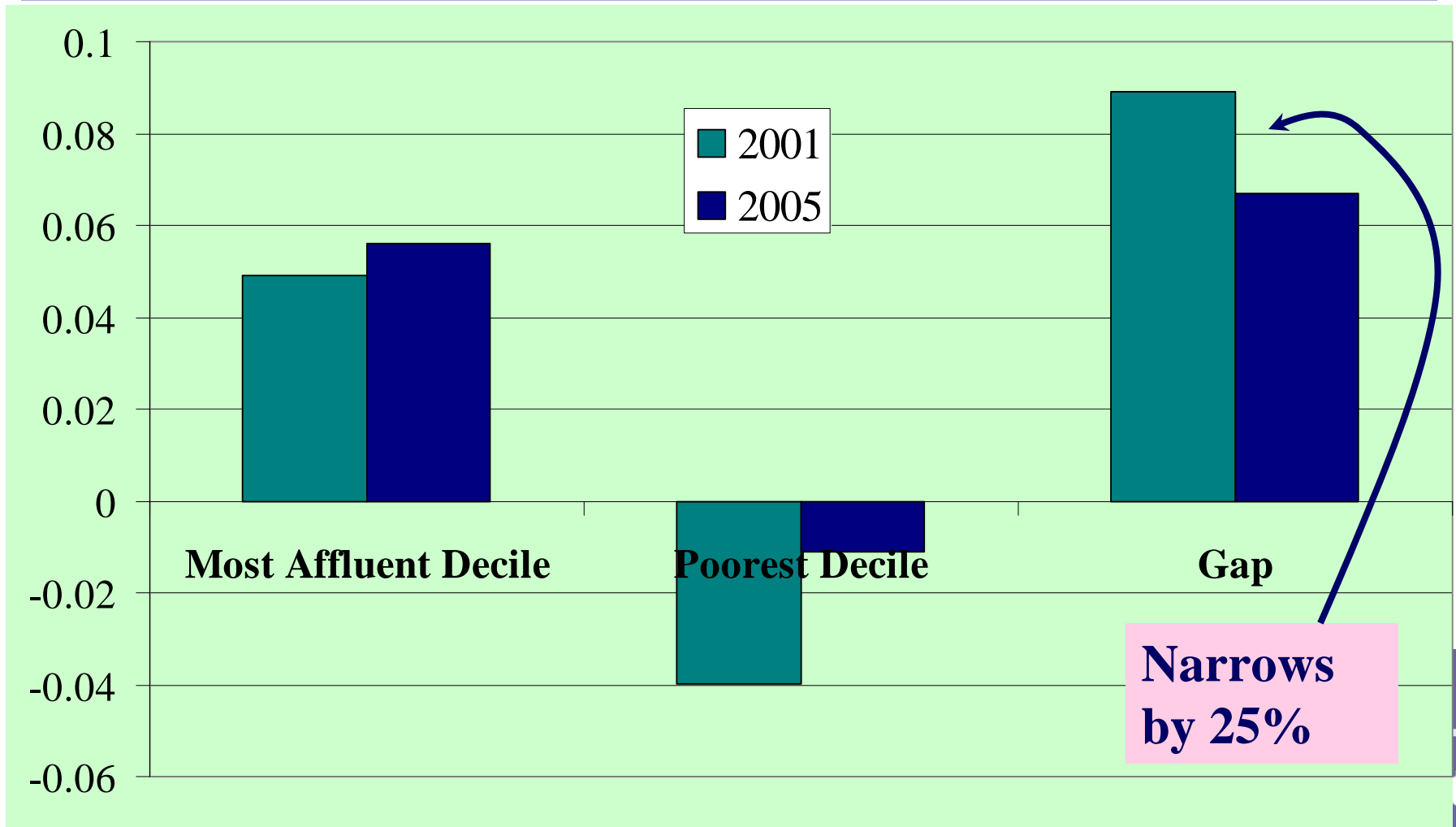
The Study

- Did this substantial change in the distribution of teachers across schools lead to meaningful changes in the distribution of teacher-effectiveness across schools?
- Problem: difficult to compare teacher effectiveness across schools and especially across schools with different student populations
- **Can estimate the effects of teacher attributes by comparing teachers within schools, then use these estimated effects to predict each teachers value-added (based on his/her attributes)**
- See how the distribution of this predicted effectiveness changed over time.

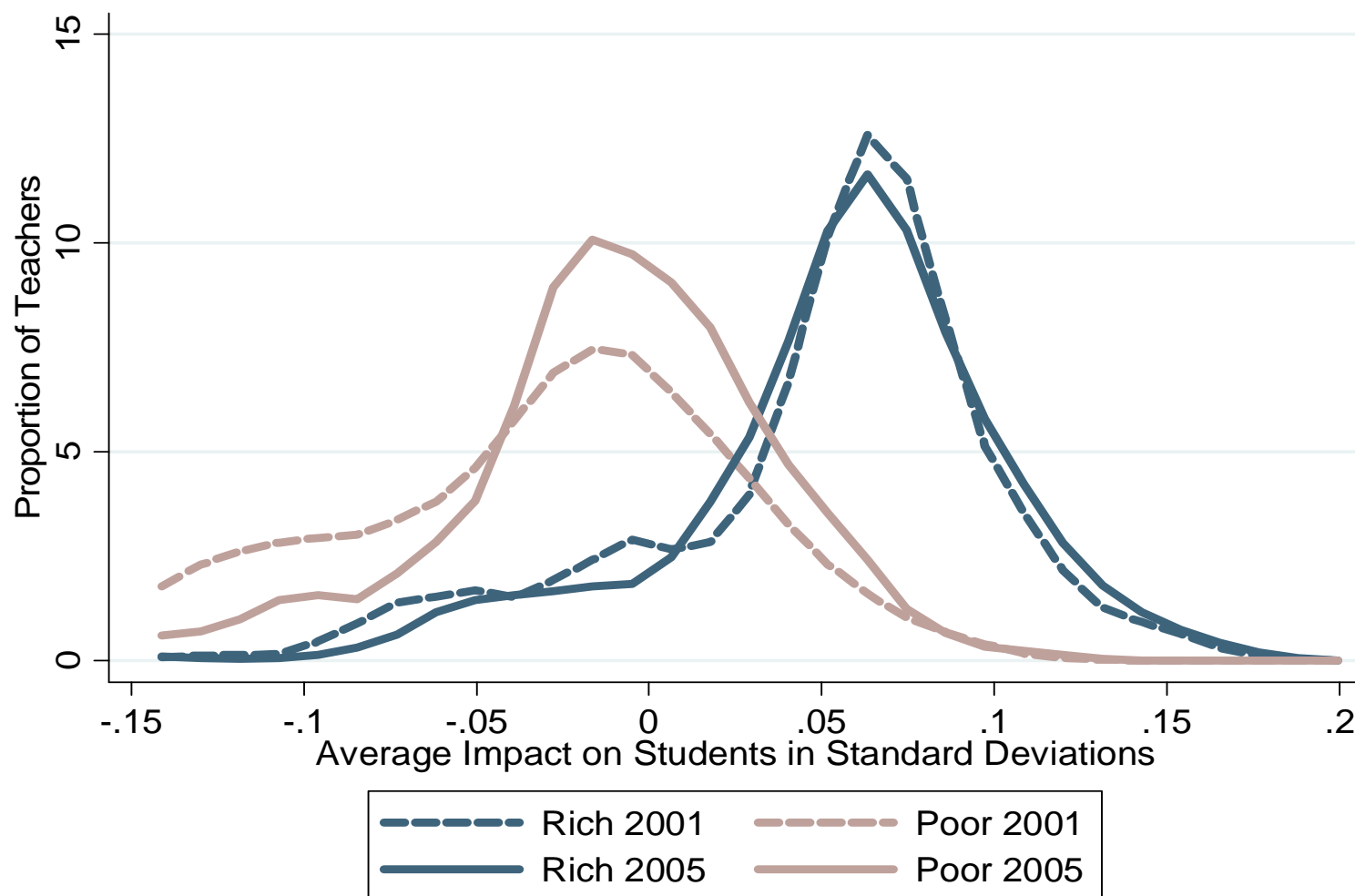
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Predicted Effectiveness For Highest and Lowest Poverty Schools



Change in Gap Driven by Exit of Teachers with Lowest Predicted VA



Can change predicted effectiveness by selection up-front

Mean VA by Quintile (poor schools)	Passed Exam	Not Certified	Math SAT	Verbal SAT	college competitiveness			
					Most	Some	Less	Not
-0.068	0.46	0.73	355	440	0.04	0.07	0.55	0.35
-0.032	0.66	0.14	414	467	0.05	0.07	0.54	0.34
-0.010	0.78	0.08	423	462	0.09	0.13	0.44	0.34
0.010	0.85	0.03	450	470	0.16	0.20	0.37	0.27
0.045	0.91	0.01	512	474	0.25	0.25	0.35	0.15

- Meaningful difference based only on attributes, though monitoring, development and selective retention also needed



Example 3 Summary

- Value-added measures are not ideal for assessing differences in effectiveness across schools
- Can use them in combination with attributes to estimate the effects of some changes, though not capturing the full effects
- In this case,
 - The phasing out of temporary (emergency) certification and the introduction of alternative routes likely improved teaching in high-poverty schools



Conclusion – Value-Added Measures

- Available in many districts and some states
- Use with other administrative data.
 - alternative route teachers are relatively better in middle school than elementary and in math than ELA
- In combination with new data for pressing questions
 - pre-service practice in the work of teaching pays off in the first year
- While imperfect for assessing cross-school differences, can shed some light on these differences and the effects of policy changes
 - recent changes in the teacher labor market likely contributed to greater achievement in high-poverty schools

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